

# Challenges for Monetary Policy: An Introduction to the 2019 Economic Policy Symposium

---

*A. Lee Smith*

The decade since the global financial crisis offers a natural milestone to reflect on the challenges that confront central banks today. The adequacy of pre-crisis monetary policy frameworks has been challenged by the severity of the recession and the uneven recovery that many economies experienced. The unsynchronized nature of global growth in the wake of the crisis led central banks to chart different courses for the normalization of monetary policy following a period in which most central banks used both conventional and unconventional policy tools. While some central banks are approaching a neutral policy setting, others have yet to begin the process of removing policy accommodation, leading to a divergence in interest rates with implications for exchange rates, trade and economic activity. Amid this recent divergence, decades-long trends of declining real interest rates and greater global and financial integration create common challenges shared by many central banks. In light of these emerging and ongoing global economic developments, the need for a forum to assess the challenges that confront central banks' as they pursue their mandates is apparent.

The 2019 Jackson Hole Economic Policy Symposium sought to foster dialogue among central bankers from across the world. The global nature of the challenges confronting the world's economies

required an international gathering that the annual Federal Reserve Bank of Kansas City's symposium was uniquely able to facilitate.

### **Challenges for Monetary Policy: A United States Perspective**

Federal Reserve Chairman Jerome H. Powell opened the symposium by placing the current challenges facing the Federal Open Market Committee (FOMC) in a historical context. Since the end of World War II, the U.S. economy has transitioned through many "Greats." Powell recounted that the period of economic prosperity that followed the end of World War II culminated in the Great Inflation, a period of high and volatile price growth. This era led many central banks to warm to the merits of some form of inflation targeting, which contributed to the stabilization of inflation and coincided with a period of overall economic tranquility, leading this post-Great Inflation era to be called the Great Moderation. The Great Moderation then ended abruptly with the onset of the Great Recession, the most severe U.S. recession of this post-war period.

The U.S. economy emerged from the Great Recession by way of the longest economic expansion on record. The unemployment rate, which peaked at 10% in 2009, has fallen steadily and now hovers near half-century lows. Powell noted that the benefits of the strong labor market are broadening to workers that historically have had less successful labor market outcomes; the unemployment rate for African-Americans, at 6%, is the lowest since the government began tracking it in 1972 and, for the past few years, wages have been increasing the most for people at the lower end of the wage scale. Moreover, he noted that while inflation has been surprisingly stable throughout this period of contraction and expansion, it presently is near, albeit slightly below, the FOMC's 2% inflation objective. Thus, after a decade of progress toward maximum employment and price stability, the FOMC is close to both objectives assigned by Congress.

Against this backdrop of a strong labor market and stable inflation, Powell described the Federal Reserve's current challenge as one of sustaining the expansion. However, emerging obstacles will make this task more difficult than in previous decades. Powell spoke of several obstacles, but two seem especially relevant to the current

expansion: the tendency for long expansions to breed financial excesses and the observation that estimates of neutral real interest rates—the setting of the inflation-adjusted federal funds rate which keeps growth near trend and inflation near 2%—have declined significantly in recent decades. Regarding the former, he said, “We have not seen unsustainable borrowing, financial booms, or other excesses of the sort that occurred at times during the Great Moderation, and I continue to judge overall financial stability risks to be moderate.” On the latter, low levels of neutral interest rates leave less room for policymakers to reduce interest rates in the event of a downturn which, as Powell said, elevates the risk of lengthy, difficult-to-escape periods in which the policy interest rate is pinned near zero. To address this longer-term problem posed by low interest rates, he said the FOMC is conducting a public review of its monetary policy strategy, tools and communications—the first of its kind for the Federal Reserve.

Elements of this first-ever Federal Reserve policy review include an inspection of the adequacy of the FOMC’s policy tools in both normal times and during crises. In addition to assessing the adequacy of the current policy toolkit, which was described in detail by then Chair Janet Yellen at the 2016 Jackson Hole symposium, Powell said the FOMC also is looking at how to improve the communication of its policy framework. These elements of the policy review—the adequacy of central banks’ toolkits and effective public communication of central banks’ strategies—are key themes that would emerge throughout the proceedings.

