



FINANCE AND DEVELOPMENT

MARCH 2023

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New Directions for Monetary Policy



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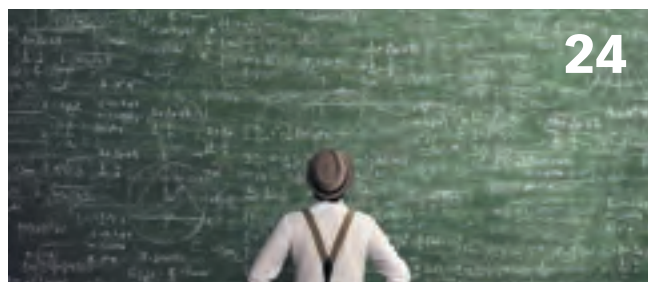
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New Worries for Central Bankers

"THE JOB OF THE central bank is to worry." That's how Alice Rivlin, vice chair of the Federal Reserve Board in the 1990s, described the work of monetary policymakers. Back

then, central bankers had one main concern: to keep inflation in check. Now, inflation is one of several worries facing central banks. A rapidly changing economic backdrop leaves less maneuvering room for policy, while structural forces—geopolitical fragmentation, climate change, an aging workforce, and the advent of digital money—have greatly complicated the underlying policy challenge. Central bank mandates and even their independence are under increasing political pressure. These new forces and others raise questions about how monetary policy may have to change going forward.

In this issue, distinguished contributors offer insights on how central bankers can navigate an increasingly complex world.

The IMF's Gita Gopinath details how economists need improved tools after existing models missed the recent inflation surge. Markus Brunnermeier argues that, in a post-pandemic world with higher inflation, lower growth, and more debt, central banks are still pursuing policies modeled for the days of tepid inflation, low interest rates, and robust growth.

How, then, should central bank frameworks and mandates change? Less is more, says Raghuram Rajan. He explains why central banks should refocus on their primary role, price stability, while respecting financial stability. For Giancarlo Corsetti, exceptional circumstances such as the pandemic may call for monetary and fiscal authorities to work together—but only temporarily and never at the cost of their independence.

David G. Blanchflower and Andrew T. Levin suggest ways central bankers can avoid the temptation of groupthink, which can threaten their credibility. Greg Kaplan and coauthors show how new models help us understand monetary policy's influence on income and wealth distribution. And Michael Weber describes how better monetary policy communications can shape expectations.

Economics as a discipline is evolving in a highly uncertain era—one that demands reflection on models, customs, and assumptions. I hope this issue helps spark further debate. **FD**

GITA BHATT, editor-in-chief



ON THE COVER

As the era of low inflation and low interest rates comes to an end, central banks are in the spotlight as the world awaits their next moves. Illustrator Pete Reynolds' March 2023 cover depicts the world's key monetary institutions awash in data.



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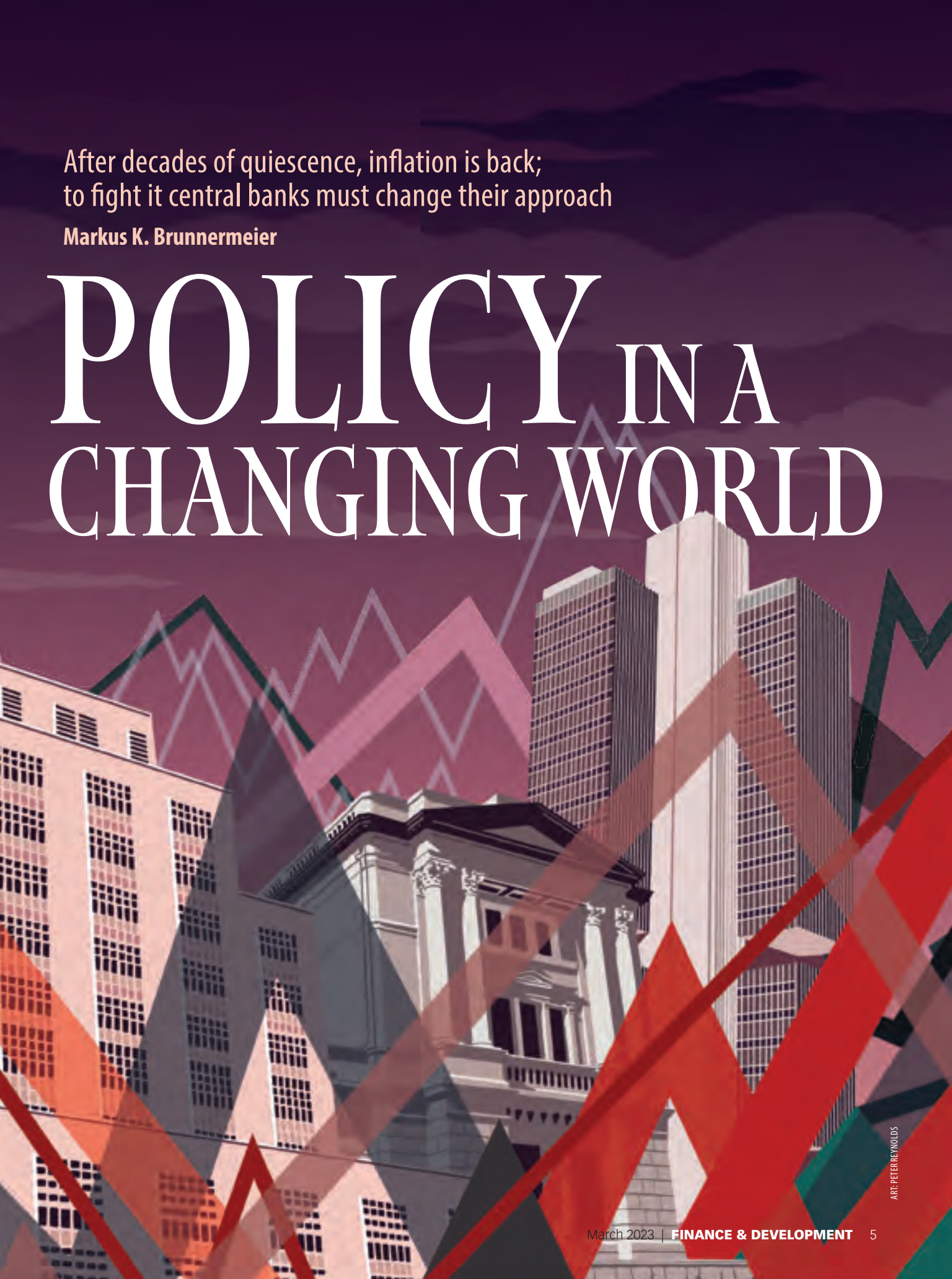


RETHINKING MONETARY

After decades of quiescence, inflation is back;
to fight it central banks must change their approach

Markus K. Brunnermeier

POLICY IN A CHANGING WORLD



ART: PETER REYNOLDS



M

onetary theory in economics has consisted of various schools of thought rather than a single unified model. Each of these schools emphasizes different forces that drive inflation and recommends a distinct policy response. Different times have raised different challenges—and each required its own policy approach.

Now, a resurgence of inflation requires yet another shift in emphasis in monetary policy. The predominant intellectual framework central banks have followed since the global financial crisis that began in 2008 neither stresses the most pressing looming issues nor mitigates their potential dire consequences in this new climate.

Following a lengthy period of low interest rates and low inflation, the global economy is entering a phase characterized by high inflation and high levels of both public and private debt. Fifteen years ago, central banks saw an urgent need to incorporate financial stability and deflation concerns into their traditional modeling of the economy and developed unconventional tools to deal with both.

Although financial stability remains a concern, there are important differences between the current environment and the one that followed the global financial crisis:

- Public debt is now high, so any interest rate increase to fend off inflation threats makes servicing the debt more expensive—with immediate and large adverse fiscal implications for the government. Since the beginning of the COVID-19 crisis in early 2020, it is also evident that fiscal policy can be a significant driver of inflation.
- Instead of deflationary pressures, most countries are experiencing excessive inflation. That means there is now a clear trade-off between a monetary policy that tries to reduce aggregate demand by raising interest rates and one that aims to ensure financial stability.
- The nature and frequency of shocks have changed. Historically shocks were mostly from increases or decreases in demand—with the prominent exception of the supply shocks during the so-called stagflation of the 1970s. Now there

are many shocks: demand vs. supply, specific risks vs. systemic risks, transitory vs. permanent. It is difficult to identify the true nature of these shocks in time to respond. Central bankers need to be more humble.

Monetary policy requires a modified approach that is robust to sudden and unexpected changes in the macroeconomic scenario. Policies that are effective in one macroeconomic environment may have unintended consequences when conditions suddenly change. This article will discuss the main challenges central banks will face, which monetary theories will be in the limelight, and how central banks can avoid becoming complacent and end up fighting the last war.

The monetary-fiscal interaction

Central banks seem to act as the directors of modern economies, setting interest rates with the goal of stabilizing inflation and often attaining full employment as well (in developed economies). An essential cornerstone of this approach, which can be called monetary dominance, is *central bank independence*. A central bank has de jure independence if it legally has the ultimate authority to set interest rates without interference from the government. However, de facto independence is also important: when setting interest rates, the central bank should not have to worry about whether higher rates will increase government indebtedness or default risk. Indeed, as the central bank hikes interest rates and the government has to pay more for its debt, the hope is that authorities will cut back on expenditures, thereby cooling the economy and lowering inflation pressure. The ability of central banks to set monetary policy and control the economy in more fraught times hinges on independence.

The low interest rates and less extreme public debt levels that prevailed after the global crisis permitted central banks to ignore what were then relatively inconsequential interactions between monetary and fiscal policy. The period following the 2008 crisis was one of *monetary dominance*—that is, central banks could freely set interest rates and pursue their objectives independent of fiscal policy. Central banks proposed that the core problem was not rising prices, but the possibility that weak demand would lead to major deflation. As a result, they focused primarily on developing unconventional policy tools to allow them to provide additional

stimulus. Central banks also felt emboldened to pursue policies that would simultaneously meet the need for further stimulus and achieve social objectives, such as hastening the green transition or promoting economic inclusion.

During the COVID-19 crisis, circumstances changed dramatically. Government spending rose sharply in most developed economies. In the United States, the federal government provided massive and highly concentrated support in the form of “stimulus checks” sent directly to households. European countries initially implemented somewhat more modest programs (largely focused on preventing workers from being let go) and on spending programs to assist the green and digital transitions. Fiscal expansion seems to have been a primary driver of inflation in the United States but has contributed to inflation in Europe as well. But as spending was increasing, countries were hit by supply shocks of unprecedented proportion, largely the result of pandemic-related problems—such as supply chain disruptions. These added to inflation pressures.

