# IMES DISCUSSION PAPER SERIES

**New Challenges for Monetary Policy**
**Summary of the 2025 BOJ-IMES Conference**

Wataru Hagio, Daisuke Ikeda, and Yojiro Ito

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# IMES

# New Challenges for Monetary Policy

# Summary of the 2025 BOJ-IMES Conference

**Wataru Hagio\*, Daisuke Ikeda\*\*, and Yojiro Ito\*\*\***

## I.  Introduction

The Institute for Monetary and Economic Studies (IMES) of the Bank of Japan (BOJ) held the 2025 BOJ-IMES Conference, entitled "New Challenges for Monetary Policy," on May 27–28, 2025.[1] This year marked the 30th edition from its start in 1983, and participants discussed a wide range of topics from the conduct of policy to economic analyses.

The conference began with the opening remarks delivered by Kazuo Ueda (BOJ). Next, Agustín Carstens (Bank for International Settlements: BIS) gave the Mayekawa Lecture on the importance of trust in public policy. Athanasios Orphanides (Massachusetts Institute of Technology) delivered a keynote speech on challenges for monetary policy and its communication. Also, John Williams (Federal Reserve Bank of New York) and Ryozo Himino (BOJ) had a fireside chat. In the paper presentation sessions, four papers were presented on the theoretical and empirical analyses of inflation and monetary policy, by Annette Vissing-Jorgensen (Federal Reserve Board), Christopher J. Erceg (International Monetary Fund: IMF), Yuriy Gorodnichenko (University of California, Berkeley), and Daisuke Ikeda (BOJ).

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[1]  See Appendix 1 for the program. See Appendix 2 for a list of participants; their affiliations are as of May 27–28, 2025.

The first policy panel discussion was moderated by Takeo Hoshi (The University of Tokyo) and the four panelists, Mário Centeno (Banco de Portugal), Andrew Hauser (Reserve Bank of Australia), Neel Kashkari (Federal Reserve Bank of Minneapolis), and M. Ayhan Kose (The World Bank Group), discussed monetary policy challenges in an uncertain economy. The second policy panel discussion was moderated by Christopher Waller (Federal Reserve Board), and the five panelists, Pierre-Olivier Gourinchas (IMF), Luc Laeven (European Central Bank: ECB), Clare Lombardelli (Bank of England: BOE), Eli M. Remolona, Jr. (Bangko Sentral ng Pilipinas), and Shinichi Uchida (BOJ), discussed monetary policy in a global economy.

## II.  Opening Remarks

**Ueda** shared some thoughts on challenges for monetary policy in Japan.[2] He explained developments in inflation rates, and said that since 2021 Japan had seen a surge in inflation after the euro area and the US. He continued that the inflation rate in Japan has recently picked up again, driven primarily by increases in food prices, most notably rice prices.

He mentioned that Japan's policy rate remained the lowest among the three economies. He then posed a question: Why has the Bank maintained such an accommodative stance, even after three years of inflation exceeding 2%? He said this was because underlying inflation, which excludes temporary factors, remained below 2%.

He continued that there was no perfect data series that capture underlying inflation, but that one variable the Bank closely monitors to assess underlying inflation was inflation expectations. He said that they now stood between 1.5-2.0% -- the highest in 30 years, though still below the 2% target. He noted that this was why the Bank is still maintaining an accommodative policy stance to re-anchor them at 2%.

He pointed out that communicating this policy stance has been difficult, due to the persistent gap between headline inflation, to which the public pays attention, and underlying inflation, to which central banks respond. He added that, while this divergence had always existed to some extent, its recent magnitude and persistence had been particularly problematic in Japan. He also said that this gap would likely remain a major focal point for many central banks as supply shocks became more frequent globally.

He concluded his remarks by hoping that the discussions at this conference about critical issues, such as the measurement of underlying inflation and inflation expectations, how to communicate policies, and managing monetary policy under frequent supply shocks, will offer valuable insights for the global central banking community.

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[2]  For details, see Ueda (2025).

## III. The Mayekawa Lecture: Trust and Macroeconomic Stability: a Virtuous Circle

**Carstens** delivered a lecture on the importance of trust in public policy, drawing on his experience of numerous economic and financial crises.[3] He first identified two key lessons learned from several crises. The first is that crises are costly and best avoided. The second is that economies and financial markets always evolve. He said that policies and frameworks that seem appropriate today would therefore ultimately need to change, perhaps very quickly.

He then emphasized the importance of trust. He said that trust refers to society's expectation that public authorities will act predictably in the pursuit of predefined objectives, and that they will succeed in their task. He explained that if the public trusts authorities' actions, they would incorporate those actions into their own behavior, and they would be more willing to accept measures that call for short-term costs but deliver long-term benefits. He emphasized that trust underpinned the effectiveness and legitimacy of policies.

He said that there was a positive feedback loop in the dynamics of trust. He explained that effective and legitimate policies made it easier for the authorities to achieve their objectives, thereby building trust and producing a virtuous circle. He warned that this dynamic could however also work in the other direction, and hence preserving credibility was a constant challenge.

He then stressed that trust in the various aspects of macroeconomic policy -- monetary, financial stability and fiscal -- was closely interrelated. He gave three specific examples: money, commercial bank money, and public debt.

First, he began with the most fundamental aspect of central banking: the nature of money. He said that the consequences of losing trust in money can be disastrous, ranging from high inflation to sharp exchange rate depreciations. He emphasized that such events also typically go hand in hand with financial instability, sharply lower economic growth, widespread job losses and soaring inequality.

Second, he explained that over time, institutional arrangements within a two-tiered monetary system had developed in such a way that society's trust in the legal tender issued by the central bank has extended to the deposit money handled by commercial banks. He argued that the mere existence of a two-tier monetary system was not enough, however, to guarantee trust, and that the banking system also had to remain solvent via banking regulation and supervision and deposit insurance. He noted that recent episodes of extreme instability had also highlighted the need for greater supervision and regulation of the non-bank sector.

Third, he argued that from a macro-financial point of view, it was important for public debt to be sustainable. He noted that defaults on public debt could also destabilize the whole

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[3]  For details, see Carstens (2025).

financial system and threaten monetary stability, since the central bank may be compelled to finance debt service with primary issuance, leading to fiscal dominance over monetary policy.

Finally, he emphasized that expecting policymakers to deploy extraordinary policies to every challenge would erode public trust and that building resilient and robust economies and financial systems would best make policies effective.

From the floor, **Orphanides** mentioned that the definition of trust included the idea that public authorities will act predictably, and that, nevertheless, discretion was often preferred to systematic policy in the real world. He then asked for advice on how to address this challenge. **Carstens** replied that monetary policy frameworks should provide a strong foundation for predictability, and that if central banks used discretion, they should provide detailed explanations and link their actions to the final objective. **Etsuro Shioji** (Chuo University) pointed out that, during the period of unconventional monetary policies, central banks purchased various assets, resulting in increased public pressure on central banks to play a greater role. He then asked how the public's excess expectations could be contained so that they return to normal. **Carstens** replied that, since the Global Financial Crisis (GFC), central banks had been perceived as the only game in town, and he pointed out that they had raised public expectations that monetary policy was a universal tool that could achieve many objectives without causing harm. He added that a little more prudence was needed to draw the line between what central banks could and could not do. **Gorodnichenko** asked how trust in central banks could be maintained amid mounting political pressure. **Carstens** replied that central banks may need to accept friction with the government to preserve their independence, which would reinforce their credibility. He added that central banks had to be mindful that a part of their job involves generating such friction at the right time. **Kazumasa Iwata** (Japan Center for Economic Research) asked about the implications of cryptocurrencies for the conduct of monetary policy. **Carstens** replied that cryptocurrencies would not fulfill the role of money in terms of its singleness and finality.