### **Monetary Policy Divergence**

The first paper, written by Òscar Jordà, vice president in the Economic Research Department of the Federal Reserve Bank of San Francisco and professor of economics at the University of California-Davis, and Alan M. Taylor, professor of economics at the University of California-Davis, explores the basic but profound question of what drives monetary policy. Is the path of interest rates driven by cyclical fluctuations in output and inflation or do global forces have a greater-than-appreciated bearing on interest rates? The backdrop of this question is the growing discussion of monetary policy divergence. In the aftermath of the global financial crisis, every

major central bank aggressively eased policy. However, in response to asymmetrical recoveries, only some countries have exited from these policies. Does this pattern mark the beginning of a great period of economic and policy divergence?

Jordà and Taylor bring careful measurement and a long-term, multicountry perspective to weigh in on the topic of monetary policy divergence. They first define and estimate the stance of monetary policy, which they pursue by measuring the deviation of the short-term real interest rate from the corresponding neutral rate of interest. This will serve as their benchmark for measuring monetary policy divergence. They then compare this measure of policy stance across major advanced economies, including Germany, Japan, the United Kingdom and the United States back to 1955.

The main result from this analysis is that the recent degree of monetary policy divergence has been largely overstated. Instead, when measured in terms of the gap between short-term policy rates and neutral rates of interest, monetary policy divergence is at its lowest point over the past six decades. This convergence in monetary policy has occurred alongside an increase in the synchronicity of the global business cycle, as the authors also find that inflation and output gaps across countries similarly have converged in recent decades. That said, Jordà and Taylor find that cyclical fluctuations in inflation and output gaps don't explain much of the movement in policy rates. Instead, global trends, dictated by productivity growth, demographics and other factors outside of its control, play a much more significant role in explaining movements in real short-term interest rates. This conclusion reinforces the notion that individual central banks may have little individual autonomy to pursue their domestic mandates as, instead, there is a set of longer-run forces, dictated by global factors that drive interest rates across the world.

Discussant Kristin Forbes, the Jerome and Dorothy Lemelson Professor of Management and Global Economics at MIT's Sloan School of Management, reinforced the view that global developments play a greater-than-appreciated role in driving interest rates in any one country. However, she questioned the authors' measurement of the policy stance, with implications for the concluded degree of monetary policy

divergence. Forbes had three primary concerns with Jordà and Taylor's choice to measure the degree of monetary policy divergence across advanced economies in terms of the deviation of the short-term real interest rate from the corresponding neutral rate of interest. First, she pointed out that the short-term real interest rate has not been the only policy instrument deployed in recent years by central banks. Therefore, making this short-term rate the focal point of the analysis overlooks the unconventional dimensions across which monetary policy may diverge. Second, she noted that excluding the emerging world from their analysis may overlook the important role the emerging world plays in shaping global interest rates through their capital flows, savings and investment, and demographics. And, third, she cautioned that even the best, state-of-the-art analysis leads to estimates of the neutral interest rate which are uncomfortably imprecise.

Forbes also expressed her own view regarding why monetary policy divergence may be a larger issue in practice than is suggested by Jordà and Taylor's analysis. She recounted the experience of the Bank of England (BOE) in 2014. In the spring of that year, the BOE provided guidance that it was likely to increase its policy interest rate soon, which led investors to anticipate an increase in U.K. rates from their low levels before the United States or the euro area would "lift off" from their crisis-era policy rates. However, this "liftoff" never occurred for the U.K. as the mere prospect of monetary policy divergence contributed to a sharp appreciation of the sterling, which tightened financial conditions and weighed on inflation. While the projected widening of interest-rate differentials under the BOE's planned rate increase was rather modest, the apparent effect that this projected divergence had on exchange rates and capital flows suggests that the issue of policy divergence may be especially acute today. Forbes posited several possible explanations for this, including better integrated financial markets in an era of low interest rates, which could lead investors to quickly deploy large amounts of capital across borders in pursuit of even modestly higher returns. While speculative, if exchange rates have become more sensitive to modest differences in policy rates across countries, Forbes suggests that the issue of policy divergence may not necessarily hamper the pursuit of

domestic mandates. Instead, central banks may be able to achieve their mandates with even smaller changes in interest rates.