The pandemic demonstrated that monetary policy does not always control inflation on its own. Fiscal policy also plays a role. More important, the accompanying buildup of public debt raised the possibility of *fiscal dominance*—in which public deficits do not respond to monetary policy. Whereas low debt levels and the need for stimulus allowed monetary and fiscal authorities to act in tandem following the global financial crisis, the prospect of fiscal dominance now threatens to pit them against one another. Central banks would like to hike interest rates to rein in inflation, whereas governments hate higher interest expenses. They would prefer that central banks cooperate by monetizing their debt—that is, by purchasing government securities private investors won’t buy.

Central banks can retain independence only if they promise not to accede to any government desires to monetize excessive debt, which would then force authorities to cut spending or increase taxes, or both—so-called fiscal consolidation.

A key question for policy is what determines the winner of any contest between fiscal and monetary dominance. Legal guarantees of central bank independence are insufficient, by themselves, to guarantee monetary dominance: legislatures can threaten to change laws and international treaties can be ignored, which could cause a central bank to

hold off its preferred policy. To promote monetary dominance, the central bank must remain well capitalized: if it requires frequent recapitalization from the government, the central bank looks weak and risks losing public support. Central banks with large balance sheets that contain many risky assets and pay interest on the reserves to private banks may have large losses as interest rates rise. Those losses could result in increased pressure from fiscal authorities to refrain from raising interest rates.

THE CENTRAL BANK MUST KEEP PUBLIC OPINION ON ITS SIDE, BECAUSE THE PUBLIC IS THE ULTIMATE SOURCE OF ITS POWER AND INDEPENDENCE.

Most important, the central bank must keep public opinion on its side, because the public is the ultimate source of its power and independence. That means the central bank should effectively communicate the rationale for its actions to retain public support, especially in the face of fiscally driven inflation. A central bank ultimately maintains its dominance if it is able to credibly promise that it will not bail out the government by monetizing public debt if there is a default.

The threat of financial dominance

Central banks face new challenges in the interaction between monetary and financial stability. They now operate in an environment in which private debt is high, risk premiums on financial assets are depressed, price signals are distorted, and the private sector relies heavily on the liquidity the central bank provides in a crisis. The key difference between the period after the 2008 crisis and the situation today is that inflation is excessively high.



A decade and a half ago, central banks' twin goals of stimulating economic activity and financial stability through unconventional policies coincided. Now, there are clear trade-offs between inflation management and financial stability, because interest rate hikes to fight inflation threaten to destabilize financial markets.

After the global crisis, central banks faced the dual problem of weak demand and financial instability and committed to doing “whatever it takes” to address both. Once conventional interest rate stimulus was exhausted, they turned to unconventional quantitative easing (QE) programs, in which they purchased large amounts of risky assets from the private sector, hoping that the resulting fall in credit spreads would spur lending and real activity. These QE programs also enabled central banks to play a new significant role as market maker of last resort, buying securities when no one else would.

THERE ARE ALWAYS TRADE-OFFS BETWEEN THEIR GOALS OF PRICE STABILITY AND FINANCIAL STABILITY—EVEN IF THAT TENSION BECOMES CLEAR ONLY IN THE LONG RUN.

The large purchases of private assets caused central bank balance sheets to swell, and that expansion was not undone when the crisis ended because central banks feared that doing so quickly would cause economic damage. The willingness to maintain large balance sheets has led to a buildup of private debt, depressed credit spreads, distorted price signals, and high house prices from increased mortgage lending. The private sector has come to depend on the liquidity provided by central banks and has grown accustomed to the low-interest-rate environment. Indeed, financial markets have come to expect that central banks will always step in when asset prices fall too low. Because the private sector has become so dependent on the central bank, the contractionary effect of unwinding central bank

balance sheets may be significantly more visible than the stimulus provided by QE. It is not yet clear which problems may afflict the financial sector when the monetary policy environment abruptly changes, but the potential losses faced by pension funds in the United Kingdom in 2022 provide a stark warning. Those funds used techniques that when unraveled had the potential to seriously distort long-term interest rates and trigger a larger crisis. The Bank of England had to step in to buy UK bonds to forestall a crisis after long-term rates climbed.

Now, in an environment that compels central banks to raise rates to combat inflation, their goals of inflation stability and financial stability conflict. The reliance of the private sector, especially the capital markets, on central bank liquidity has led to a situation of *financial dominance*, in which monetary policy is restricted by concerns about financial stability. In such an environment, monetary tightening could wreak havoc on the financial sector and further render the economy vulnerable to even small disturbances. The extent of financial dominance depends on whether private banks are sufficiently capitalized to withstand losses and on the smoothness of private bankruptcy proceedings. A well-functioning insolvency law would insulate the system from spillover effects from the failure of an individual institution and make it less likely that a central bank would feel compelled to bail it out. These issues make it difficult for central banks to bring down inflation without causing a recession—and somewhat undermine their de facto independence.

These problems call for rethinking how monetary policy interacts with financial stability. It is crucial that central banks aim to restore price signals smoothly in private markets in which they have intervened excessively. They should also recognize that there are always trade-offs between their goals of price stability and financial stability—even if that tension becomes clear only in the long run. The buildup of central bank balance sheets leads to financial distortions and constrains their future actions. Central banks should anticipate this tension and impose greater macroprudential oversight—that is, regulating not only with an eye to the soundness of individual institutions, as has been the aim of financial regulation historically, but also to ensure the soundness of the financial system

as a whole. Such enhanced macroprudential regulation should have a particular focus on monitoring dividend payouts and buildup of risk in the nonbank capital markets. Finally, central banks should reconsider their roles as lenders and market makers of last resort and ensure that any interventions are only temporary. Central banks should focus on *communicating* a policy framework that smooths liquidity conditions without leading to permanent asset purchases.

Inflation expectations and anchors

Today a flurry of supply and other shocks are pushing up inflation and threaten to separate inflation expectations from the central bank's inflation target, or anchor. After the so-called Great Moderation of the 1980s and 1990s—when inflation and economic growth were both favorable—inflation expectations were stable across developed economies. Following the global financial crisis, there were even fears that overall prices would fall (deflation). But the rapid inflation that followed the COVID-19 pandemic made central banks realize that the time for deflation worries had passed; the possibility that inflation will exceed central bank targets in the intermediate term is again a concern.

Central banks overlearned the lessons of the 2008 crisis, which caused them to abandon their traditional approach to inflation expectations. This intellectual shift was largely responsible for the initial misdiagnosis of the inflation threat during the pandemic. Central banks took for granted that inflation had been conquered since the 1980s, which led them to assume that inflation expectations would always remain well anchored. Under that assumption, central banks believed it was possible to run the economy hot—that is, letting unemployment fall below the so-called natural (or noninflationary) rate—without incurring much risk. They also considered it safe to make long-term policy commitments (such as forward guidance that they would keep interest rates low far into the future), because those commitments did not seem likely to have long-term inflationary consequences. But such commitments can hurt expectations if central banks in the future cannot keep them. Moreover, the fear of *deflation* led central banks to adopt a data-driven approach to policy that intentionally delayed any tightening. To ensure that economic output would not be cut

off prematurely, central banks would not raise rates when they expected higher future inflation (say, because unemployment below its natural level was expected to lead to overheating). Instead, they would wait until inflation materialized before taking action.

Central banks also took a complacent approach to dealing with supply shocks. The economic models typically employed by central banks often imply that monetary policy should not fully neutralize inflation caused by supply shocks because such inflation is only temporary (ending when the supply increases) and interest rate policy is meant to control aggregate demand. Instead, the standard argument is that the central bank should weigh the benefits of cooling the temporary inflation against the costs of stifling economic growth. However, failing to react to supply shocks by taking steps to reduce demand could destabilize the inflation anchor and prevent the central bank from achieving its goals down the road. Paradoxically, the Ukraine war strengthened the inflation anchor because it gave central banks cover to explain why inflation rose so much.

The intellectual framework adopted by central banks after the 2008 crisis does not yet appear to have de-anchored inflation expectations. But it would be costly to wait until de-anchoring begins to alter the framework. Warning signals have already emerged in recent inflation expectations data. The loss of the inflation anchor, with its attendant consumer and business uncertainty, would hinder both aggregate demand and supply. That would have important consequences both for central banks—because it would hamper their ability to control inflation—and for economic activity, because consumers and firms would hesitate to buy and invest.

To address these problems, central banks should return to a monetary approach in which stabilizing inflation expectations is a central priority. Policy cannot tighten only after inflation occurs. Instead, central banks should take action as soon as warning signals flash. Central banks must incorporate both households' and financial markets' expectations of future inflation, since those expectations shape both aggregate demand conditions and asset prices. **FD**

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LESS IS MORE

More focused, less interventionist central banks would likely deliver better outcomes

Raghuram Rajan

Central bankers of industrialized countries have fallen tremendously in the public's estimation. Not long ago they were heroes, supporting feeble growth with unconventional monetary policies, promoting the hiring of minorities by allowing the labor market to run a little hot, and even trying to hold back climate change, all the while berating paralyzed legislatures for not doing more. Now they stand accused of botching their most basic task, keeping inflation low and stable. Politicians, sniffing blood and mistrustful of unelected power, want to reexamine central bank mandates.

Did central banks get it all wrong? If so, what should they do?

The case for central bankers

I'll start first with why central banks should be cut some slack. Hindsight is, of course, 20/20. The pandemic was unprecedented, and its consequences for the globalized economy very hard to predict. The fiscal response, perhaps much more generous because polarized legislatures could not agree on whom to exclude, was not easy to forecast. Few thought Vladimir Putin would go to war in February 2022, disrupting supply chains further and sending energy and food prices skyrocketing.

Undoubtedly, central bankers were slow to react to growing signs of inflation. In part, they believed

they were still in the post-2008 financial crisis regime, when every price spike, even of oil, barely affected the overall price level. In an attempt to boost excessively low inflation, the Federal Reserve even changed its framework during the pandemic, announcing it would be less reactive to anticipated inflation and keep policies more accommodative for longer. This framework was appropriate for an era of structurally low demand and weak inflation, but exactly the wrong one to espouse just as inflation was about to take off and every price increase fueled another. But who knew the times were a-changing?

Even with perfect foresight, central bankers—who are in reality no better informed than capable market players—might still have been understandably behind the curve. A central bank cools inflation by slowing economic growth. Its policies have to be seen as reasonable, or else it loses its independence. With governments having spent trillions to support their economies, employment just recovered from terrible lows, and inflation barely noticeable for over a decade, only a foolhardy central banker would have raised rates to disrupt growth if the public did not yet see inflation as a danger. Put differently, preemptive rate rises that slowed growth would have lacked public legitimacy—especially if they were successful and inflation did not rise subsequently, and even more so if they deflated the frothy financial asset prices

that gave the public a sense of well-being. Central banks needed the public to see higher inflation to be able to take strong measures against it.