**Masaaki Kaizuka** (NEC Corporation) asked how trust in fiscal policy could be secured in Japan, while there are arguments that there should be independent fiscal institutions which provide fiscal scenarios and monitor fiscal situations, or there should be fiscal rules, as in the EU. **Carstens** replied that, as in the UK, some form of autonomous entity that could evaluate fiscal policies and make an unbiased assessment of their consequences could be appropriate. **Gourinchas** asked if it was useful for central banks to adopt a separation principle, by which different instruments were used to achieve different objectives, in face of a tension between price stability and financial stability. **Carstens** replied that the joint consideration of all policies, including fiscal policy, was important, especially in addressing crises. **Laeven** asked how central banks could focus on a medium-term perspective instead of a short-term one. **Carstens** replied that a medium-term vision should be articulated as part of central banks' communications. **Hauser** asked how central banks could protect themselves from the social

trend of declining trust. **Carstens** said that, over the last 20 or 30 years, it had been widely believed that monetary and fiscal policy are very effective in stabilizing and influencing economic growth, which turned out not to be the case. He added that central banks should exercise greater restraint in their proactive approach, particularly when pursuing non-price stability objectives.

## IV. Keynote Speech: Challenges for Monetary Policy and Its Communication

**Orphanides** discussed how the policy framework could be improved by incorporating simple policy rules.[4] First, he highlighted two interrelated challenges for monetary policy and its communication: the pretence of knowledge; and the proclivity for discretion.

He then discussed the desirable characteristics of simple rules. He said that simple rules are useful if they preserve price stability over time in line with a central bank's target, if they are somewhat countercyclical, and if they are more robust to imperfect knowledge. With regard to the inputs for simple rules, he mentioned that it was useful to incorporate forecasted variables, although using long-term forecasts could be counterproductive.

He showed an example of a "natural growth targeting rule." He explained that this rule requires central banks to respond to deviations in the nominal income growth rate in coming quarters from the normal growth rate, which is the sum of the target rate of inflation and the growth rate of real potential output. Using real-time data and projections for the US, he then demonstrated that the illustrative simple rule could broadly capture the evolution of the actual policy rate until 2019, but pointed to a significant discrepancy in 2021 and early 2022. He said that this was an example of how guidance from a rule would have helped the Federal Reserve (Fed) avoid keeping the policy rate too low for too long.

Finally, he concluded his speech by summarizing the main advantages of communicating a benchmark policy rule: a rule can build trust in central banks, protect against major policy mistakes, and promote systematic policy; a rule does not exclude discretionary action, when circumstances warrant, but places a premium on explaining discretion; publishing the policy rate calculated by a rule in real time provides guidance on the policy rate that is explicitly conditional on the evolution of the outlook, thereby improving the central bank's communication.

From the floor, **Peter Kažimír** (National Bank of Slovakia) asked whether policy rules should be reviewed periodically, or whether exceptions or escape clauses should be added, to ensure they remain relevant in the face of unpredictable events such as pandemics, energy crises, and wars. **Orphanides** replied that central banks could deviate from a simple rule in exceptional circumstances and that, in such cases, the fact that central banks had

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[4] For details, see Orphanides (2025).

communicated the rule makes it much easier for them to explain why they were deviating from the rule. He emphasized that benchmark policy rules should be examined at regular intervals and adapted as necessary. **Koji Nakamura** (BOJ) mentioned that economic data, such as GDP, were often revised, sometimes significantly, and asked how to address the issue of data revision when adopting simple policy rules for real-time policy judgements. **Orphanides** replied that simple policy rules should be designed to reduce the possibility of serious errors, for example, by incorporating variables that involve smaller degrees of real-time uncertainty.

**Daniel Rees** (BIS) said that, in the Summary of Economic Projections published by the Fed, there could be cases where the interest rate prescribed by a policy rule using projected variables such as inflation rates differed significantly from the projected interest rate. He asked how the right balance could be achieved between economic projections and the prescription of a policy rule. **Orphanides** replied that economic forecasts for the next few quarters fit a policy rule as its inputs, but policies should not be guided by forecasts longer than a 1-year horizon. **Kose** commented that, although the Fed had not followed the policy rules, the actual policy rates were similar to the rule-based rates, except for 2021-2022, which was a commendable result, considering the economic situation. He asked how policy rules should be designed in small open economies that are significantly affected by global shocks. **Orphanides** agreed that Fed's monetary policy had been reasonable most of the time, but the deviations in 2021-2022 were too large. He said that the fundamental principle of adjusting policy rates upwards when the inflation rate rose did not change, even when focusing on economies more influenced by global shocks. **Erceg** said central banks had been actively using balance sheet policies, such as quantitative easing (QE), and asked how to limit discretion with respect to such balance sheet policies. **Orphanides** replied that, while it would require further research, it would be possible to formulate balance sheet policy rules, and that there would be some advantages to taking a more systematic approach to balance sheet policies.

## V. Fireside Chat

**Himino** hosted the fireside chat and welcomed Williams as a guest speaker. He asked several questions, and in response, **Williams** first discussed monetary policy under high uncertainty. He pointed out that a policy that is optimal in one economic model might perform poorly in another model. He argued that in the face of high uncertainty, it was better not to try to find the optimal policy, but rather to think of an approach that will work well in multiple scenarios.

Next, he discussed inflation expectations. He argued that the fact that the inflation rate in the US had been low and stable for decades before the pandemic was influential in shaping inflation expectations. He noted that people's perceptions of inflation have changed over the

past five years and that the distribution of inflation expectations among generations that had experienced low inflation before had shifted upwards. He warned that inflation expectations could therefore shift in detrimental ways and well-anchored inflation expectations should not be taken for granted.

He turned to r-star and discussed how it could be affected by global factors. He said that AI could boost productivity growth and potentially increase r-star, while some other factors, such as changes in trade policy, could bring down r-star. He added that it was hard to predict which factors are more dominant.

Finally, he reflected on the heightened volatility of asset prices in April 2025. He noted that trade policy announcements had shocked the US markets, but there was no market dysfunction. He continued that it was different from March 2020, when there was a dash for cash, and that there were no issues in the repo or the uncollateralized call markets.

From the floor, **Carstens** stressed that the autonomy of central banks was crucial to counterbalancing a rise in uncertainty and added that institutional design was essential to ensuring this autonomy. **Williams** agreed with the comment and replied that many economies had independent central banks because they had been proven to work well in providing strong support for price stability. **Indrajit Roy** (Reserve Bank of India) asked whether exchange rate fluctuations should be taken into account in estimating r-star for emerging economies. **Williams** replied that factors such as exchange rates had to be given due consideration if the model was extended to emerging economies. **Gorodnichenko** asked how to deal with radical uncertainty, citing the examples of pandemic, wars, and the potential impact of AI on the labor market. **Williams** replied that a risk management approach continued to be useful even when faced with extreme uncertainty. **Orphanides** said that an independent central bank could promote price stability, thereby significantly reducing the risk premium on long-term government bonds. **Williams** agreed with the comment and replied that low and stable inflation rates would reduce the risk premium, particularly with regard to the inflation risk premium in long-term yields.