### **Monetary Policy Spillovers to Advanced and Emerging Market Economies**

The next paper by Şebnem Kalemli-Özcan, the Neil Moskowitz Professor of Economics at the University of Maryland, builds on the topic of interest rate divergence, but from the perspective of foreign economies that must navigate shifts in U.S. monetary policy. The backdrop for this paper is the increasing sense that U.S. monetary policy plays an outsized role in driving global interest rates, risk premia and capital flows, particularly during the recent period of unconventional monetary policy. In this paper, Kalemli-Özcan carefully inspects both where and through which channels shifts in U.S. monetary policy reverberate. Are advanced or emerging market economies more vulnerable to spillovers created by U.S. monetary policy? Do these spillovers manifest in changes in central bank policy rates, changes in risk premia, or both?

Kalemli-Özcan brings both an analytical framework and data from over 90 countries to understand the mechanisms through which U.S. monetary policy spills over to other countries. She first documents that the relationship between a country's interest-rate differential vis-à-vis the United States and the amount of foreign capital flowing into the country depends importantly on investors' risk perceptions. For instance, even if yields in a foreign country diverge from the United States, investors may be reluctant to invest abroad at the higher yield if the perceived risk—often risk that is specific to that country—is elevated. While the notion that investors take into account risk when allocating capital is understood, the novel insight that Kalemli-Özcan provides in this paper is that these perceptions of risk are themselves positively correlated with yield differentials vis-à-vis the United States. If an unexpected increase in the U.S. policy rate reduces global risk sentiment, as Hélène Rey documented in her 2013 Jackson Hole paper, and other central banks keep rates on hold, then this should not be the case as interest rate spreads above the U.S. policy rate and risk sentiment would move inversely. Therefore, the positive relationship between rate differentials and

risk sentiment suggests that, in general, foreign central banks adjust their policy rates in response to shifts in U.S. monetary policy.

Kalemli-Özcan goes on to show that the spillovers to non-policy interest rates from shifts in U.S. monetary policy differ greatly by country and that these differences reflect the differential responses of the risk premium demanded by investors. For example, following an unexpected increase in the U.S. policy rate, interest-rate differentials narrow in advanced foreign economies but widen in emerging market economies. This finding may suggest that even if emerging market economies cut policy rates in response to contractionary U.S. policy and the deterioration in sentiment that ensues, the rate cuts may not be effective in preventing financial conditions from tightening. Moreover, amid the capital outflows that tend to follow declining risk sentiment, some emerging market economies may be tempted to actually raise policy rates to stem the flight of capital and protect their desired exchange rate, amplifying the tightening in domestic financial conditions. She highlights that these dynamics underscore important roles for flexible exchange rate policy and macroprudential policy to alter country-specific risk and ultimately decouple capital flows from shifts in U.S. monetary policy.

Rey, the Lord Raj Bagri Professor of Economics at the London Business School, provided a discussion of Kalemli-Özcan's contribution from her unique perspective as author of a 2013 Jackson Hole symposium contribution which documented that U.S. monetary policy drives global risk perceptions and hence global capital flows. Kalemli-Özcan's paper builds on this research by shedding light on how these developments play out across different countries with different policy regimes. Rey's primary comments centered around two issues. First, she highlighted that the widening in emerging market economies' interest differentials following an unexpected increase in the U.S. policy rate could emerge from either a cut or an increase in the home country's policy rate. Rey encouraged more work to understand which of these dynamics is at play by directly studying policy responses as opposed to government bond rate differentials. For instance, are countries with less flexible exchange rates more likely to increase policy rates following a contractionary shift in U.S.

monetary policy? The answer could shed light on the country-specific risk factors that play an important role in Kalemli-Özcan's analysis. This leads to Rey's second comment, which was an invitation for researchers to probe more deeply at the drivers of risk perceptions. In particular, Rey pointed out that most macroeconomic models lack the time-variation in risk aversion that underpins both her own work and Kalemli-Özcan's. She concluded her discussion by noting that yet more work, along the lines of Kalemli-Özcan's contribution, is needed to understand how different policies from different central banks interact.