In sum, central bank hands were tied in different ways—by recent history and their beliefs, by the frameworks they had adopted to combat low inflation, and by the politics of the moment, with each of these factors influencing the others.

The case against

Yet stopping the postmortem at this point is probably overly generous to central banks. After all, their past actions reduced their room to maneuver, and not only for the reasons just outlined. Take the emergence of both fiscal dominance (whereby the central bank acts to accommodate the government's fiscal spending) and financial dominance (whereby the central bank acquiesces to the imperatives of the market). They clearly are not unrelated to central bank actions of the past few years.

While central banks can claim they were surprised by recent events, they played a role in constraining their own policy space.

Long periods of low interest rates and high liquidity prompt an increase in asset prices and associated leveraging. And both the government and the private sector leveraged up. Of course, the pandemic and Putin's war pushed up government spending. But so did ultralow long-term interest rates and a bond market anesthetized by central bank actions such as quantitative easing. Indeed, there was a case for targeted government spending financed by issuing long-term debt. Yet sensible economists making the case for spending did not caveat their recommendations enough, and fractured politics ensured that the only spending that could be legislated had something for everyone. Politicians, as always, drew on unsound but convenient theories (think modern monetary theory) that gave them license for unbridled spending.

Central banks compounded the problem by buying government debt financed by overnight reserves, thus shortening the maturity of the financing of the government and central bank's

consolidated balance sheets. This means that as interest rates rise, government finances—especially for slow-growing countries with significant debt—are likely to become more problematic. Fiscal considerations already weigh on the policies of some central banks—for instance, the European Central Bank worries about the effect of its monetary actions on “fragmentation,” the yields of fiscally weaker countries' debt blowing out relative to those of stronger countries. At the very least, perhaps central banks should have recognized the changing nature of politics that made unbridled spending more likely in response to shocks, even if they did not anticipate the shocks. This may have made them more concerned about suppressing long rates and espousing low-for-long policy rates.

The private sector also leveraged up, both at the household level (think Australia, Canada, and Sweden) and at the corporate level. But there is another new, largely overlooked, concern—liquidity dependence. As the Fed pumped out reserves during quantitative easing, commercial banks financed the reserves largely with wholesale demand deposits, effectively shortening the maturity of their liabilities. In addition, in order to generate fees from the large volume of low-return reserves sitting on their balance sheets, they wrote all sorts of liquidity promises to the private sector—committed lines of credit, margin support for speculative positions, and so on.

The problem is that as the central bank shrinks its balance sheet, it is hard for commercial banks to unwind these promises quickly. The private sector becomes much more dependent on the central bank for continued liquidity. We had a first glimpse of this in the UK pension turmoil in October 2022, which was defused by a mix of central bank intervention and government backtracking on its extravagant spending plans. The episode did suggest, however, a liquidity-dependent private sector that could potentially affect the central bank's plans to shrink its balance sheet to reduce monetary accommodation.

And finally, high asset prices raise the specter of asymmetric central bank action—the central bank being quicker to be accommodative as activity slows or asset prices fall but more reluctant to raise rates as asset prices bubble up, pulling activity along with them. Indeed, in a 2002 speech at the Kansas City Federal Reserve Bank's Jackson Hole conference, Alan Greenspan argued that,

while the Fed could not recognize or prevent asset price booms, it could “mitigate the fallout when it occurs and, hopefully, ease the transition to the next expansion,” thus making asymmetry a canon of Fed policy.

High asset prices, high private leverage, and liquidity dependence suggest that the central bank could face financial dominance—monetary policy that responds to financial developments in the private sector rather than to inflation. Regardless of whether the Fed intends to be dominated, current private sector forecasts that it will be forced to cut policy rates quickly have made its task of removing monetary accommodation more difficult. It will have to be harsher for longer than it would want to be, absent these private sector expectations. And that means worse consequences for global activity. It also means that when asset prices reach their new equilibrium, households, pension funds, and insurance companies will all have experienced significant losses—and these are often not the entities that benefited from the rise. Bureaucrat-managed state pension funds, the unsophisticated, and the relatively poor get drawn in at the tail end of an asset price boom, with problematic distributional consequences for which the central bank bears some responsibility.

One area in which reserve country central bank policy has consequences but their central bankers little responsibility is the external spillovers of their policies. Clearly, the policies of the core reserve countries affect the periphery through capital flows and exchange rate movements. The periphery central bank must react regardless of whether its policy actions are suitable for domestic conditions—if not, the periphery country suffers longer-term consequences such as asset price booms, excessive borrowing, and eventually debt distress. I will return to this issue in the conclusion.

In sum, then, while central banks can claim they were surprised by recent events, they played a role in constraining their own policy space. With their asymmetric and unconventional policies, ostensibly intended to deal with the policy rate touching the lower bound, they have triggered a variety of imbalances that not only make fighting inflation harder but also make it difficult to exit the prevalent policy mix, even as the inflation regime has changed to one of substantially higher inflation. Central banks are not the innocent bystanders they are sometimes made out to be.

Mission creep

So what happens now? Central bankers know the battle against high inflation well and have the tools to combat it. They should be free to do their job.

But when central banks succeed in bringing inflation down, we will probably return to a low-growth world. It is hard to see what would offset the headwinds of aging populations; a slowing China; and a suspicious, militarizing, de-globalizing world. That low-growth and possibly low-inflation world is one central bankers understand less well. The tools central bankers used after the financial crisis, such as quantitative easing, were not particularly effective in enhancing growth. Furthermore, aggressive central bank actions could precipitate more fiscal and financial dominance.

So when all settles back down, what should central bank mandates look like? Central banks are not the obvious institutions to combat climate change or promote inclusion. Often they have no mandate to tackle these issues. Instead of usurping mandates in politically charged areas, it is best that central banks wait for a mandate from the elected representatives of the people. But is it wise to give central banks mandates in these areas? First, central bank tools have limited effectiveness in areas like combating climate change or inequality. Second, could new responsibilities influence their effectiveness in achieving their primary mandate(s)? For instance, could the new Fed framework requiring it to pay attention to inclusion have held back rate increases—since disadvantaged minorities are usually, and unfortunately, the last to be hired in an expansion? Finally, could these new mandates expose the central bank to a whole new set of political pressures and prompt new forms of central bank adventurism? All this is not to say that central banks should not worry about the consequences of climate change or inequality for their explicit mandate(s). They could even follow the express instructions of elected representatives in some matters (for instance, buying green bonds instead of brown bonds when intervening in markets), though this opens them up to the risk of external micromanagement. However, the task of directly combating climate change or inequality is best left to the government, not the central bank.

But what about their mandate and their frameworks for price stability? The earlier discussion suggested a fundamental contradiction central banks face. Hitherto, there was a sense that

they needed one framework—for instance, an inflation-targeting framework that commits them to keeping inflation within a band or symmetrically around a target. Yet as Bank for International Settlements (BIS) General Manager Agustín Carstens argues, a low-inflation regime can be very different from a high-inflation regime. Depending on the regime they are in, their framework may need to change. In a low-inflation regime, in which inflation does not budge from low levels no matter the price shock, they may need to commit to being more tolerant of inflation in the future in order to raise inflation today. Put differently, as Paul Krugman argued, they have to commit to being rationally irresponsible. This means adopting policies and frameworks that effectively bind their hands, committing them to stay accommodative for long. But as argued above, this may precipitate regime change, for instance, by loosening perceived fiscal constraints.

Conversely, in a high-inflation regime, where every price shock propels another, central banks need a strong commitment to eradicating inflation as early as possible, following the mantra “when you stare inflation in the eyeballs, it is too late.” The framework-induced commitment for inflation tolerance needed for the low-inflation regime is thus incompatible with the one needed for the high-inflation regime. But central banks cannot simply shift based on regime because they lose the power of commitment. They may have to choose a framework for all regimes.

Choosing frameworks

If so, the balance of risks suggests that central banks should reemphasize their mandate to combat high inflation, using standard tools such as interest rate policy. What if inflation is too low? Perhaps, as with COVID-19, we should learn to live with it and avoid tools like quantitative easing that have questionably positive effects on real activity; distort credit, asset prices, and liquidity; and are hard to exit. Arguably, so long as low inflation does not collapse into a deflationary spiral, central banks should not fret excessively about it. Decades of low inflation are not what slowed Japan’s growth and labor productivity. Aging and a shrinking labor force are more to blame.

It is not good to complicate central bank mandates, but they may need a stronger mandate to help maintain financial stability. For one, a financial

crisis tends to bring on the excessively low inflation that central banks find hard to combat. Second, the ways they typically tackle an extended period of too-low inflation, as we have seen, fuel higher asset prices and consequently leverage and further possible financial instability. Unfortunately, even though monetary theorists argue that it is best to deal with financial stability through macroprudential supervision, that has proved less than effective thus far—as evidenced by house price booms in key economies. Furthermore, macroprudential policies may have little impact in areas of the financial system that are new or distant from banks, as evidenced by the crypto and meme stock bubbles and their bursting. While we do need better coverage of the financial system, especially the nonbank shadow financial system, with macroprudential regulation, we should also remember that monetary policy, in Jeremy Stein’s words, “gets into all the cracks.” Perhaps then, with such power should come some responsibility!

What about responsibilities for the external consequences of their policies? Interestingly, central banks that are more focused on domestic financial stability will likely adopt monetary policies that have fewer spillovers. Nevertheless, central bankers and academics should start a dialogue on spillovers. A largely apolitical dialogue can begin at the BIS in Basel, where central bankers meet regularly. Eventually the dialogue can move to the IMF, involving government representatives and more countries, to discuss how central bank mandates should change in an integrated world. Pending such dialogue and a political consensus on mandates, though, refocusing central banks on the primary mandate of combating high inflation while respecting the secondary mandate of maintaining financial stability may be enough.

Will these twin mandates condemn the world to low growth? No, but they will place the onus for fostering growth back on the private sector and governments, where it belongs. More focused and less interventionist central banks would probably deliver better outcomes than the high-inflation, high-leverage, low-growth world we now find ourselves in. For central banks, less may indeed be more. **FD**

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CRISIS & MONETARY POLICY

The pandemic and war have bred new challenges for global central banks in coming years

Gita Gopinath

The global inflation surge that abruptly ended decades of moderating price gains came at a unique confluence of crises: the global pandemic and Russia's invasion of Ukraine.

Now, economists must ask, What lessons does this era offer for monetary policy? We might begin with the lessons from the pandemic and war that are relevant for monetary policy, even if the world eventually moves back to an environment of low interest rates and low inflation. Most economists missed the inflation surge, and we need to understand why, and how monetary policy may have to change going forward.

But some crisis effects—high inflation, supply chain disruptions, greater trade barriers—may persist much longer, or intensify. That could challenge macroeconomic stability around the world, especially in emerging markets. How can we avoid this?