## VI. Paper Presentation Sessions

### 1. Reserve Demand, Interest Rate Control, and Quantitative Tightening

**Vissing-Jorgensen** developed a theoretical framework for reserve demand and supply, estimated reserve demand using US data, and discussed its implications for monetary policy.[5] She noted that, before the GFC, reserves had been scarce. After the GFC, reserve supply significantly expanded due to unconventional monetary policies such as QE, and that the Fed began paying interest on reserves (IOR). She raised three key questions: What is the role of

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[5] For details, see Lopez-Salido and Vissing-Jorgensen (2025).

reserve demand in interest rate control? What frameworks can limit interest rate volatility from shocks? How can reserve demand guide quantitative tightening (QT)?

To address these questions, she developed a theoretical model in which banks' demand for reserves is derived from a bank optimization problem, and reserve supply is determined by the Fed's securities holdings and its lending and investment facilities. She used this framework to understand both how the Fed controls the equilibrium interest rate on average and how this rate is influenced by shocks to reserve demand and reserve supply. Moreover, she derived empirical specifications from the theoretical model and estimated reserve demand for the US.

She presented three main findings. First, she explained that, on the demand side, the reserve demand curve was downward sloping because the convenience benefits of additional reserves decline for a given amount of liquid deposits, such as savings. She also said that the demand curve could shift in response to a change in banks' needs for liquidity, which arises mainly from liquid deposits on their liabilities. She explained that, on the supply side, the reserve supply curve consisted of a vertical part, where reserves equal net securities, defined as securities minus autonomous factors such as currency and government deposits, and a flat part, where reserves are reduced by facilities such as overnight reverse repurchase (ONRRP). She said that the equilibrium was determined by the intersection of the supply and demand curves. Second, she estimated the reserve demand function for the US since 2009, and found a stable relation once liquid deposit growth is accounted for. Third, she derived the IOR needed to achieve the target effective federal funds rate (EFFR) for a given balance sheet size. She noted that ending QT before a predicted EFFR-IOR spread of 4bps is reached may be preferable in order not to increase interest rate volatility. She also noted that the total of reserves plus ON RRP supply was $3.6 trillion in March 2025, and that, if it reached the $2.3 trillion level as a result of QT, reserves would be as tight as they were in September 2019, when money market rates spiked sharply.

As a discussant, **Hibiki Ichiue** (Keio University) made two comments. First, he pointed out the potential for omitted variables in the reserve demand estimation, highlighting that financial regulations, commitment lines, and uninsured deposits were not considered. Second, he noted that the EFFR-IOR spread remained stable between 2022 and 2024, and asked why this regime should not be maintained. He said that maintaining this regime requires large Fed holdings, and holding substantial amounts of long-term bonds potentially affects the term premium. On the other hand, he pointed out that, if large quantities of T-bills are available, holding T-bills might not be problematic and could be preferable to QT. Regarding the BOJ's operations, he said that reserves in Japan had been abundant as the call rates had remained below IOR. He also mentioned that this is the reason why the call rate had been stable even without a floor facility. Regarding omitted variables, **Vissing-Jorgensen** replied that she had considered various factors but had not found anything significant. She also noted that,

although adding variables would provide a little extra explanatory power, it would be better to keep things simple.

From the floor, **Tuomas Välimäki** (Bank of Finland) asked what had changed the most in the last 15-20 years regarding reserve management in the US. **Vissing-Jorgensen** replied that, before the GFC, the Fed had adjusted securities to maintain the vertical part of the reserve supply unchanged, taking into account forecasts for autonomous factors such as government deposits. She called this an "active securities" regime and contrasted it with the current "super passive securities" regime, where shifts in supply have minimal impact on call rates. **Andrea Gerali** (Bank of Italy) raised the issue of omitted variables in the reserve demand estimation and asked if incorporating banks' exposure to non-bank financial institutions (NBFIs) matters. **Vissing-Jorgensen** replied that it could affect reserve demand if the treasury basis trade conducted by NBFIs is financed by banks. **Gourinchas** said that bank deposits were used as an explanatory variable that affects reserve demand in the estimation, but asked if the endogeneity of bank deposits, especially the effect of reserve supply on bank deposits, matters. **Vissing-Jorgensen** replied that she decided not to instrument for bank deposits, as they were included to capture unobservable liquidity demand shocks. **Hauser** asked if differences in the operational framework of supplying reserves, for example between the US and the UK, are important for economic welfare. **Vissing-Jorgensen** replied that rate volatility was lower in the UK so that the differences mattered, but added that the choice of operational framework depended on other factors such as central bank profit risk. **Junko Koeda** (BOJ) asked how, in actual policymaking, central banks can deal with uncertainty arising from the estimation and forecasting of reserve demand. **Vissing-Jorgensen** replied that it was possible to deal with such uncertainty, for example, by using 90% confidence intervals of the estimation.

**Himino** asked if there had been any deviations from the estimated demand curve during periods of stress, such as the dash for cash in March 2020. **Vissing-Jorgensen** replied that while the reserve demand did increase significantly then, the Fed boosted the reserve supply, preventing a sharp rise in the EFFR. **Shigenori Shiratsuka** (Keio University) noted that the EFFR was currently lower than the IOR, causing financial institutions that are eligible to earn IOR to have no incentive to trade in the Fed funds market. **Vissing-Jorgensen** agreed, adding that the Government Sponsored Enterprises were the main lenders in the market and lent at rates below the IOR, as they were not eligible to earn IOR. **Tsutomu Watanabe** (Nowcast) asked if changing from a semi-log to a log-log specification would affect the results of the estimated reserve demand curve. He also said that some people argued that a large central bank balance sheet was associated with weak fiscal discipline, and asked whether fiscal discipline should be considered when determining the optimal balance sheet size. **Vissing-Jorgensen** explained that a semi-log specification was used because the EFFR-IOR spread is often negative. She also noted that fiscal authorities and a central bank have different objectives. Regarding Hauser's question, **Williams** commented that differences in economic

welfare arising from small variations in overnight rates would be small, and he added that different jurisdictions adopted different operational frameworks based on their broader objectives, including financial stability and functioning in the interbank lending market, other than interest rate controls.

## 2. Monetary Policy and Inflation Scares

**Erceg** developed a dynamic stochastic general equilibrium (DSGE) model to explain the post-COVID inflation surge and provided insights into the conduct of monetary policy in face of such shocks.[6] He said that inflation had been initially viewed as transient with minimal second-round effects, leading major central banks to largely "look through" the initial rise. He then posed two questions: What were the mechanisms underlying the recent high inflation episode? How should monetary policy be conducted in an economy with more frequent supply shocks that arise, for example, from heightened geopolitical risks and trade uncertainty?

To address these questions, he developed a DSGE model that features: agents' misperceptions about persistence of supply shocks, an inflation forecast-based Taylor rule, a nonlinear Phillips Curve, and endogenous price/wage indexation. He explained that price/wage indexation rose endogenously if inflation runs persistently above target.

He then presented key results. First, he explained that the transmission of cost shocks was state-dependent: cost shocks can have large, persistent effects on inflation when inflation is initially high, whereas they have only transient effects when inflation is near target. Second, he said that, under a forecast-based rule, cost shocks could temporarily raise output and cause a hump-shaped inflation response if misperceived as transient. He stressed that a standard linearized DSGE model could not reproduce these patterns, and that nonlinearities combined with misperceptions significantly changed the transmission of cost shocks. Regarding policy implications, he suggested that looking through supply shocks was generally reasonable when inflation was near target and the shocks were modest and likely transient. However, he added that such a policy turned problematic with large shocks, especially when persistence was uncertain or inflation had been above target. He also highlighted that when inflation was initially above the target, the probability distribution of inflation became skewed upward, making it more vulnerable to new adverse cost shocks.