### **What Does It Mean To Be a Data-Dependent Central Banker?**

In the final paper on Friday, Athanasios Orphanides, professor of practice of global economics and management in the Sloan School of Management at MIT, presented his paper titled "Monetary Policy Strategy and Communication." This paper reviews and evaluates the recent history of Federal Reserve policy decisions and communication. Orphanides' basis for evaluation is that monetary policy and communication should be understood and predictable by the public. He argues that, while practically challenging, this is best accomplished through policy rules rather than discretion, and that the rules should be communicated to the public frequently, in clear language. The data inputs used to apply the rules—and, importantly, the rationale for deviations from the rule—also should be communicated.

With an eye toward policy rules that can be operationalized, that is implemented and communicated in real time, Orphanides centers much of his empirical analysis on the FOMC's quarterly Summary of Economic Projections (SEP). Four times a year, the FOMC publicly releases participants' projections of inflation, unemployment and real GDP growth up to three years into the future. As of 2012, each FOMC participant also submits projections for the path of the federal funds rate under "appropriate" monetary policy. Orphanides shows that the median projection for the federal funds rate has evolved systematically with the median projections for inflation and unemployment in a manner consistent with a "first-difference" policy rule. Since these "first-difference" rules rely only on information available in the SEP, which is released to the public every quarter, communicating the



Federal Reserve's monetary policy strategy through this rule would allow the public to better understand how monetary policy likely will be adjusted in response to incoming data.

Orphanides argues that communicating the Federal Reserve's monetary policy strategy through a rule also would help the FOMC more systematically pursue unconventional policy actions, such as large-scale asset purchases (LSAPs). He highlights that these unconventional policy actions often were criticized for being overly discretionary. Since there are no well-formulated policy rules when it comes to LSAPs, Orphanides argues for communicating these policies as a natural extension of the typical interest rate adjustments the FOMC makes when the current federal funds rate is not constrained by the zero lower bound. He proposes, as an example, that if a 2-percentage-point expansion in the size of the Federal Reserve's balance sheet eases financial market conditions by an amount roughly equivalent to a 25-basis point reduction in the federal funds rate, then asset purchases can be calibrated to pursue any chosen interest rate rule. While Orphanides acknowledges that any mapping between conventional and unconventional monetary policy will be inexact, he emphasizes that monetary policy will remain most effective when it is systematically pursued in a similar manner both away from and at the zero lower bound.

Frank Smets, director general economic of the European Central Bank (ECB), provided the first discussion of Orphanides' paper. Smets frames the session's question of what it means to be a data-dependent central banker as falling squarely in the classic *rules versus discretion* debate. He asks: "Does being a data-dependent central banker mean that she makes decisions from meeting to meeting depending on the incoming data in a discretionary way? Or does it mean that she commits to a well-specified policy rule that systematically links incoming data to her policy instruments?" The trade-offs of this issue balance the need for policy flexibility to adapt to a changing world with the need for a clear understanding of the central bank's reaction function, or policy rule. Smets highlights that Orphanides' call for the FOMC to publish a simple policy rule favors the rules camp rather than discretion. He, however, sees the key issue as one of robustness; how durable is *the* rule to an evolving world? While he

is sympathetic for Orphanides' proposed "first-difference" rule, and indeed shows that it not only fits past FOMC interest-rate decisions but also past ECB interest-rate decisions as well, he notes that it is not a panacea. His two doubts center on the durability of this rule to both the evolution of the economy's longer-run growth rate—a measure which is unobservable in real time—as well as the challenges raised by following a rule at the zero lower bound—when it may be necessary to keep policy rates lower for longer than is prescribed by a policy rule. Instead, Smets argues for striking a balance between rules and discretion with a constrained discretion regime whereby clarity about the central bank's goal is combined with a transparent communication strategy that explains how the central bank's actions are geared at achieving this goal.