Accounting for inflation surge

Soaring prices were a surprise from the perspective of precrisis policy frameworks, especially for advanced economies. Empirical evidence suggested that inflation rose by only a small amount when unemployment declined, consistent with a very flat Phillips curve. This evidence was reinforced



Inflation risks from running the economy hot may be much greater than we previously thought.

by the pre-pandemic experience of inflation that remained tepid even as monetary stimulus pushed unemployment to very low levels.

However, these models embedding a low Phillips curve slope did a poor job of explaining the pandemic-related surge in prices. Most inflation forecasts based on these models, including ours at the IMF, significantly underpredicted inflation.

While high inflation partly reflects unusual developments, some forecast errors likely reflect our misunderstanding of the Phillips curve and the supply side of the economy.

While the standard Phillips curve links inflation to the unemployment gap, the rapid employment recovery may have played a significant role in driving inflation, implying that “speed effects” matter more than previously thought. There may also be important nonlinearities in the Phillips curve slope: price and wage pressures from falling unemployment become more acute when the economy is running hot than when it’s below full employment. Finally, surging goods inflation during the recovery—when constraints on supply and demand for services meant massive stimulus fell heavily on goods—suggests the importance of capacity constraints at the sectoral, as well as aggregate, level.

Lessons for monetary policy

One implication of these insights is that we need better aggregate supply models that reflect the pandemic’s lessons. For instance, it will help to further develop sectoral models that differentiate between goods and services and incorporate sectoral capacity constraints to help account for speed effects and nonlinearities at both the sectoral and aggregate levels.

But we should also reconsider policy prescriptions widely held prior to the pandemic that were based on a flat Phillips curve.

One such prescription held that unemployment well below its natural rate was acceptable, even desirable. Running the economy hot seemed to work well for the United States and other advanced economies before the pandemic. Unemployment fell to historic lows, including for disadvantaged workers, while inflation remained below target.

But inflation risks from running the economy hot may be much greater than we previously thought.

The pandemic also highlighted difficulties in measuring economic slack. While mismeasurement isn’t a serious problem if the Phillips curve is flat, it is if the curve is nonlinear when unemployment falls below a highly uncertain natural rate. In this situation, policymakers may unwittingly push unemployment below their (overly optimistic) estimate of the natural rate and fuel an inflationary surge—as arguably occurred during the Great Inflation of the 1970s. In addition, the pandemic suggests that running the economy hot makes it more likely that key sectors will hit capacity constraints, generating inflationary pressures that may become broad-based.

Running the economy hot may still be desirable in certain circumstances, but policymakers must be more attuned to the potential downsides and be careful with overdoing stimulus.

Another pre-pandemic view was that major central banks could use their credibility to “look through” temporary supply shocks, like high oil prices, and assume inflation would be transient. Policy rates would adjust in response to second-round effects; that is, to the more persistent effects on inflation. But these were typically estimated to be small, so policymakers didn’t have to react much, even to large shocks—consistent with favorable inflation-employment trade-offs.

The pandemic underscored how supply shocks can have broad, persistent inflationary effects, with surprising speed. Strong upward price pressures in some industries may spread through supply chains, and to wages, or affect inflation expectations, influencing price or wage setting.

This suggests that central banks should react more forcefully under certain conditions. Initial conditions likely matter: looking through a temporary shock may cause problems if inflation is already high, so additional shocks are more likely to dislodge price expectations. Central banks may also need to be more aggressive in their policy responses in a strong economy where producers can easily pass on rising costs and workers are less

willing to accept real wage declines. The central bank may also have to react more if the shocks are broad-based rather than concentrated in particular sectors.

Risk of persistence

The lessons about the Phillips curve and policy prescriptions predicated on its being flat would apply even in a pre-pandemic environment with typically low interest rates and inflation in which supply problems dissipate. But there's also the possibility of much more persistent inflation that de-anchors expectations, and of more chronic disruptions to global supply chains and open trade.

A key risk is that high inflation de-anchors inflation expectations. This would complicate monetary policy trade-offs, because currency depreciations and supply shocks would both have much more persistent inflationary effects. Bigger interest rate hikes to contain inflation would cause larger output contractions. Significant and front-loaded tightening by several central banks over the past year has helped attenuate de-anchoring risks. Nevertheless, central bankers should remain vigilant.

The challenge for central banks would also be compounded if supply shocks become more entrenched. This may occur if countries decide to reduce the risk of supply chain disruptions by raising trade barriers. That would expose countries to greater supply shock volatility, in turn posing more difficult trade-offs for monetary policy and making economic stabilization harder.

Central banks in emerging markets would be particularly hurt if trade becomes more fragmented and inflation expectations de-anchor. These economies are already more vulnerable to external shocks, and could face harder policy trade-offs.

In principle, the pandemic and war could also have enduring effects on the demand side of the economy by affecting the equilibrium real interest rate (the rate at which in the long run the economy achieves its potential output without incurring inflation). They could impact inequality, demographics, productivity, demand for safe assets, and public investment and debt, among other things. For instance, the pandemic and war may further depress the equilibrium rate by increasing demand for safe assets and raising inequality.

Overall, these effects probably won't be particularly large, and, accordingly, the equilibrium rate is likely to remain low—though there remains

uncertainty about its actual level. Moreover, a persistent shift to deficit spending, or a sizable catch-up in climate investment, could materially boost the equilibrium rate.

Policy implications

The pandemic and war have further challenged central banks. Those in advanced economies had focused in recent years on providing enough stimulus to support growth and boost low inflation. The task was to deliver the firepower needed through near-zero interest rates when inflation seemed destined to remain too low.

Now, these crises underscore for central banks that managing risks means accounting for inflation that's too low or too high—and the possibility of stronger tensions between the objectives of price stability and employment or growth. The pandemic has also shown how the relationship between unemployment and inflation, embedded in the Phillips curve, may not be flat when the economy is strong—and that shocks like high energy prices may play out differently in good times versus subdued periods.

Accordingly, the more palpable risk of rapid inflation means it's crucial to revisit the robustness of strategies such as running the economy hot and seeing supply shocks as temporary. These strategies offer benefits, but also raise risks to price stability.

Beyond these lessons, there are concerns that the pandemic and war may lead to larger supply shocks, and less-anchored inflation expectations. These risks are biggest for emerging markets, especially those with high debt. But with the fastest inflation in decades, advanced economy central banks also face significant risks, which is why they need to stay the course and maintain restrictive monetary policy rates until they see durable signs of inflation returning to target. We can't have sustained economic growth without restoring price stability.

While central banks must lead the inflation fight, other policies can help. Fiscal policy should play a role, with targeted help for the most vulnerable that doesn't stimulate the economy. Policymakers must advance the climate agenda to preserve economic and financial stability. Finally, policies that reduce fragmentation risks in global trade will lower the risk of supply shocks and help boost the world's potential output. **FD**

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Time for Change

It's time to rethink the foundation and framework of monetary policy

Masaaki Shirakawa



PHOTO: COURTESY OF MASAAKI SHIRAKAWA

In 2008, Queen Elizabeth II famously asked professors at the London School of Economics (LSE) about the global financial crisis: “Why did no one see it coming?” If Charles III were following in the footsteps of his late mother, he would surely ask a similar question today, but about high inflation.

This question is more compelling for two reasons. First, before the recent inflation spike to levels not seen in 40 years, many central banks in advanced economies were overwhelmingly concerned about low inflation. Second, they confidently contended that inflation was transitory and failed to restrain it even as prices rose rapidly. The triggering events, notably trade and production disruption owing to the pandemic and the war in Ukraine, were supply-side events. These were considered outside

the remit of monetary policy. But the impact of triggering events on inflation varies according to preexisting financial conditions, which are in turn shaped by monetary policy. Central bankers, therefore, are not entirely blameless.

Just as when the queen posed her question to LSE professors, it is again time for deep soul-searching by academics and central bankers about the prevailing monetary policy framework and, more fundamentally, its supporting intellectual model.

Unfounded fear

The conventional fear of deflation and interest rates falling to their lowest level possible (the so-called zero lower bound) was well articulated in a speech by Jay Powell, Federal Reserve chairman, at the August 2020 Jackson Hole conference: “[I]f inflation expectations fall below our 2 percent objective, interest rates would decline in tandem. In turn, we would have less scope to cut interest rates to boost employment during an economic downturn, diminishing our capacity to stabilize the economy through cutting interest rates. We have seen this adverse dynamic play out in other major economies around the world and have learned that once it sets in, it can be very difficult to overcome. We want to do what we can to prevent such a dynamic from happening here.”

This is the crux of the argument deployed by central banks to justify aggressive monetary easing in response to declining inflation. It sounds plausible, but must be substantiated by facts. And the experiences of the “other major economies,” by which Powell obviously meant Japan, cast doubts on the validity of the narrative.

Japan indeed reached the zero lower bound on interest rates long before other economies. But if this had been a serious constraint on policy, Japan’s growth rate should have been lower than that of its Group of Seven (G7) peers. Yet growth of Japanese GDP per person was in line with the G7 average from 2000 (about the time the Bank of Japan’s interest rates reached zero and the central bank began unconventional monetary policy) to

The environment that fostered benign supply-side factors is under attack from many directions: heightened geopolitical risk, rising populism, and the pandemic have disrupted global supply chains.

2012 (just before the central bank's balance sheet started to balloon). Growth of Japan's GDP per working-age person was the highest among the G7 during the same period.

The Bank of Japan's "great monetary experiment" in the years following 2013, during which the central bank's balance sheet expanded from 30 percent to 120 percent of GDP, is again telling. On the inflation front, the impact was modest. And on the growth front, its effect was modest too. This was the case not only in Japan but also in many other countries that followed it by adopting unconventional policy after 2008.

This does not mean that unconventional monetary policy never has any effect. It can become extremely potent—depending on timing. A case in point is forward guidance, the central bank's strong signal to markets of the intended path of its policy interest rate in order to influence long-term interest rates. When the economy is weak, forward guidance is not very effective because market participants expect interest rates to remain low anyway. But when the economy is hit by a surprise shock to demand or supply, forward guidance of continuing low interest rates can suddenly become too expansionary and inflationary. This may partly explain what we are seeing now.

Political naïveté

The widespread adoption of flexible average inflation targeting—which explicitly allowed inflation to overshoot the target—also fed into central bankers' failure to tighten policy sooner. When they decided to allow overshooting, central bankers forgot the inherent difficulty of taking away the monetary punch bowl—even though their predecessors had encountered similar difficulties

many years earlier. Just ask yourself a question: Is it possible in a democratic society for unelected central bankers to ask the government and legislators to trim the inflationary spending plans on which they were elected?