As a discussant, **Jae Won Lee** (Bank of Korea) said that the main narrative was that inflation would surge if a large, persistent supply shock hit the economy alongside delayed monetary tightening. He added that indexation then kicked in, and that inflation became higher and more persistent due to the steep, nonlinear Phillips Curve. He then made several comments. First, he pointed out that backward-looking indexation was central to the paper's results. He then argued that the empirical evidence was mixed. Regarding wage indexation,

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[6] For details, see Erceg, Linde, and Trabandt (2024).

he said that some studies had shown it to be mostly forward-looking, and that formal wage indexation to inflation had become less prevalent in recent years. He also noted that, according to US studies, firms' wage posting was predominant, and that firms that post wages had little incentive to change them in response to a "pure" supply shock that raised workers' cost of living without affecting their productivity. As for price indexation, he mentioned UK studies indicating that mostly state-dependent pricing (SDP) firms increased the frequency of price changes in 2022. He added that SDP firms could explain the fast and large increase in inflation, but that their swift price adjustments could result in lower inflation persistence. In addition, he pointed out that big fiscal stimulus, coupled with central banks' misperceptions about inflationary impact of fiscal stimulus, could also have contributed to the post-pandemic inflation. He then asked how important the supply-side story was relative to the demand side. **Erceg** agreed with his comments and said that the backward-looking indexation parameter had been set below 0.5, which was lower than the estimated persistence in the 1970s. Nevertheless, he noted that the model produced a strong propagation of supply shocks. He added that, although the primary focus of the paper was supply shocks, demand shocks were also important for business cycles.

From the floor, **Ueda** said that the paper fitted well with Japan's experience, where supply shocks seemed to have had persistent effects on inflation. **Erceg** replied that this was a helpful observation for the paper. **Carstens** said that exchange rates often fed back into price formation mechanisms in an emerging market economy, and that it would be interesting to extend the model in this direction. **Erceg** replied that he would like to consider the risks posed by exchange rates and external shocks, which are important for emerging market economies, and added that exchange rate depreciation could have persistent effects on inflation, depending on the state of the economy. **Kose** asked which one of these was the most important for the main results: high inflation, an overheating economy, or persistent shocks. **Williams** said that there was plenty of evidence that prices and wages had adjusted much faster in the US during this period, and that the pass-through of wages to prices was much higher. He then asked which mechanisms were truly important and empirically relevant. **Erceg** replied that persistent shocks were an important element as transient shocks did not lead to the main results. He added that misperceptions about persistence of supply shocks were also crucial because there would be smaller effects if central banks raised rates early and rapidly.

**Gerali** asked about optimal policy in this specific environment. **Erceg** replied that studying optimal policy was for future work as his co-authors were currently working on this. **Jongrim Ha** (The World Bank Group) asked whether the timing of the policy tightening mattered in light of the nonlinear effects of monetary policy. **Erceg** replied that examining different timings of policy tightening would be interesting. **Ichiue** asked whether the endogenous indexation is related to higher attention to inflation during a high inflation regime.

**Erceg** replied that it was likely related to higher attention, but that it was an open question as to where the tipping point is and when the degree of indexation starts to rise non-linearly.

## 3. The Causal Effects of Inflation Uncertainty on Households' Beliefs and Actions

**Gorodnichenko** discussed the effects of inflation uncertainty on household decisions, such as consumption, portfolio choices, labor supply, and mortgages.[7] He emphasized the importance of studying inflation uncertainty but pointed out several challenges in estimating its causal effects. First, he said that inflation expectations were endogenous. He then pointed out that inflation uncertainty (second moment) was highly correlated with inflation levels (first moment), requiring variation in the second moment independent of the first. He also noted that surveys on inflation uncertainty were quite rare, and that, with decades of low and stable inflation before the recent surge in inflation in advanced economies, there had been limited historical variation in inflation uncertainty.

To address these challenges, he conducted a randomized control trial (RCT) using the ECB's Consumer Expectation Survey of September 2023, which was followed by regular monthly surveys until January 2024, to measure households' actual decisions. Households were randomly assigned to a control group and three treatment groups. Treatment group 1 received information on professional forecasters' inflation expectations (first moment); Treatment group 2 received information on the differences in forecasters' expectations (second moment); Treatment group 3 received both pieces of information.

He then presented four main results on the causal effects of higher inflation uncertainty. First, households reduce subsequent durable goods purchases for several months. Second, regarding households' portfolio decisions, households move their funds away from risky assets, such as stocks, and tilt toward safe assets, such as savings accounts. Third, with regard to labor supply, households search more actively for jobs. Fourth, households are more likely to choose a fixed rate mortgage over an adjustable-rate mortgage if they are purchasing a home.

As a discussant, **Taisuke Nakata** (The University of Tokyo) pointed out that monetary policy was often analyzed assuming "Certainty Equivalence (CE)" under which uncertainty does not affect economic agents' decisions. He argued that this assumption, though quite popular, was inconsistent with the evidence presented by the RCT. He discussed how the breakdown of CE changes the implications for monetary policy. He explained that, in an economy with supply shocks, a more aggressive monetary policy reaction created a classic trade-off under CE: lower inflation volatility at the cost of higher output volatility. He continued that, if CE does not hold, lower inflation volatility raises output, but higher output

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[7] For details, see Georgarakos *et al.* (2025).

volatility reduces output, creating a trade-off in the level of output. He argued that uncertainty therefore creates an additional layer of trade-off, which could complicate monetary policy analysis, in an economy with supply shocks. He added that supply shocks appeared to be important drivers of the economy, given the experience of the 2020s so far. **Gorodnichenko** replied that the general lesson from this and previous RCT experiments was that people have a strong aversion to macroeconomic volatility and prefer macroeconomic stability.

From the floor, **Kose** asked how important the source of the uncertainty is, whether it is a supply or demand shock, and suggested conducting an RCT to examine the effect of uncertainty in firms' inflation expectations on their decisions. **Erceg** inquired about a potential link between inflation uncertainty and supply shocks. **Gorodnichenko** replied that it was unclear whether people interpret uncertainty as a supply or demand shock, but based on some evidence, households tend to consider supply shocks as a driver of inflation. He added that in his study of firms in New Zealand, higher uncertainty led to less investment, suggesting people have an aversion to macroeconomic uncertainty. **Kosuke Aoki** (The University of Tokyo) asked which of the two interpretations is correct: that households change their behavior while taking the income process as given, or that they change their projections about income and income volatility. **Shioji** asked whether it is possible to estimate the impact of inflation uncertainty separately from the impact of real economic uncertainty. **Gorodnichenko** replied that, to address these questions, a large-scale RCT would be required that included treatment of GDP expectations and uncertainty. He added that there was no significant change in households' expectations about GDP in the RCT, so uncertainty in GDP was not the main channel for the observed effects.

**Ichiue** pointed out that, in a standard New Keynesian model, when inflation expectations increase, a central bank is expected to raise interest rates by more than one-to-one, adding downward pressure on the economy, which contradicts the RCT result that higher inflation expectations lead to a rise in the purchase of durable goods. **Gorodnichenko** said that there was much evidence suggesting that people do not fully understand the model's general equilibrium implications. **Gerali** suggested investigating the effect of multiple, mutually reinforcing information treatments over time. **Gorodnichenko** replied that multiple treatments were possible if budgets allow, noting that some firms in the Bank of Italy's survey were informed about past inflation, and these treatments had a persistent effect on inflation expectations. **Tsutomu Watanabe** said it would be interesting to examine the treatment effect of low-income respondents, who may not react if they have liquidity constraints. He also asked if the result came from changes in inflation expectations or in policy expectations. **Gorodnichenko** replied that the sample size was too small to detect differences among low-income respondents and noted that RCTs provided a very clean result in terms of estimating total effects, but they were not necessarily directly informative about underlying mechanisms. He offered his conjecture that, when inflation uncertainty goes up, households anticipate that

their nominal wages may not increase very much, which has a direct negative impact on their purchasing power and thus on purchases of durable goods.