Valerie Ramey, a professor at the University of California-San Diego, started her discussion of Orphanides' paper by putting in context the obvious role that data must play in formulating monetary policy by remarking: "I admit that my first encounter with the statement that 'policy should be data-dependent' left me puzzled—it had as much meaning to me as someone saying that 'cooking should be ingredient-dependent.'" While data is an essential input into monetary policy, the mapping between data and policy is layered and complex. Ramey argued that the flow of data, and often sizeable data revisions, enter into economic models and policymakers' judgements about the current state of the economy. This process often leads to new estimates of not only the current position of the economy but also its position relative to longer-run variables, such as the neutral rate of interest or the natural rate of unemployment, which also are revised with new data. Moreover, the constant reassessment of the economy's past and current performance can lead to revisions of how and where monetary policy may transmit. Many of these filters through which the data are interpreted are nebulous and filled with uncertainty, making it difficult to communicate clearly to the public how data informs monetary policy. Ramey concludes that the sheer fact that economic relationships will never be as stable and precise as physics relationships means that central bank judgement will remain a key element of monetary policy. Therefore, the communication of monetary policy will remain inherently challenging.

## **Challenges Embedded in the International Monetary and Financial System**

Bank of England Governor Mark Carney offered an address over lunch which focused on the challenges that the international monetary and financial system (IMFS) poses for central bankers today. The biggest challenge he sees in the current global financial system is the continued reliance on the dollar as the world's reserve currency. Although the U.S. economy accounts for just around 15% of global economic output, half of all global trade takes place in dollars and two-thirds of global securities are issued in dollars. Carney noted that this reliance on the dollar means that U.S. monetary policy is exported abroad, leading to particular strains in foreign economies, including spillovers of U.S. developments to countries with little direct trade or financial exposure to the United States. He noted that these spillovers can be especially acute when global growth is out of sync and U.S. conditions warrant tighter policy there than elsewhere.

To address the challenge posed by the dollar's outsized role in the global economy, Carney proposed both near-term and longer-term solutions. In the short run, he advised central banks to pass on the temptation to offset inflation deviations emanating from shifts in the terms of trade vis-à-vis the dollar. Instead, he encouraged central banks to use the full flexibility of inflation targeting to focus on core price stability while remaining transparent about the temporary fluctuations in inflation due to global developments. In the longer run, the IMFS should be reoriented away from any one currency to instead reflect the global nature of commerce and trade as "Any unipolar system is unsuited to a multipolar world." Carney suggested that the transition away from a dollar as the world's reserve currency could be facilitated by new technologies. In particular, he proposed that digital currencies present the opportunity to develop a virtual synthetic currency basket that could one day supplant the dollar as the world's reserve currency. As this technology matures, Carney predicted that it has the potential to anchor a new IMFS with broad benefits, including a reduction in the spillovers from the dollar to global trade and financial cycles.

## **Responding to Commodity Price Shocks in an Era of Financialization**

On Saturday morning, Silvana Tenreyro, professor of economics at the London School of Economics and an external member of the BOE's Monetary Policy Committee, further examined the role of global spillovers, but those emanating from commodity markets rather than foreign central banks. Specifically, Tenreyro and her co-authors, Thomas Drechsel of the University of Maryland and Michael McLeay of the BOE, take a fresh look at an old question: How should central banks respond to commodity price booms and busts? This question is posed against a backdrop of increasingly "financialized" commodity markets. The authors therefore take the novel angle to answer this question from the perspective of a commodity-exporter with both real and financial linkages to global commodity markets.

The authors give particular emphasis to the linkages between global commodity prices and commodity exporters' domestic financial conditions. This emphasis is motivated by the stylized fact that commodity prices increasingly are synchronized, suggesting a common global commodity cycle. Moreover, the authors document that the impulses from this global commodity cycle to output growth have intensified in commodity exporting countries. The authors' benchmark policy prescription is for central banks to lean against these boom and bust cycles in order to dampen the pass-through of commodity prices to domestic financial conditions. By increasing interest rates in response to a commodity boom, the central bank allows the currency to appreciate, which limits the rise in foreign demand as domestic goods become relatively more expensive. Therefore, exchange rate adjustments play an important role in transmitting the central bank's policy.

Tenreyro and her co-authors develop their benchmark policy prescription in a setting with well-anchored inflation expectations. However, the authors point out that for some emerging commodity exporters, tackling recurrent periods of high inflation is a first-order task for monetary policy. Therefore, exchange rate pegs are tempting to some central banks as they offer a direct approach to inflation stabilization. A key tension emerges because exchange rate pegs can be

difficult to defend in the face of falling commodity prices. Widening the scope of their analysis beyond their model economy, the authors discuss case studies from Argentina, Chile and Mexico. These case studies highlight the importance of policy credibility and make clear the need for more research to understand how, in practice, central banks can best navigate commodity cycles.