Perhaps central bankers simply had it too easy during the "Great Moderation," the 20 or so years of steady growth and stable inflation that began in the mid-1980s. The prevalent narrative of successful monetary policy conducted by independent central banks during that period may have come down to good luck and fortuitous circumstances. The global economy benefited from favorable supply-side factors, such as the entry of developing and former socialist economies into the global market economy, rapid advances in information technology, and a relatively stable geopolitical environment. These factors enabled low inflation and relatively high growth to coexist. Central banks' job did not require much of a political mandate.

After experiencing those peaceful times, when central bank independence came to be widely accepted, central banks started to deploy unconventional monetary policy. There was a somewhat naïve assumption that the policy could be unwound easily enough when necessary. Unfortunately, the world has changed. The environment that fostered benign supply-side factors is under attack from many directions: heightened geopolitical risk, rising populism, and the pandemic have disrupted global supply chains. Central banks now face a trade-off between inflation and employment, which makes unwinding very challenging.

Rethinking the framework

As we reflect on why central bankers missed the wave of inflation, we must reconsider the intellectual

model we have relied on—and update our monetary policy framework accordingly. I highlight three issues that should be taken into account.

First, we must reassess whether we should continue to focus on the perils of deflation and the zero lower bound on interest rates. This needs urgent consideration because it affects the end point of the current tightening cycle. As US inflation shows signs of passing its peak, some economists are already calling for a higher inflation target and thus less additional tightening to maintain an ample margin of safety and not risk deflation.

I am skeptical of this argument. Even if we had entered the global financial crisis with a higher inflation target and additional room for interest rate cuts, the global economy would not have taken a materially different course. I agree with Paul Volcker, the former Federal Reserve chairman credited with ending the high US inflation of the 1970s and early 1980s: “deflation is a threat posed by a critical breakdown of the financial system.” That is exactly what happened in the 1930s and did not happen in 2008, although we came to the brink. The key difference was that efforts at preventing a breakdown of the financial system were more effective in 2008.

Additional room for rate cuts would not offer any comfort if financial imbalances were to manifest as debt-fueled asset bubbles and financial crises. Accordingly, central banks cannot be attentive only to macroeconomic developments such as inflation and the output gap. They must also pay attention to what is happening in financial institutions and financial markets.

Second, we must reflect on why central banks were forced into prolonged monetary easing and what the consequences were. A case in point is Japan, where stagnant growth due to structural factors—notably a rapidly aging and shrinking population—was misconstrued as cyclical weakness. This resulted in decades of monetary easing. This is not the same as saying that a decline in interest rate is a response to a decline in the natural rate of interest. Rather, monetary policy became a quick fix for structural problems that required more radical reform.

Oddly enough, debates about monetary policy often assume that monetary easing and tightening arrive alternately in a relatively short space of time. If this were so, it would justify the traditional view

that monetary easing affects only the demand side. But if monetary easing takes place over a longer period of, say, 10 years or more, then the adverse effects on productivity growth through resource misallocation become serious. Monetary policy should not be guided by supply-side considerations, but it shouldn't ignore them either.

National differences

Finally, we must pay attention to national differences in the way each country designs its framework for monetary policy. Different employment practices, for example, generate different wage dynamics and for that matter different inflation dynamics. In Japan, consumer inflation is accelerating but at a much slower pace than in other advanced economies. This is mainly because of the unique practice of “long-term employment”: Japanese workers, especially at large firms, are protected by an implicit contract under which bosses try to avoid layoffs at all costs. This makes them cautious about offering permanent wage increases unless they are truly confident about future growth. It translates into lower inflation.

Even in a globalized economy, differences in the social contract or in economic structure matter. This undermines the case for a one-number-fits-all inflation-targeting strategy. We must remember why we cannot find a good alternative to the system of flexible exchange rates: countries have different macroeconomic preferences, and the resulting differences between countries are reflected in the rise and fall of their currencies. The anchor for a currency (if there ever is one) can be established only through a firm commitment by the central bank to restrain inflation by monetary tightening and to be the lender of last resort—not by a simple act of setting an inflation target.

Inflation targeting itself was an innovation that came about in response to the stagflation of the 1970s and early 1980s. There is no reason to believe it is set in stone. Now that we know its limitations, the time is ripe to reconsider the intellectual foundation on which we have relied for the past 30 years and renew our framework for monetary policy. **FD**

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HOW WE MISSED THE RECENT INFLATION SURGE

A remarkable demand recovery and changed dynamics in goods and labor markets contributed to misjudgments

Christoffer Koch and Diaa Noureldin

Macroeconomic forecasting is often likened to driving forward while looking through the rearview mirror. Indeed, the past tends to be a reliable guide to the future. When economies are hit by severely disruptive shocks, however, previously familiar economic dynamics may change and forecast misses become more prevalent. Still, the extent to which the rapid rise and persistence of the current wave of global inflation eluded most professional forecasters, including us at the International Monetary Fund, remains intriguing. One question naturally arises: Should we have seen this coming?

The IMF produces and publishes its *World Economic Outlook* forecasts on a quarterly

basis—these include GDP growth and inflation. We recently dissected the errors in our core inflation forecasts for the world's economies—that is, forecasts of inflation stripped of the volatile effects of food and energy price swings. Think of core inflation, which is tightly linked to many central banks' inflation targets, as a slow-moving object that is relatively easier to forecast. Large forecast errors for core inflation generally reflect inaccurate assessments of current and near-term demand and supply of goods and services.

Despite our repeated revisions to the inflation forecasts between the first quarter of 2021 and the second quarter of 2022, misses have been sizable and persistent. These inflation surprises preceded the Russian invasion of Ukraine. While the war



amplified inflationary pressures from the supply side through the disruption of global commodity markets, we argue that the pandemic shock and the ensuing economic recovery with strong fiscal backing provided the first spark. So how do we parse the evidence for our conjecture?

We conducted both *ex post* and *ex ante* analyses to better understand the economic drivers behind the inflation forecast misses. In the *ex post* analysis, we consider what we know today and what we can learn with the benefit of hindsight. In the *ex ante* analysis, we try to understand what we knew at the time but seem not to have sufficiently integrated into the inflation outlook.

Underprediction factors

We consider four factors that, with the benefit of hindsight, help us rationalize inflation underpredictions. First, as the pandemic shock hit, policymakers were quick to provide fiscal support to avoid deep scarring from the crisis. Still, forecasts projected some scarring, and output gap projections for 2021 foresaw a large contraction in economic activity compared with potential. Only in retrospect did it become clear that the output slump, relative to potential, was not as dire. Most world economies—almost 80 percent of world GDP—are now known to have had smaller output gaps than projected in early 2021, an indication that the rapid recovery in demand exceeded expectations. We find evidence that countries whose economic recovery from the pandemic shock was faster than expected—such as New Zealand, Singapore, and Türkiye—also experienced inflation that was higher than expected. This was more prevalent in 2021 than

in 2022, hinting at a potential role for demand overstimulation in the initial phase of the recovery from the pandemic shock.

Second, the strong demand recovery met highly strained supply chains. Supply chain bottlenecks are normally caused by either demand or supply shocks, rarely a combination of the two. During the initial COVID-19 lockdowns, a formidable combination of both forces was at play—demand for goods was increasing at a fast pace, while supply saw a temporary substantial retreat. We found that for countries in which demand played a more prominent role than supply in straining supply chains, forecast errors were larger on average. This dynamic played out in Brazil and New Zealand, and to a lesser extent in Canada and the US.

Third, the demand-supply imbalances were amplified by the shift in demand from services to goods during the early lockdown period as the leisure and hospitality sector mostly ceased functioning. This temporarily reversed a trend seen over the past couple of decades of goods inflation that was lower than services inflation. For economies where this reversal seemed sharp, with goods inflation more elevated than services inflation, forecast errors were larger as well. The shift in demand from services to goods was likely a driver of inflation misses in Brazil, Chile, and the US, where core goods inflation in 2021 was more than twice that of services.

Fourth, unprecedented labor market tightness, which persists to this day in some advanced economies, confounded some of the previous factors. Measured by the ratio of vacancies to unemployment, labor markets have been particularly tight in Australia, Canada, the UK, and the US,

Policymakers could have been advised to reduce their speed somewhat back in 2020 given the danger that was lurking down the road.

significantly correlating with the magnitude of these countries' core inflation forecast errors.

Fiscal stimulus

The combination of stronger-than-anticipated demand recovery, ramped-up demand clogging supply chains, sectoral shifts in demand, and a heated labor market offers a convincing postmortem explanation for repeatedly missing the inflation bout. We are certainly wiser with the benefit of hindsight. Yet policymakers must make decisions in real time with a subset of the information we have today. This raises a simple yet important question: At the time they issued the forecast, should forecasters have seen this inflationary force coming through the windshield?

As a driver increases speed, the visual corridor may narrow, masking dangers down the road. One peculiar feature of the policy response to the pandemic in 2020 was the aggressive fiscal stimulus, which according to some observers resembled wartime spending. Importantly, this stimulus was part of the forecasters' information set at the time. Our analysis shows that the size of the COVID-19 fiscal stimulus packages announced by different governments in 2020 correlates positively with core inflation forecast errors in advanced economies in 2021. While this suggests that forecasters may have insufficiently calibrated their projections in anticipation of the potential effects of the large fiscal intervention, the evidence must be interpreted with caution. First, the positive correlation is driven primarily by Australia, Canada, the UK, and the US—the same economies with particularly tight labor markets since the onset of the pandemic. Second, a deeper look into the data favors

the interpretation that forecast errors are more attributable to misjudging the severity of supply constraints, including in labor markets, than to underestimating the impact of fiscal policy on the rebound in economic activity.

Policy trade-offs

In 2020, too small a dose of fiscal stimulus would have risked prolonged scarring. But doing too much also risked overstimulating the economy and sparking inflation. With inflation too low in advanced economies, perhaps the latter risk was overshadowed as policymakers in the largest of those economies threw their weight behind sizable fiscal interventions.

Forecasters also faced considerable uncertainty. They had to grapple with changed dynamics in goods and labor markets as well as economic data difficult to parse in real time. This complicated the economic outlook in no small measure. The evidence suggests that the large fiscal stimulus should have tilted the balance of risks on inflation to the upside. However, this conclusion hinges on the outcomes for a few, albeit large, economies.

Going forward, the inflation outlook should better integrate the impact of fiscal policy, particularly in an environment where supply constraints amplify the impact of excess demand on inflation. Policymakers could have been advised to reduce their speed somewhat back in 2020 given the danger that was lurking down the road. But this remains a partial assessment. Only by comparing it with the counterfactual scenario of deep scarring can we really gauge the adequacy of the policy choices made back then. [FD](#)

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The Very Model of Modern Monetary Policy





New economic models can help policymakers better understand the effects of their inflation-taming measures

Greg Kaplan, Benjamin Moll, and Giovanni L. Violante



Much about today's inflation is not well understood. Why are some households seriously harmed while others barely feel inflation's impact, and may even benefit? How is the battle against inflation affected by the glut of savings and government payments brought on by the pandemic? How important were pandemic-related supply shocks and the Russian invasion of Ukraine?