## 4. Mind the Gap When Exiting Low-for-long

**Ikeda** discussed the consequences of low-for-long policy for agents' perceptions and the real economy, both theoretically and empirically.[8] He said that keeping interest rates low for long supported the economy in a low inflation regime. However, he continued that low-for-long policy might induce agents to believe in lower interest rates for longer than intended by central banks. He therefore argued that this gave rise to a gap between agents' beliefs about monetary policy and the actual monetary policy, the belief gap, and that, when interest rates were raised amid the belief gap, such policy changes could be perceived as surprise tightening. He emphasized that while policies could change quickly, agents' beliefs might not, generating volatility in the economy.

To investigate this potential channel of monetary policy, on the theoretical side, he built a simple New Keynesian model with three features: agents' learning about a monetary policy rule; the effective lower bound (ELB) of the interest rate; and forward guidance with imperfect credibility. He used the model to simulate low-for-long scenarios and studied the mechanisms underlying the evolution of a belief gap. On the empirical side, he estimated a perceived monetary policy rule based on professional forecast data from Japan.

He then presented three main findings. First, he said that low-for-long policy could lead to expansion before the exit of the policy, followed by contraction during the exit. Specifically, he explained that as a low interest rate environment was prolonged, agents came to believe that interest rates would remain lower for longer due to their perception that the nominal neutral rate $i^*$ in the monetary policy rule was lower. He continued that this belief stimulated the economy, but during the exit, this belief gap was corrected and perceived as monetary tightening, which caused economic contraction. Second, low credibility about forward guidance exacerbates this 'boom and bust.' Finally, he estimated perceived $i^*$ for Japan and reported that its properties were consistent with the model. In particular, he mentioned that the empirical perceived $i^*$ responded to a monetary policy surprise positively, which cannot occur in the model without learning. He argued that this belief gap channel could therefore be relevant in practice.

As a discussant, **Spencer Krane** (Federal Reserve Bank of Chicago) first noted that make-up type policies generally worked well in a setting with full-information and rational expectations. However, he emphasized that the real world was far from that setting, and agents had to learn new policies. He added that the real message from this model was that policy efficacy would be enhanced when markets and the public understood the policy and when

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[8] For details, see Hagio *et al.* (2025).

they saw it as being credible. He continued that, under the ELB, no short-term policy rate movements were observed, complicating the learning process. He then made two comments. First, he said that it would be interesting to add a time-varying $i^*$ term (which could differ from agents' perceptions of $i^*$) to the central bank's reaction function. Second, he noted that the credibility of forward guidance was exogenous in the model, but it might vary endogenously and thus influence the efficacy of forward guidance. **Ikeda** agreed with the comments while responding that the $i^*$ term was constant and actually zero in the central bank's reaction function. He continued that the degree of the credibility about forward guidance could be endogenized, but as long as there was an upper limit to the credibility, the main results would continue to hold.

From the floor, **Williams** asked whether introducing a new strategy such as a price-level targeting rule could address the formation of a belief gap. **Ikeda** replied that previous studies indicated slow learning under the ELB, and that a belief gap would probably emerge even with a change to the price-level targeting rule. **Mototsugu Shintani** (The University of Tokyo) asked which factor, imperfect credibility or cognitive discounting, was more important for addressing the so-called forward guidance puzzle, and whether it would be possible to identify and estimate parameters that govern these factors. **Ikeda** replied that imperfect credibility was more important, and that estimating such parameters from data would be difficult. **Orphanides** asked whether reformulating the policy from an overnight rate to a longer-term interest rate would improve the learning in the model. **Ikeda** replied that it was possible to introduce a long-term interest rate rule, but switching from one rule to another would be challenging for households and firms to learn in practice. **Roy** asked how COVID-19 related data were treated in the empirical analysis. **Ikeda** replied the data during the pandemic were treated in the same way as the data outside the pandemic period. **Gorodnichenko** said that credibility about forward guidance was likely to be low in practice by citing his paper on RCTs, which reports that providing forward guidance for more than a year had no impact on people's beliefs and choices. **Ikeda** replied that the model's calibration could be enhanced by using the RCT evidence on the credibility of forward guidance.

**Gerali** asked whether relaxing the simplifying assumption of learning would affect the main results. **Ikeda** replied that doing so would be computationally challenging, but it might be worth exploring. **Iwata** asked whether forward guidance in Japan could have widened the belief gap. He also pointed out that the estimated recent perceived $i^*$ was lower than the actual policy rate of 0.5%, and asked whether this implied tight financial conditions. **Ikeda** replied that there might be a belief gap if agents have imperfect beliefs about the central bank's announcement, and that the empirical results alone could not determine whether 0.5% was tight or loose. **Shioji** asked which was more important, the public's perception of the actual r-star, or central banks' perception of it. He also asked whether the model could be extended to include financial frictions. **Ikeda** replied that the combination of r-star and long-term inflation

expectations in the monetary policy rule was important in the model, and incorporating central banks' perceptions was beyond the scope of the paper. **Shiratsuka** asked how the model treated long-term inflation expectations. **Ikeda** replied that in the model, long-term inflation expectations were anchored at the target rate of 2%. **Erceg** shared that, in 2015, the Tealbook suggested that there was a modest gap between market expectations and the Fed's internal projections at the time of liftoff.[9] **Ikeda** expressed his appreciation for the useful information.

## VII. Policy Panel Discussion 1

In the Policy Panel Discussion 1, moderated by Hoshi, four panelists, Centeno, Hauser, Kashkari, and Kose, discussed monetary policy challenges in an uncertain economy.

### A. Remarks by Moderator and Panelists

**Hoshi** began by noting that uncertainty surrounding the global economy has always been a close and constant presence, regardless of the era. He then noted that in recent years, uncertainty had had a considerable impact on monetary policy through its effects on price fluctuations. He framed the session as an opportunity to consider how the uncertainty we face today differs from that of the past, and how policymakers should conduct monetary policy in light of these developments. With that, he invited the panelists to share their views.

**Centeno** began by stating that it is desirable for central banks to make monetary policy decisions based on a simple and consistent framework. At the same time, he noted that when uncertainty surrounding the global economy was high, flexibility was also required—such as updating decisions at each meeting based on the latest information. He cautioned that if policymakers placed too much emphasis on economic uncertainty in their communication, they risked fueling it and being seen as neglecting their responsibilities. Against this backdrop, he pointed to the increasing importance of careful communication with markets. In particular, given the influence of monetary policy signals on consumption and investment decisions, he stressed the critical need to explain both the reasoning behind each policy decision and the degree of confidence policymakers hold in their judgment. He added that sound policy decisions also depended on high-quality data, rich economic knowledge, and preparedness for unexpected developments. In this regard, he emphasized the importance of acquiring new data and conducting analysis from diverse perspectives.

**Hauser** began by stating that economic uncertainty influences various stages of the conduct of monetary policy, including information collection, forecasting, policy decision-making, and communicating. He said that understanding the relationship between uncertainty and policy decisions was critical for communication. He emphasized that, on that basis, it was

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[9] The Tealbook is produced before each meeting of the Federal Open Market Committee.

important to examine the effects of economic uncertainty on monetary policy in a structured and sequential manner. He noted that while our understanding of how uncertainty affects forecasts had become more refined, uncertainty surrounding supply-side factors—such as global supply chains—had remained poorly understood. Regarding communication, he pointed out that the more frequently policymakers use the term "uncertainty," the harder it becomes for the general public to interpret their intentions, and he therefore stressed the importance of conveying messages in a clear and accessible manner.