Wei Xiong, a professor from Princeton University, discussed Drechsel, McLeay and Tenreyro's paper and highlighted two further challenges central banks face when responding to commodity price swings. First, Xiong noted the difficulty in discerning the source of the movement in commodity prices in real time. Commodity price shocks can emerge from either supply or demand dynamics with each having different economic implications; therefore, appropriately calibrating the monetary policy response is crucial—even for countries who have already achieved inflation stability. The second challenge he highlighted is the tendency for commodity booms to bring not only flows into the commodity sector, but to also attract broader capital flows. Therefore, following Drechsel, McLeay and Tenreyro's benchmark policy prescription and raising interest rates as commodity prices rise could attract foreign inflows and amplify the easing in domestic credit conditions. Instead, Xiong suggests that macroprudential policies may be more effective at fine-tuning the policy response to commodity price booms and busts.

### **Interaction of Monetary Policy with the Supply and Demand of Sovereign Debt**

For the final paper of the program, Arvind Krishnamurthy, the John S. Osterweis Professor of Finance, and Hanno Lustig, the Mizhuho Financial Group Professor of Finance, both of the Graduate School of Business at Stanford University, explore how monetary policy interacts with the demand and supply of sovereign debt. Given the U.S. dollar's role as the global reserve currency, the authors examine how shifts in U.S. monetary policy propagate through global financial markets. The key premise that underlies Lustig and Krishnamurthy's paper is that since U.S. Treasury securities are the world's preferred safe asset, the dollar exchange rate must adjust to balance the global demand and supply of dollar-denominated assets.

Lustig and Krishnamurthy establish the special role that U.S. Treasury securities play in global financial markets using the concept of the U.S. Treasury basis. The authors define the U.S. Treasury basis as the yield on an actual U.S. Treasury security minus the yield on an equivalent synthetic U.S. Treasury security constructed from a foreign bond with the same maturity, converted into dollars through foreign exchange markets. If there were nothing special about U.S. Treasuries, then one would expect the U.S. Treasury basis to be zero. Instead, the authors show that the U.S. Treasury basis is consistently negative. The authors interpret the negative Treasury basis as an indication that global financial markets perceive Treasury securities as yielding safety and liquidity services that other government debt does not provide. Simply put, investors are willing to forgo consistent returns to instead hold U.S. Treasury securities. Moreover, Lustig and Krishnamurthy show that the U.S. Treasury basis varies with the dollar exchange rate. Therefore, the authors' results suggest that interest spreads are not a sufficient indicator to understand fluctuations in the foreign exchange value of the dollar. Instead, the U.S. Treasury basis paints a more complete picture as it also captures investors' perceptions about the available supply of safe, dollar-denominated assets. This interpretation is further reinforced by the lack of similar evidence for other currency bases like the euro and the Japanese yen.

The authors conclude that the special role of the dollar leads it to impart a good deal of influence over the global financial cycle. As the authors write, "The global financial cycle is in part a dollar cycle." For example, monetary policy actions initiated by the FOMC transmit through global financial markets by altering the expected supply or demand of safe assets. Lustig and Krishnamurthy provide evidence for this by showing that, even after controlling for the change in interest-rate differentials, U.S. monetary policy announcements affect the foreign exchange value of the dollar. The authors conclude that this evidence is consistent with FOMC policy announcements altering the expected or perceived supply of available safe assets. In light of this relationship, the authors' results suggest that spillovers from U.S. monetary policy are intrinsic to the mechanics of international credit and currency markets and, therefore, are unlikely to ebb so long as U.S. Treasuries remain the preferred safe asset of the world.