The evolving objectives of monetary policy further complicate our understanding of inflation. Monetary policy has long emphasized controlling inflation by stabilizing aggregate demand. But recently, central banks have broadened their objectives to include financial stability, climate and geopolitical risks, and social inclusion.

Macroeconomic models play a key role in helping to navigate this complicated landscape. Models help policymakers interpret empirical observations about the state of the economy, suggest how different policy settings will affect their objectives, and ultimately guide policy decisions. Quantitative models measure the strengths of different forces at play, helping to assess the trade-offs between competing objectives.

But traditional models ignore income and wealth inequalities and assume that what's good for the typical consumer, as defined by the models, must be good for the broader economy.

A newly developed class of quantitative models is particularly suited to guiding central bankers across this new monetary policy territory, in which the wealth and income distributions are a central

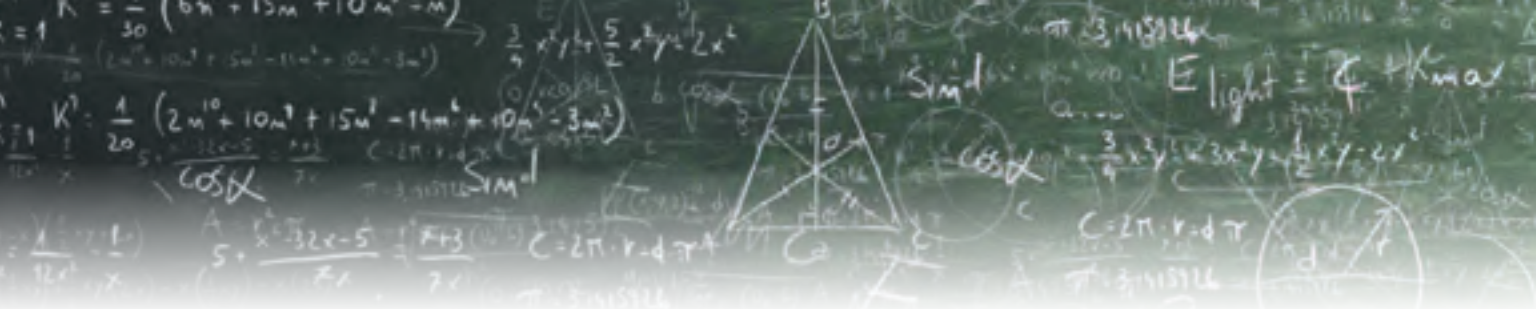
consideration. Known as HANK models, they combine heterogeneous agent models (macroeconomists' workhorse framework for studying income and wealth distributions) with New Keynesian models (the basic framework for studying monetary policy and movements in aggregate demand).

HANK models impart new lessons about redistribution and the heterogeneous effects of monetary policy and shed new light on traditional central bank objectives of inflation control and output stabilization. Here are four broad lessons, and some preliminary thoughts, on how HANK models may illuminate our current high-inflation environment.

LESSON 1 Predicting indirect policy impacts

HANK models have taught us how monetary policy affects household consumption expenditures, both directly and indirectly. Direct channels are those that can be directly ascribed to a change in short-term policy rates, such as consumers' decisions to postpone purchases when interest rates increase. Indirect channels arise through the impact of the policy rate on other interest rates (such as long-term bond and mortgage rates), on asset prices (such as housing and stocks), and on dividends, wages, and government taxes and transfers.

The relative size of indirect versus direct channels depends mainly on the aggregate marginal propensity to consume (MPC), which measures how much of a household's increase in income gets spent and how much is saved. In traditional models, which try to predict the impact



of monetary policy on the typical consumer, the MPC is tiny, and consequently the indirect channels are insignificant. HANK models, instead, are built to be consistent with empirical evidence on consumption and saving behavior. Their aggregate MPC is roughly 10 times larger, and thus the various indirect effects dominate the transmission mechanism.

What does this mean for monetary policy? Through the lens of older models, all a central banker needs to know to predict the aggregate consumption response is an estimate of one parameter, consumer willingness to postpone purchases when interest rates rise (the “inter-temporal elasticity of substitution”). But with HANK models, central banks need much more exacting information about the household side of the economy. They need a full picture of the distribution of MPCs, income sources, and the components of household balance sheets. In addition, the importance of indirect channels means that the transmission of monetary policy is mediated by all those mechanisms that contribute to price formation in goods, inputs, credit, housing, and financial markets. Therefore, central banks need a deep comprehension of market structures and frictions, as well as of institutions that play major roles in these settings, such as local governments, unions, and regulatory bodies.

LESSON 2 Some ships are lifted higher, others are sunk

In the traditional view of monetary policy, “a rising tide raises all ships.” HANK models show this is a fiction.

Many channels of monetary policy have divergent, and sometimes opposing, effects on different households. For example, the direct effects of interest rate changes depend on households’ balance sheets: rate cuts benefit debtors, whose interest payments decrease (such as households with adjustable-rate mortgages) and hurt savers, whose interest income falls. Monetary policy also has heterogeneous effects through its impact on inflation. First, inflation benefits households with lots of nominal debt that is revalued downward. Second, prices rise more for some goods than for others, and different households consume

these goods in unequal proportions. Finally, the indirect effects of monetary policy on household disposable income are uneven because some households are more exposed to fluctuations in aggregate economic activity than others.

In HANK models, these redistributive channels are not only crucial for understanding who wins and who loses in monetary policy but are also at the core of how monetary policy operates, in the sense that redistribution determines its quantitative effect on macroeconomic aggregates. To the extent that the channels outlined above redistribute from households with low MPCs to those with high MPCs (from savers to spenders), the macroeconomic impact of monetary policy is amplified. These redistributive effects will also differ across countries. For example, they would likely be stronger in countries with a high poverty rate or high inequality, thereby also resulting in different monetary transmission between advanced economies and low- and middle-income countries. HANK models force us to let go of the fiction that we can cleanly separate stabilization from redistribution.

LESSON 3 Fiscal footprints matter

Another widespread misconception is the view that monetary policy can be divorced from fiscal policy.

By introducing income and wealth inequality, HANK models reestablish a strong link between the two, showing how monetary policy leaves consequential “fiscal footprints.” When the central bank raises interest rates, the treasury’s borrowing costs increase, and the increase must be funded by raising taxes or lowering expenditures, now or in the future, or through future inflation. In HANK models, the details of how and when the government makes up this fiscal shortfall, and which households bear the burden, have a tremendous influence on the overall effects of interest rate hikes.

The fiscal footprint of monetary policy thus generates additional redistribution, which, in turn, amplifies or dampens the shock depending on whether it shifts resources from savers to spenders, or vice versa. This force keeps central banks and treasuries inseparably intertwined. The more debt the government owes and the shorter-term it is, the bigger the fiscal footprint.

More generally, HANK models are also a natural environment to study the effects of fiscal policy on aggregate productive efficiency, the degree of social insurance, and the extent of redistribution between households.

LESSON 4 The right tool for redistribution

Where does this leave monetary policy in practice?

Studies of optimal monetary and fiscal policy in HANK models agree that the benefits of aggregate stabilization are dwarfed by the gains from directly alleviating hardship. Optimal policies in HANK models almost always favor redistributing toward hand-to-mouth households in downturns.

One may be tempted to read this as endorsement of using monetary policy to share prosperity and mitigate adversities. But monetary policy is a blunt tool for redistribution or insurance. HANK models tell us that fiscal policy is likely better suited for this task because it can be targeted more precisely to those in need of support.

The current bout of inflation

The current inflation episode is a good example to explore where HANK models can be useful for macroeconomic analysis and policy advice.

HANK models show that the impact of a macroeconomic shock on aggregate spending is larger when individual MPCs and individual exposures to the shock are more strongly correlated. In the current economic environment, this means that understanding the redistributive implications of inflation across households is crucial to gauge its aggregate implications. Households consume different bundles of goods and services, making some more sensitive to inflation than others. For example, poor families who spend a larger share of their income on basic goods like energy are especially harmed in this episode. Borrowers gain as the real value of their debt falls, while households with large amounts of cash or liquid savings lose. Workers whose compensation is relatively flexible (for example, because of bonuses and commissions) can limit their loss of purchasing power, whereas workers whose nominal wages are negotiated infrequently, or those paid the minimum wage, will see their real earnings shrink.

The level of household savings, which influences how a change in interest rates affects consumption, is critical. So is the distribution of savings across the population and the correlation with household willingness to spend. For example, excess savings that arose from consumption restrictions due to the pandemic (think of less spending on travel and restaurant meals) are largely held by the well-off and are therefore being spent at a very low rate. Excess savings accumulated from the large government transfer programs in 2020 and 2021 are largely held by low-income households and are being spent much faster. A rapid spending rate sustains aggregate demand and gets in the way of a central bank's efforts to tame inflation.

Finally, a full evaluation of the welfare effects of the current bout of inflation cannot ignore its causes. The jury is still out on the relative importance of supply shocks (due to the COVID-19 pandemic and war in Ukraine), the large fiscal stimulus in 2020 and 2021, and the loose monetary policy in the decade since the most recent recession. Each of these factors had redistributive components and heterogeneous effects that cannot be understood within the shackles of traditional models. Putting HANK models to work will help us understand the full effects of this episode of monetary history. **FD**

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DIVERSE VIEWS

IN MONETARY POLICY

Monetary policy committees need reform to avoid groupthink and ensure sound decision-making

David G. Blanchflower and Andrew T. Levin

Monetary policymaking requires complex real-time judgments. For that reason, in every advanced economy except Canada, monetary policy is delegated to a committee of experts rather than to a single decision-maker. In practice, however, decision-making has been impaired by the pitfalls of groupthink, tokenism, and marginalization of dissenting views. Indeed, central bank governance has not kept up with best practice in fostering the diversity of views by separating the roles of the board chair and chief executive officer (CEO) and by adopting procedures to ensure that every committee member has essentially the same degree of influence and accountability for its decisions.

The pitfalls of groupthink became apparent during the lead-up to the global financial crisis in 2008. The recession started in the US in December 2007 and in Europe in April 2008. At the Bank of England, one author of this article was the lone dissenter warning of the coming crisis (Blanchflower 2008); in contrast, the UK Monetary Policy Committee (MPC) inflation report issued in August 2008 made no reference to recession risks. In September 2008, shortly after the Lehman failure, the US Federal Open Market Committee (FOMC) concluded that upside risks to inflation and downside risks to economic growth remained roughly balanced and voted unanimously to maintain an unchanged policy stance. By early October, however, major central banks engaged in an unprecedented coordinated interest rate cut.