**Kashkari** reflected on major shocks that have significantly affected the global economy over the past two decades and discussed the lessons learned from those experiences.[10] He began by noting that during periods of major shocks, uncertainty tends to rise both with regard to their effects and with regard to the appropriate course of monetary policy. He emphasized that policymakers had to continue to strengthen their capacity both to analyze the effects of shocks and to make well-reasoned policy judgments. He then argued that in situations where the appropriate policy response was unclear, cautious decision-making could be justified—even if, in hindsight, such a response might appear to have been somewhat delayed. Furthermore, he warned that relying on simple monetary policy rules without taking into account the nature of the shock might result in misguided responses. For this reason, he stressed the importance of maintaining flexibility in policymaking and of basing decisions on the latest available information, rather than depending solely on rigid policy rules.

**Kose** discussed lessons learned for monetary policy under the conditions of heightened economic uncertainty, referring to studies that analyzed previous episodes of policy rate hikes. He began by noting that the recent tightening phase can be seen as a success, in that it lowered inflation without causing a notable deterioration in unemployment rates. However, he pointed out that the delayed start of rate hikes, followed by rapid increases, had had negative effects both on economies and on financial systems. Specifically, he explained that the delays in initiating rate hikes allowed overall price levels to rise significantly, while the abrupt increases in policy rates had heightened risks to the stability of financial systems. He went on to observe that people tended to respond sensitively to changes in the price level, and that a substantial rise in the price level could undermine the anchoring of inflation expectations. Finally, he concluded his remarks by emphasizing that it is essential for policymakers to consider not just inflation rates but also price levels, act pre-emptively to secure financial stability, and maintain the anchoring of inflation expectations through communication with market participants.

## B. Discussion between the Moderator, Panelists and Floor Participants

**Hoshi**, referring to the panelists' remarks, asked about the role of data and information in the conduct of monetary policy under heightened economic uncertainty. He also invited views on

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[10] For details, see Kashkari (2025).

how policymakers should address the uncertainty that remains even when abundant data and information are available.

Centeno pointed out that current economic models might not function effectively in situations where the economic structure changed rapidly due to large shocks, such as geopolitical risks. He emphasized that in such cases, it was crucial to monitor changes in the economic situation from multiple perspectives without delay and argued that policymakers should make efforts to collect high-frequency micro-level data in a timely manner. Kashkari referred to the case of COVID-19 vaccines, which were developed much more quickly than many medical experts had initially expected. He stated that it would be difficult to clearly identify what kind of data was necessary at the initial stage of new developments. He added that the same would apply to current trade tariffs, arguing that it was extremely difficult at this point to specify what data or information would help reduce the uncertainty surrounding them. Kose noted that it was valuable for policymakers to have access to a wide range of data and information, but he emphasized the importance of building expertise in how to use such data and information effectively for monetary policy decisions. He pointed to the possibility that comparing recent data movements with those during past shocks could provide useful insights into the timing of policy responses. Hauser agreed that data was useful for policy decisions but cautioned that detailed analysis of large volumes of data did not necessarily lead to good judgment. He argued that policymakers had to think deeply and engage in careful communication with markets and warned that taking too much time for analysis might make it difficult to reach timely decisions. Drawing on his experience at the BOE, he stressed that while preparing action plans in advance to deal with unforeseen developments under high uncertainty was important, it was even more important for policymakers to secure sufficient time and respond flexibly, with thoughtful consideration of the underlying context.

From the floor, Williams asked if presenting and elaborating on multiple scenarios regarding inflation outlooks helps inflation expectations become anchored, facilitating consumption and investment decisions by households and firms. Kashkari argued that presenting multiple scenarios was useful in helping market participants and central bank professionals understand the reasoning behind monetary policy decisions, but added that for the broader public, a simple message was likely to be more effective. Centeno explained that the ECB did not normally present multiple scenarios, but there had been an exception in early 2022 when the ECB used a scenario assuming a prolonged war following Russia's invasion of Ukraine. He stated that this scenario had helped clearly communicate the possibility that the economic and inflation outlook could deviate substantially from the baseline. Hauser said that conducting scenario analysis and using the results as a basis for discussion within the policy committee was useful in enabling flexible policy responses during times of shock. However, he expressed the view that even if multiple scenarios were presented to explain economic uncertainty to non-experts, such efforts were unlikely to change people's behavior.

**Kose** stated that central banks had to provide some form of information, not necessarily as scenarios, and argued that when it was difficult to communicate clearly using simple language, presenting scenarios could help market participants and others understand their thinking.

**Nakamura** commented on the use of scenario analysis by central banks and international institutions as a means of communicating uncertainty. He noted that while he found such analysis to be highly useful for internal discussions within institutions, non-experts tended to focus almost entirely on the main scenario, which made it difficult to use scenario analysis effectively as a tool for external communication. He then asked how scenario analysis could be used more effectively as a means of communication with non-experts. **Centeno** said that scenario analysis could be used to clarify uncertainty and communicate what one could expect if things go a different way. **Hauser** argued that unless each scenario was accompanied by a clear explanation of the corresponding policy response that would be taken if that scenario were to materialize, it would not be useful to the general public. **Waller** commented as he has previously that in situations where multiple scenarios were considered equally probable, people would be highly interested in how policymakers would respond under each of those scenarios, so that communicating such cases would not be particularly difficult.

**Orphanides** commented that if cautious policymaking under uncertainty means holding the policy rate steady despite fluctuations in the inflation rate, it should not be considered inaction, but rather a deliberate policy decision. **Centeno** also stressed that a "do nothing" response constitutes a clear policy judgment. **Kose** similarly stated that refraining from action should be regarded as a policy decision. He went on to argue that even when a cautious approach was maintained, it was important for policymakers to communicate their thinking, particularly regarding the possible timing of future policy shifts. **Waller** commented as he has previously that it was important to clearly communicate that a cautious approach is not mere inaction, but rather a deliberate effort to avoid risks such as accelerating inflation or rising unemployment.

**Erceg** raised a question regarding the need for central banks to strengthen efforts toward regulating non-bank financial institutions, citing the recent liquidity crisis faced by UK pension funds that employed liability-driven investment strategies. **Hauser**, reflecting on his experience in addressing the liquidity crisis, noted that it was not possible to have a perfect response for every unexpected event. He emphasized that what matters most was the ability to make flexible decisions in real time.

**Gourinchas** agreed with Kashkari and voiced concern about policymakers relying on simple monetary policy rules that do not take into account the nature of shocks. He argued that, particularly in recent inflationary episodes—such as during the COVID-19 shock, which differed from previous ones—it was more desirable for policymakers to proceed with caution rather than follow such rules. **Centeno** also contended that monetary policy decisions could not be made appropriately without understanding the nature of shocks. He noted that, for

example, in the recent inflationary phase, it was essential to incorporate the impact of government fiscal support measures when making policy decisions. **Kose** emphasized the importance of fundamental research for understanding the nature of shocks. He pointed out that recent analyses had revealed that the effects of supply shocks tend to be more persistent than previously recognized and suggested that this could warrant earlier policy responses than in the past. **Kashkari** emphasized the importance of medium- to long-term real interest rates in assessing the impact on economic activity, and he noted that policymakers were expected to observe developments carefully over a longer horizon, rather than relying too heavily on day-to-day market movements.