Wenxin Du, assistant professor of finance and Biehler Junior Faculty Fellow at the University of Chicago's Booth School of Business, discussed Lustig and Krishnamurthy's paper. She agreed with the authors' premise that there is a global dollar cycle that plays an important role in driving the broader global financial cycle. However, Du highlighted the important role that intermediary balance sheet capacity plays in driving this cycle, especially in the post-global financial crisis (GFC) period. Du began her discussion by showing that the U.S. Treasury basis can be decomposed into the sum of the London interbank offered rate basis, or LIBOR basis, and the Treasury swap spread. The former captures the specialness of generic dollar funding and the latter captures the specialness of Treasury debt. She shows that much of the variation in the Treasury basis is driven by changes in the Treasury swap spread in the pre-GFC period. However, in the more recent period, changes in the LIBOR basis explain nearly all of the variation in the Treasury basis. To interpret this finding, Du highlights that the LIBOR basis should be zero if banks did not face balance sheet constraints. Therefore, fluctuations in the balance sheet capacity of globally connected intermediaries appear to be increasingly important relative to the supply of available safe assets. Du's work highlights that post-GFC regulatory changes appear to have altered the role that the LIBOR basis plays in shaping the Treasury basis, the spillovers from U.S. monetary policy and the global dollar cycle more broadly.

### **Overview Panel**

The symposium concluded with an overview panel featuring Gita Gopinath, chief economist of the International Monetary Fund (IMF); Philip Lowe, governor of the Reserve Bank of Australia; and Amir Yaron, governor of the Bank of Israel. Each speaker offered their view on the shared and unique challenges confronting central banks. While each speaker brought a unique perspective, all speakers spoke of the need for clear central bank communication and transparency in an era when traditional monetary policy frameworks are being challenged on multiple fronts.

Gopinath shared insights into how the IMF is adapting its framework to better match the evolving financial and economic landscape.

She began by highlighting the multiple dimensions across which the pre-crisis monetary policy framework is being challenged. For instance, the pursuit of central bank mandates no longer is limited solely by price rigidity. Instead, global financial frictions also are limiting the achievement of central bank goals. Moreover, to deal with the complex range of issues they confront, Gopinath highlighted that many central banks already have turned toward the use of alternative policy tools, including capital controls, foreign-exchange market interventions and macroprudential policy in addition to traditional interest rate changes. In light of these evolving frictions and policy instruments, the IMF is working to develop an integrated policy framework that incorporates the role that country characteristics play in shaping the policy response to specific shocks. While work on this new framework is ongoing, the emerging conclusions suggest a much more nuanced view of how central banks should pursue their mandates in light of evolving challenges. Therefore, according to Gopinath, clear communication is key in safeguarding the efficacy and credibility of monetary policy in this changing environment.

Lowe crisply summarized the challenges facing central banks as threefold. First, he noted that “normal” levels of interest rates and unemployment appear to be moving ever lower in a globally competitive and interconnected world. Second, he observed that the expectations for central banks to deliver on their mandates is greater than ever despite the first challenge. For instance, he spoke of a common misperception that central banks can deliver economic prosperity. And, in conclusion, Lowe spoke again of the communication challenges facing central bankers. In particular, he argued that central banks are approaching communication from an overly technical perspective. Instead, he challenged central bankers to engage with the broader public by talking in stories that people can connect with rather than talking in number, coefficients and rules.

Yaron spoke of the challenges posed by monetary policy divergence from the perspective of a small open economy. He began his remarks by noting that monetary policy divergence presents an especially acute challenge for small open economies with trading partners across the major diverging blocks. For example, Israel trades primarily with the



United States and Europe. Therefore, he noted that the Fed's policy to gradually but persistently raise interest rates during the last three years, while the ECB retained, and even enhanced, its accommodative policy stance, posed a dilemma. Yaron offered the insight that small open economies may ultimately face little discretion, as markets may largely dictate the response. For example, countries with vulnerable financial positions, especially if they were exposed to dollar-denominated debt, risk capital outflows and depreciation without a commensurate rise in interest rates. In contrast, countries with stronger fundamentals are able to navigate global developments with greater autonomy. However, such flexibility creates the delicate matter of communicating the policy response during a period when policymakers must, in real time, assess whether economic developments are emanating from transitory divergence or structural economic changes. Yaron concluded that this situation highlights the difficulty of balancing data dependency with a clear policy rule and its communication, especially for small open economies who also have to take into account the policy rules of other central banks.