More recently, the global economy has been in uncharted waters since the onset of the COVID-19 pandemic, requiring difficult judgment calls about

the economic outlook and the appropriate path of monetary policy. In that context, the symptoms of groupthink have been even more evident as many central banks have sought to present a *unified front* and *speak with one voice*, with only a tiny proportion of dissenting votes on crucial policy decisions. For example, at the 16 FOMC meetings held during 2021 and 2022, there were only two dissents among the total 174 votes cast. In contrast, dissents were relatively common at the UK MPC meetings in 2022, including several meetings with 6-3 vote tallies.

Good judgment in monetary policymaking will surely remain crucial for the foreseeable future. Economic and financial conditions are likely to evolve rapidly in conjunction with the spread of artificial intelligence, quantum computing, and nanotechnologies. A macroeconomic model fitted to previous data can be useful in some contexts, but judgment and common sense will remain essential for interpreting incoming data, assessing the contours of the economic outlook, and identifying emerging risks to that outlook (Blanchflower 2021).

Central bank governance

Nonetheless, at many central banks, current governance practices are not conducive to fostering a diversity of views among the members of the MPC:

- *The MPC chair* is generally the CEO of the central bank, whom we henceforth refer to as “governor.” The chair serves a crucial role in disseminating information to the committee and in setting the agenda for its meetings. At many central banks, the governor also plays a

key role in determining the appointment of other MPC members.

- *Internal MPC members*, including deputy governors and other central bank staff, may be inclined to defer to the governor's views, especially if the governor is responsible for assessing their performance and determining their prospects for promotion.
- *External MPC members* may have only marginal influence on policy decisions, especially if they serve on a part-time basis and/or have limited access to internal analysis and staff expertise that are subject to the direction of the governor. The Federal Reserve Board of Governors has seven full-time members (including the chair and two vice chairs). However, no member of the Board of Governors has dissented from any FOMC decision since 2005.

Such arrangements are inconsistent with best practices in organizational management. In the public sector, complex regulatory matters are generally determined by an independent agency whose board is responsible for determining its policies and procedures, and the senior executives of such agencies report to the full board, not merely to its chair. For example, the executive board of the Australian Prudential Regulatory Authority directly oversees all its official staff and department chiefs. Similarly, in the judicial system, the most complex and consequential legal cases are decided by a high court of distinguished jurists whose chief justice serves as *first among equals*. In the private sector, the board of a publicly traded corporation has fiduciary responsibility for setting its strategic objectives and overseeing management's implementation of those objectives, and the board chair is generally not the same individual as the CEO. In fact, those governance practices are now followed by nearly all listed corporations in Australia, Canada, and the United Kingdom.

Proposed reforms

The process of selecting MPC members needs to ensure that the committee is composed of a diverse set of experts. Such diversity should encompass demographic characteristics (including gender, race, and ethnicity) as well as educational background and professional expertise. Moreover, the

composition of the MPC should span the distinct geographic regions of the economy rather than reflecting merely the perspective of its primary financial center. The governing council of the European Central Bank includes the presidents of the national central banks, each of whom is appointed by government officials in that country. In contrast, the Bank of England's MPC has comprised mostly longtime residents of the London metropolitan area, with relatively few members from other UK regions.

Every MPC member should serve on a full-time basis. It is practically inconceivable that any supreme court justice or key financial regulator would fill that role on a part-time basis while simultaneously continuing in some other professional occupation. Likewise, having full-time MPC members is essential in light of the importance and complexities of monetary policymaking and will substantially strengthen the committee's ability to act promptly and decisively in the face of rapidly evolving circumstances.

Decision-making procedures are also crucial to fostering individual accountability and mitigating the risk of groupthink. In the past, the phrase *decision-making by consensus* had largely positive connotations. However, modern organizational management recognizes that such practices tend to discourage innovative thinking and marginalize anyone with a different viewpoint (*outside the consensus*). Consequently, every MPC policy decision should be subject to a vote, and all MPC members should be held accountable for their own individual views.

In analyzing the inflationary episodes of the 1970s, one key lesson learned was that monetary policy decisions need to be insulated from political interference. Indeed, that lesson led to the strengthening of the central bank's statutory independence in many jurisdictions—most notably, regulations ensuring that central bank officials cannot be terminated except for malfeasance. Such independence is enhanced by staggering the terms of MPC members, appointing each member to a single nonrenewable term, and ensuring that the appointment process is systematic and transparent rather than relying on the discretion of any single government official (Archer and Levin 2019).

Communicate effectively

MPC members should not be constrained to *speak with one voice* in their public communications; rather, they should be accountable for conveying their own individual views regarding complex judgments on which reasonable experts may disagree. To avoid cacophony, the MPC should follow the standard practice in the judicial system, where a panel of judges conveys each decision by issuing the ruling of the majority together with concurring opinions and dissenting views. Such an approach has a long track record of providing clarity about the rationale for the majority's decision as well as the reasoning behind alternative views. Likewise, this mode of communicating monetary policy decisions can strengthen public confidence that decisions are being made by a diverse team of experts.

The MPC should not focus simply on characterizing the contours of the baseline outlook. Dot plots depict the range of views about the baseline but no information about risks. Fan charts provide a visual impression of the uncertainty surrounding the baseline outlook but do not provide any information about which risks are judged to be most salient.

Thus, in its policy deliberations and communications, the MPC needs to engage in scenario analysis and contingency planning. In particular, policymakers need to identify material risks and consider policy actions that could mitigate such risks or that would likely be taken if such a scenario materializes. This approach is parallel to the stress tests now conducted by bank regulators in many jurisdictions. In effect, the MPC should be engaged in *stress-testing for monetary policy* (Levin 2014; Bordo, Levin, and Levy 2020).

Monetary policy has direct effects on practically everyone: the cost of goods and services paid by consumers, the job opportunities and wages of workers, and the rate of return on the savings of retirees. Consequently, it is not sufficient for policymakers to communicate in technical terms to a limited audience of financial market participants; rather, a spectrum of communication tools is needed to explain these policy decisions to ordinary families and businesses.

Broader implications

These considerations underscore the importance of governance reforms to ensure that monetary

It is not sufficient for policymakers to communicate in technical terms to a limited audience of financial market participants; rather, a spectrum of communication tools is needed to explain these policy decisions.

policy is determined by a diverse team of full-time experts with shared responsibility for making those decisions. Such arrangements should also be incorporated into other aspects of central banking, including macroprudential regulation, provision of emergency liquidity, and payment system oversight. Implementing these reforms will bring central bank governance into alignment with international best practices for public agencies as well as private institutions.

Recent experience has highlighted the dangers of groupthink, which can lead to sudden policy reversals that undermine the central bank's credibility and diminish the effectiveness of monetary policy. Governance reform will be crucial for ensuring the effectiveness of monetary policymaking in facing the inevitable complex and evolving challenges of the coming years and decades. **FD**

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AN UNCONVENTIONAL COLLABORATION

Sometimes monetary and fiscal authorities need to break the rules and act together

Giancarlo Corsetti

Since the conquest of inflation in the 1980s, economic policy in advanced economies has converged toward the model that shapes our thinking today. By targeting low inflation, monetary policy can stabilize economic activity. That frees fiscal authorities of the need to fine-tune policies to support aggregate demand, allowing them to focus on delivering public goods and pursuing redistributive goals. Fiscal policy's contribution to anti-cyclical stabilization should ideally be left to automatic stabilizers, such as unemployment insurance.

Each of these policies is best implemented by independent institutions with clear mandates

concerning their objectives. Explicit coordination across fiscal and monetary authorities confounds responsibilities and tends to misdirect instruments (for example, monetary financing of deficits). This can erode the credibility and hence the effectiveness of a policy. The model has an international dimension as well. By keeping their house in order countries contribute to global stability and welfare.

Why reforms are needed

Recent history has highlighted several “cracks in the vase.” First, in a low-inflation environment, nominal interest rates are low on average, leaving little room for expansionary cuts—what’s known

as the “effective lower bound” constraint. This may prevent monetary authorities from delivering the required countercyclical stimulus. Second, when government debt is high, monetary and regulatory authorities—even if formally independent—may feel pressured to act in favor of budget sustainability by, say, keeping rates too low for too long. This issue is especially relevant when inflationary shocks call for a credible monetary response. Third, when private debt and leverage are high and tangled up in financial markets, high government debt leads to systemic vulnerability to liquidity and solvency crises, which may also weigh excessively on the conduct of monetary and fiscal authorities.

Since the global financial crisis, these “cracks” have already led to changes in the institutional structure of economic policy. In many countries, supervisory, regulatory, and resolution powers in the banking sector are no longer delegated to dedicated institutions but have been returned to central banks. Central banks have expanded their unconventional policies, letting their balance sheets grow very large by purchasing government bonds and other assets. These policies may have significant implications for income and wealth inequality, crossing paths with fiscal policy. Macroprudential policy is now an important component in the design of regulation. Across borders, central banks have set up extensive currency swap lines with their counterparts to address international liquidity.

Economic vulnerability to large shocks has clearly not abated. If anything, economies should strengthen their resilience to deal with climate, energy, demographic, social inclusion, and geopolitical challenges. The question is, Should the economic policy model be reformed further? Most crucially, does stabilization require closer coordination and engagement across decision-making institutions within and across borders? If so, how would this coordination work?

We do not have good answers, but there are important lessons from theory and history that can arguably help structure our thinking.

The (r)evolution of the ‘policy mix’

In classical economic theory, the workings of the policy mix are illustrated by Nobel laureate James Tobin’s “funnel” model: stimulus originates from two taps, M (monetary) and F (fiscal), but the amount that flows into the economy is independent of the relative contributions of M and F.

The same aggregate stimulus (that is, nominal demand) can be generated via loose money and a tight budget—or the opposite. The social value of countercyclical fiscal expansions is highest where policy rates are stuck at their effective lower bound and inflation remains stubbornly below target. Maintaining ample fiscal space to pursue budgets in such situations is therefore a prerequisite for effective stabilization. This is what motivates precautionary budget saving—controlling spending and/or maintaining tax revenues—during the expansionary phase of the cycle.

Recent theory offers a new perspective on how F and M interactions can jointly stabilize an economy at risk of a deflationary spiral. With rates at the effective lower bound, when low demand generates deflation, this translates into high real interest rates, depressing demand further. To avoid this spiral, suppose that the fiscal authority temporarily scales up deficits, committing to neither raise taxes nor cut spending. This means that, all else equal, debt is no longer sustainable and financial markets may start charging a risk premium. Suppose, however, that given such deficits the central bank, again temporarily, commits to guaranteeing the face value of outstanding government liabilities in nominal terms (to rule out outright default risks) and does not react to any change in inflation. In this way the central bank de facto lets the economy run hot with the deficits. Provided these policies are not anticipated by the private sector and/or the maturity of outstanding nominal government liabilities is long enough, the ensuing rise in the price level will reduce the real value of public debt, in line with the present discounted value of primary surpluses.