## VIII. Policy Panel Discussion 2

In the Policy Panel Discussion 2, moderated by Waller, five panelists, Gourinchas, Laeven, Lombardelli, Remolona, and Uchida, discussed monetary policy in a global economy.

### A. Remarks by Panelists

**Gourinchas** first pointed out the recent global trend of declining goods price inflation, noting that attention should be focused on whether the low inflation can be maintained given the on-going trade issues among various countries. Next, he expressed concerns about incentives for policy authorities to keep interest rates low, such as reducing fiscal burdens or ensuring financial stability, given high levels of government debt in various countries. He emphasized that under such circumstances, it was extremely important for policy authorities to maintain anchored inflation expectations, carefully evaluate a trade-off between price stability and financial stability, and preserve central bank independence. Finally, he mentioned the importance of capital flows and exchange rate movements in understanding the global economy, noting that while no significant outflows from dollar positions were currently observed, hedging demand had increased and careful monitoring continued to be warranted.

    **Laeven** first stated that globalization had greatly contributed to economic growth and inflation control through various channels over the years. He then pointed out that while a broad reversal of globalization was not currently observed, uncertainty surrounding trade tariffs was creating major demand shocks to the global economy. Next, he mentioned the possibility that increased uncertainty in the global economy could increase dollar funding costs through an increase in risk premiums and could reduce investment globally, noting that policy authorities were becoming increasingly vigilant in monitoring the stability of the financial system. In this context, he argued that it would be important to consider policy responses in the euro area, taking into account the possibility that the landscape of the global financial system, including potential policy measures taken by other jurisdictions in times of stress, may not be the same as before.

**Lombardelli** stated that globalization had contributed to raising economic growth through productivity improvements over the past several decades, but she pointed out that it had become difficult to forecast the direction of globalization given recent developments in geopolitical risks and trade tariffs. Regarding the UK economy, she mentioned that while the impact of current tariffs was likely to remain relatively small since UK exports were service-centered, it could become larger than expected if supply chains were constrained. She also noted that the degree of such impact could vary significantly depending on the degree to which large exporters such as China shifted their export from the US to other countries, adding that she was paying close attention to each country's responses. Finally, she argued that past UK experience suggested that prolonged uncertainty would have a negative impact on economic activity, such as suppressed investment, emphasizing that uncertainty was currently high, particularly regarding the impact of geopolitical risks and tariffs.

**Remolona** discussed the important role of exchange rates while focusing on economic and price developments in emerging economies. First, referring to research that analyzes inflation around the world, he stated that in emerging economies, exchange rates had a larger impact on inflation than commodity prices. He then explained that while the depreciation of domestic currency contributed to an increase in inflation rates and inflation expectations, its appreciation had little impact. Next, citing the characteristics of the Philippines, such as a larger foreign exchange market compared to equity and bond markets, and the substantial amount of remittances from overseas workers, he pointed out that the impact of foreign exchange rates on inflation was extremely large in the Philippines. Finally, based on these points, he argued that when exchange rates continued to depreciate over a long period, inflation rates and inflation expectations would rise significantly, so foreign exchange intervention could be considered as a policy tool in such cases.

**Uchida** stated that inflation rates in various countries had generally declined under globalization since the early 2000s, and he pointed out that while it was difficult to clearly forecast the direction of globalization at present, if the trend of globalization were to stagnate, inflationary pressures would likely strengthen. Next, reflecting on Japan's situation, he explained that Japan had been more strongly affected by global factors, such as continued increases in foreign direct investment even after the GFC, in contrast to other major economies. He argued that various unconventional monetary policies had been implemented to address deflationary pressures exerted partly by such global factors. He argued that while monetary policy could theoretically offset the effects of global factors, in practice it was difficult to correctly evaluate the magnitude and persistence of the effects, such as those of the effects of supply chain constraints. Finally, referring to the introduction of unconventional monetary policies globally after the GFC, he pointed out their international spillover effects and expressed hope that the advantages and disadvantages of unconventional monetary policies,

from the view point of open economies as well as the home economy that initiates such policies, would be widely discussed.

## B. Discussion between the Moderator, Panelists and Floor Participants

**Waller** reflected on Laeven's comment that uncertainty surrounding tariffs was creating demand shocks to the global economy, noting that some market participants viewed tariffs as supply shocks, and asked panelists how tariffs should be characterized. **Gourinchas** responded that tariff policies implemented by the US would generate negative supply shocks for the US and negative demand shocks for other countries. He added that tariff increases could also yield negative supply shocks for other countries if they affected supply chains. Regarding the uncertainty about tariff policies mentioned by Laeven, he said that this would act as a negative demand shock for all countries including the US. **Laeven** agreed with Gourinchas' views and said that the impact of tariff shocks depended on countermeasures, if any, in response to tariff policies. **Uchida** also agreed with Gourinchas' views and stated that various tariff policies would put downward pressure on economic growth in all countries, including the US. He also said that their effect on inflation would be inflationary in the US, but mixed in other countries, as they would basically put downward pressure on inflation while they might cause supply chain disruptions and increase inflation. **Remolona** stated that the impact of tariff increases would be mitigated if supply chains were optimally reconstructed. **Lombardelli** also agreed with Gourinchas' views and stated that US tariff policies were unlikely to create inflationary pressures in countries other than the US in the short term and would not significantly hinder the conduct of monetary policy. However, she pointed out that from a longer perspective, reversing globalization could potentially push down economic growth and advance inflation.

 **Waller** then asked panelists about the impact on the global economy of the recent increase in goods exports from China to countries other than the US. **Lombardelli** responded that Europe was substituting for US-bound exports, and while this would be a factor for price declines in the short term, it was difficult to evaluate the impact on prices from a longer perspective. **Gourinchas** pointed out that China's export volumes depended heavily on tariff rates. Specifically, he explained that in scenarios where very high tariff rates are imposed only on China, China's export volumes would increase overall as exports to Europe and Asia increased, while in scenarios where high tariff rates are imposed on all countries, China's export volumes would not change much. **Laeven** stated that an increase in exports from China to Europe would lower prices in Europe, and depending on European governments' responses, such downward price pressures could become larger. **Uchida** pointed out the importance of China regarding supply chains and rare metals and argued that it would be difficult for many countries to switch completely from imports from China to imports from other countries.

Next, **Waller** noted that the view that reversing globalization would lower productivity was not necessarily confirmed, as it was unclear whether globalization's progress had improved productivity, and he asked for opinions on the relationship between globalization and productivity. **Lombardelli** stated that a positive relationship could be observed between goods trade and productivity in manufacturing sectors in the long term, while she noted that the share of service sectors had increased, so that the overall effect of globalization on productivity was difficult to measure. **Laeven** stated the need to understand the impact of AI technology on productivity, and he added that one of the priorities for research at the ECB was technology and productivity. **Remolona** mentioned that productivity had been improving in service sectors such as back-office operations, which had been off-shored from developed economies to Asia in recent years, and stated that he was paying attention to whether AI technology would further raise service industry productivity. **Gourinchas** agreed with Remolona's view that service industries would likely drive future productivity growth. He pointed out that geoeconomic fragmentation would push down productivity but said that trade volumes had not changed significantly so far and the global economy had maintained resilience. **Uchida** pointed out that if global capital were to flow out of the US due to the reversal of globalization, it would have a major negative impact on global economic growth, and he argued that it was important for stable global economic growth not to hinder the flow of global capital.

From the floor, **Koeda** asked to what extent central banks should focus on slow-moving indicators such as long-term inflation expectations in situations of high global economic uncertainty. **Lombardelli** answered that the BOE was considering utilizing scenarios in monetary policy decisions. **Laeven** said that the ECB conducted monetary policy based on medium-term perspectives, and that views were divided over whether to focus on somewhat shorter inflation expectations or utilize scenario analysis as needed.

**Masazumi Wakatabe** (Waseda University) asked whether central banks had sufficient policy tools to address the next crisis. **Laeven** responded that unconventional monetary policies that had been employed so far would function well as policy tools. **Gourinchas** stated that, regarding crisis policy responses, given the current situation of expanded government debt, there might be less room for fiscal policy rather than monetary policy. **Uchida** shared the view that central banks would be able to devise some policy tools as long as the effects of a crisis were limited to their domestic economies, but close cooperation among central banks would be required in addressing global crises.

**Siang Meng Tan** (Monetary Authority of Singapore) asked about the role of fiscal policies in mitigating the effects of tariffs. **Gourinchas** said that if the effects became large, a certain degree of fiscal support would be unavoidable. Referring to the recent fiscal support as countermeasures against energy price increases, he pointed out that once fiscal support measures were introduced, it became difficult to remove them, so that it was important to

carefully construct policy frameworks. **Uchida** said that while fiscal policy could be an option in responding to demand shortages, it was not clear whether it could be used to address other issues, which called for broad discussions of fiscal policy.

**Roy** mentioned that core inflation among countries was linked, as shown in Uchida's presentation, and cited trade openness, commodity price movements, and monetary policy coordination as factors that could affect core inflation movements among countries, asking which factors are important. **Uchida** agreed that all the factors pointed out by Roy could affect inflation and said that the impact of fiscal policy could not be ignored.

**Kose** asked panelists about the idea of providing target ranges to inflation instead of a single target rate, and about the idea of placing emphasis on core inflation rather than headline inflation. **Lombardelli** responded that if central banks changed their inflation targets, it could make people believe that achieving targets was difficult, and it would be particularly undesirable to change inflation targets at the current time, when inflation was above the target. She also mentioned that central banks should place more emphasis on headline inflation since people were highly interested in the prices they actually faced. **Laeven** pointed out that headline inflation was easier for people to understand and had greater merits for central bank communication.

**Gorodnichenko** asked about room for cooperation among central banks to address global challenges. **Gourinchas** pointed out that many central banks had raised policy rates during the recent inflation period, and that when central banks faced the same shocks in this way, they could cooperate even without pre-arrangements. However, he said that it was not clear whether central banks could cooperate when countries faced different challenges. **Lombardelli** agreed with Gourinchas' views while arguing that there were issues requiring international cooperation, such as climate change and geopolitical problems, which were not necessarily those that should be directly addressed by central banks. **Uchida** replied that central banks could only supply their own currencies, and when foreign currencies including the US dollar were affected, close cooperation among central banks was required. **Laeven** argued that the involvement of key central banks, including the Fed, would be essential for central bank cooperation to function effectively.

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# APPENDIX 1: PROGRAM

**Opening Remarks**

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|---|---|
| Speaker: | **Kazuo Ueda**, Bank of Japan |

**Mayekawa Lecture: Trust and Macroeconomic Stability: a Virtuous Circle**

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|---|---|
| Chairperson: | **Seiichi Shimizu**, Bank of Japan |
| Lecturer: | **Agustín Carstens**, Bank for International Settlements |

**Session 1: Reserve Demand, Interest Rate Control, and Quantitative Tightening**

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|---|---|
| Chairperson: | **Tuomas Välimäki**, Bank of Finland |
| Paper Presenter: | **Annette Vissing-Jorgensen**, Federal Reserve Board |
| Discussant: | **Hibiki Ichiue**, Keio University |

**Keynote Speech: Challenges for Monetary Policy and Its Communication**

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|---|---|
| Chairperson: | **Peter Kažimír**, National Bank of Slovakia |
| Speaker: | **Athanasios Orphanides**, Massachusetts Institute of Technology |

**Session 2: Monetary Policy and Inflation Scares**

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|---|---|
| Chairperson: | **Anna Breman**, The Riksbank |
| Paper Presenter: | **Christopher J. Erceg**, International Monetary Fund |
| Discussant: | **Jae Won Lee**, Bank of Korea |

**Session 3: The Causal Effects of Inflation Uncertainty on Households' Beliefs and Actions**

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|---|---|
| Chairperson: | **Rosmarie Schlup**, Swiss National Bank |
| Paper Presenter: | **Yuriy Gorodnichenko**, University of California, Berkeley |
| Discussant: | **Taisuke Nakata**, The University of Tokyo |

**Policy Panel Discussion 1: Monetary Policy Challenges in an Uncertain Economy**

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|---|---|
| Moderator: | **Takeo Hoshi**, The University of Tokyo |
| Panelists: | **Mário Centeno**, Banco de Portugal<br>**Andrew Hauser**, Reserve Bank of Australia<br>**Neel Kashkari**, Federal Reserve Bank of Minneapolis<br>**M. Ayhan Kose**, The World Bank Group |

## Wednesday, May 28, 2025

**Fireside Chat**

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|---|---|
| Moderator: | **Ryozo Himino**, Bank of Japan |
| Guest Speaker: | **John Williams**, Federal Reserve Bank of New York |

**Session 4: Mind the Gap When Exiting Low-for-Long**

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|---|---|
| Chairperson: | **Stephen Murchison**, Bank of Canada |
| Paper Presenter: | **Daisuke Ikeda**, Bank of Japan |
| Discussant: | **Spencer Krane**, Federal Reserve Bank of Chicago |

**Policy Panel Discussion 2: Monetary Policy in a Global Economy**

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|---|---|
| Moderator: | **Christopher Waller**, Federal Reserve Board |
| Panelists: | **Pierre-Olivier Gourinchas**, International Monetary Fund<br>**Luc Laeven**, European Central Bank<br>**Clare Lombardelli**, Bank of England<br>**Eli M. Remolona, Jr.**, Bangko Sentral ng Pilipinas<br>**Shinichi Uchida**, Bank of Japan |

# APPENDIX 2: LIST OF PARTICIPANTS

| | |
|---|---|
| **Kosuke Aoki** | The University of Tokyo |
| **Anna Breman** | The Riksbank |
| **Agustín Carstens** | Bank for International Settlements |
| **Mário Centeno** | Banco de Portugal |
| **Michael Cheng** | Hong Kong Monetary Authority |
| **Christopher J. Erceg** | International Monetary Fund |
| **Coletta Frenzel Baudisch** | Deutsche Bundesbank |
| **Takuji Fueki** | Hitotsubashi University |
| **Rhio D. Fuentes- Nuylan** | Bangko Sentral ng Pilipinas |
| **Hiroshi Fujiki** | Chuo University |
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| **Jongrim Ha** | The World Bank Group |
| **Keiko Harimoto** | Bank of Japan |
| **Andrew Hauser** | Reserve Bank of Australia |
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| **Ryozo Himino** | Bank of Japan |
| **Johannes Hoffmann** | Deutsche Bundesbank |
| **Michal Horváth** | National Bank of Slovakia |
| **Takeo Hoshi** | The University of Tokyo |
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| **Hibiki Ichiue** | Keio University |
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| **Jae Won Lee** | Bank of Korea |
| **Clare Lombardelli** | Bank of England |
| **Ahmad Othman A. Mohd Ripin** | Central Bank of Malaysia |
| **Kazuo Momma** | Mizuho Research & Technologies |
| **Stephen Murchison** | Bank of Canada |
| **Junko Nakagawa** | Bank of Japan |
| **Koji Nakamura** | Bank of Japan |
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| **Yoshiyuki Nakazono** | Yokohama City University |
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