It is worth reflecting on the complexity of this strategy. Its success rests on the idea that, in special circumstances, the monetary and fiscal authorities may benefit from acting together in ways that are particularly improper in normal circumstances. The budget creates unsustainable debt; the central bank de facto monetizes this debt. For this mix to work, however, the suspension of good-behavior rules must be temporary and limited to exceptional circumstances. Not a walk in the park: the policy can succeed only where constitutional rules are strict and monetary and fiscal institutions are strong and independent. Yet it is worth noting that the policy should also work in reverse: by the same mechanism, running budget surpluses that increase the real value of debt would help reduce inflation.



Restoring moderation

For the reasons explained above, price, financial, and macroeconomic stability places a strict joint requirement on monetary and budget policy. Central banks must pursue price stability in the medium and long term. Fiscal authorities must guarantee debt sustainability, adjusting their policies consistent with the inflation objectives of the central bank: in practice, the government must credibly raise the structural primary surplus—and with sufficient intensity—in response to any rise in the stock of debt.

There is a strong argument for sticking to these policy prescriptions in the current high-inflation, high-debt environment. First, even if unexpected inflation can provide some short-term fiscal relief, giving in to a regime of high and variable inflation eventually leads markets to charge an inflation premium, that is, higher interest rates. Hence it is bound to raise government borrowing costs and worsen the fiscal outlook. Second, since fiscal consolidation (spending cuts or higher taxes) contributes to containing aggregate demand, it makes the central bank's job easier—the monetary contraction can be less severe.

Nonetheless, the explosion of public liabilities during the COVID-19 years challenges the model's resilience. The required adjustment of primary surpluses may be difficult to achieve and sustain on political and economic grounds. Now it may well be that, after the current inflation crisis passes, the world will go back to a secular stagnation scenario, with low real interest rates (r) below the growth rate (g). But this is cold comfort. A negative r minus g would help contain the debt-to-GDP dynamic but would likely come with other negatives, such as low productivity growth. Governments could be pressured to run very large deficits for economic or social reasons; high debt could still result in high risk premiums that systematically destabilize the fiscal outlook.

A test bench for the model

In the aftermath of the global financial crisis, most central banks provided a monetary backstop to public debt. That is, implicitly or explicitly, they stood ready to intervene in the government debt market and prevent increases in borrowing costs based on expectations of rising interest rates. A leading example is the European Central Bank's Outright Monetary Transactions program in 2012.

A successful monetary backstop does not require the central bank to actually purchase government

bonds. It works best as a credible threat to intervene that discourages market speculation (in economic jargon, it prevents investors from coordinating their expectations on a high-interest-rate equilibrium). The credibility of this threat, however, depends on several conditions, including, crucially, cooperation by the fiscal authorities. Why? Because bond purchases expose a central bank to the risk of balance sheet losses. Such losses would force the monetary authorities to fire up the money printing press and thus deviate from their price stability mandate. Unless the Treasury offers contingent fiscal guarantees on the central bank balance sheet (that is, transfers money to the central bank in case of losses), investors may doubt whether the monetary authorities will really take the risk and intervene in the market.

A well-designed monetary backstop can rule out self-fulfilling sovereign risk crises, but stability ultimately depends on fiscal policy. Unless, conditional on the backstop, debt is on a sustainable path, central bank engagement in the government debt market can only destabilize inflation expectations. The economy would remain vulnerable to self-fulfilling expectations of inflation that drive up both nominal and real borrowing costs for the government.

These are major risks facing advanced and some emerging market economies where debt is (predominantly) denominated in their own currencies and central banks are independent. A credible understanding between fiscal and monetary authorities about how to act together to contain vulnerability to expectations-driven crises is an essential building block of a reliable economic policy regime. **FD**

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SHAPING EXPECTATIONS

Surveys show household inflation expectations are less stable than we thought
Michael Weber

Prices reflect what people expect them to be—at least in part. That’s why monetary authorities watch inflation expectations closely. They affect people’s behavior in the present.

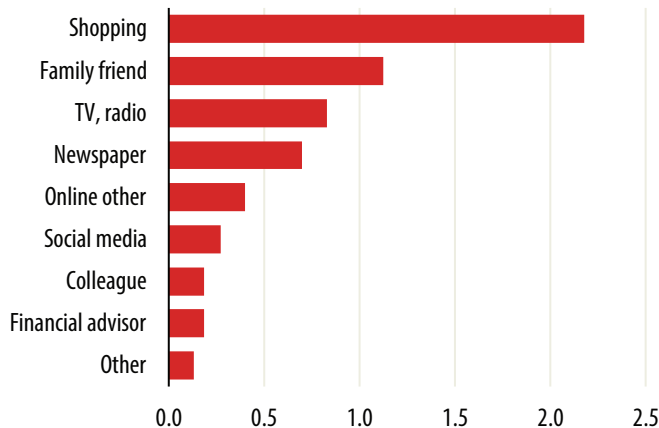
However, very little is understood about how people form expectations. Central banks typically focus on professional forecasters and financial markets, not households, because economists tend to assume that the inflation expectations of households are well anchored (they don’t change

in response to short-term developments). Yet, when we asked 25,000 Americans in 2018 what they thought the average inflation rate in the US was, fewer than 20 percent of survey participants answered, “about 2 percent.” Almost 40 percent reported a number higher than 10 percent (Coibion, Gorodnichenko, and Weber 2022).

Not only do most households not have well-anchored expectations, they also tend to *overestimate* future inflation. Using data from the New York Federal Reserve survey of consumer

Inflation expectations

People base their outlook for inflation largely on price trends while shopping.
(sources of information for individuals' inflation expectations)



Source: Calculations using data from the Chicago Booth Expectations and Attitudes Survey (D'Acunto and others 2021).

Note: This chart shows the average ranks. Respondents must select the three most relevant sources that come to mind (from a list). The first source is assigned a value of 3, the second a value of 2, the third a value of 1, and all other sources a value of 0. Respondents may list fewer than three (or no) sources.

expectations we find that between 2011 and 2018 men on average expected inflation to rise to about 4 percent over 12 months, while women expected a rate of 6 percent (a difference that holds regardless of financial literacy). Inflation in fact averaged *below* 2 percent (D'Acunto, Malmendier, and Weber 2021).

This suggests there might be a “gender gap” in inflation expectations. We spoke to both male and female household heads who record their grocery purchases to confirm whether that’s the case. On average, women expect higher inflation than men, but that holds only for “traditional households,” where women do all the grocery shopping. In families where the male household head occasionally shops, the gap disappears.

To better understand how exposure to price changes shapes expectations, we fielded another survey in which we asked participants directly which sources of information were most important to them when gauging inflation (D'Acunto and others 2021). It turns out that households rank grocery shopping as the most relevant source of information (see chart).

To test this further, we leveraged data from the 50,000 households that participate in the NielsenIQ Homescan panel. With information on what families buy, where they shop, and what they pay, we crafted a household-specific price index and found that families hit hardest by inflation expected an inflation rate 0.7 percentage point higher than other households, on average.

Not all price changes matter equally, however. If they occur in categories that are important to, or used more regularly by, consumers—such as milk and eggs—we see immediate increases in overall inflation expectations, both in times of low and high inflation. Households also tend to pay more attention to price hikes than cuts. These factors explain why families updated their inflation expectations in the summer of 2021, when most central banks continued to preach the gospel of temporary inflationary pressures—prices rose in the categories consumers cared about most. More important, these findings imply that even if central banks were successful in curbing inflation in the near term, household inflation expectations would take time to come back down.

Keep it simple

There’s another factor that contributes to household inflation expectations: messaging. More complex policies are more difficult to explain and therefore less likely to shape expectations. In D'Acunto and others (2020), we compare the impact of preannounced future consumption tax increases with forward guidance (a statement that signals the likely future path of monetary policy). Through the lens of the New Keynesian model, both policies should have the same effect on inflation expectations. But they differ quite substantially in their complexity and required understanding of economics.

Data confirms this. Using the German version of the European Commission consumer survey, we find that Germans altered their inflation expectations and spending plans only after the November 2005 announcement by then-Chancellor Angela Merkel that consumption taxes would increase by 3 percentage points in January 2007. By contrast, the announcement in the summer of 2013 by then-European Central Bank (ECB) President Mario Draghi that interest rates would stay at

current levels or fall (the first time the ECB explicitly used forward guidance as a policy tool) had no impact at all on household inflation expectations or spending patterns in Germany.

Given these findings, we conducted a series of surveys on how central banks could communicate more effectively. For example, we asked thousands of individuals in Finland (D’Acunto and others 2020) questions about their income change expectations and sociodemographic characteristics and then split the sample into three groups: a control group that did not receive any additional information and two treatment groups. We gave these groups truthful information about policy actions taken by the ECB in the spring of 2020, using tweets from the official Twitter account of Olli Rehn, governor of the Finnish central bank. But the content varied between groups. One group received a “target” communication, that is, a message that specifies the aim of a policy without detailing which measures the central bank would implement to achieve it. Another group received information about the “instrument,” the specific policy that was implemented to achieve the goal. All survey participants were again asked the same questions. Our results show that only the target communication effectively improves individuals’ income expectations.

In Coibion, Gorodnichenko, and Weber (2022), we focus on the medium of the message. We find that using simple terms like “current inflation,” the “inflation target,” or “inflation forecast” is most effective in managing individuals’ inflation expectations. But the source matters. Newspaper coverage of the Federal Reserve, though simpler to read, has less impact on expectations than official Federal Open Market Committee (FOMC) statements. This is because of how households in the US rate the credibility of different news sources. When it comes to information about the economy, newspapers on average rank low, whereas social media and Twitter rank high. These findings suggest that central banks cannot rely on the media alone to transmit monetary policy announcements to households.

The identity of the sender of the message also influences the effectiveness of monetary policy communications. In D’Acunto, Fuster, and Weber (2021), we find that even when the message and forecasts remain constant, women and

Not only do most households not have well-anchored expectations, they also tend to *overestimate* future inflation.

Black survey respondents are substantially more likely to revise their expectations when the message comes from either Mary Daly or Raphael Bostic, a female and a Black male regional Fed president, rather than from Thomas Barkin, a white male regional Fed president. Emphasis on the female or Black male presence on the FOMC increases women and Black survey participants’ trust in the Federal Reserve and piques their desire for information about monetary policy.

Taking stock

Taken together, these results show that individuals in general do not have well-anchored inflation expectations. People focus on the price changes of relevant individual goods and pay more attention to price increases than cuts.

Central banks could manage the expectations of households if they use simple messages. But the medium that transmits the message and the identity of the messenger matter. Reaching ordinary families, which typically do not follow official releases, remains the biggest challenge for central banks. Creative and clear communications could fill the gap. [FD](#)

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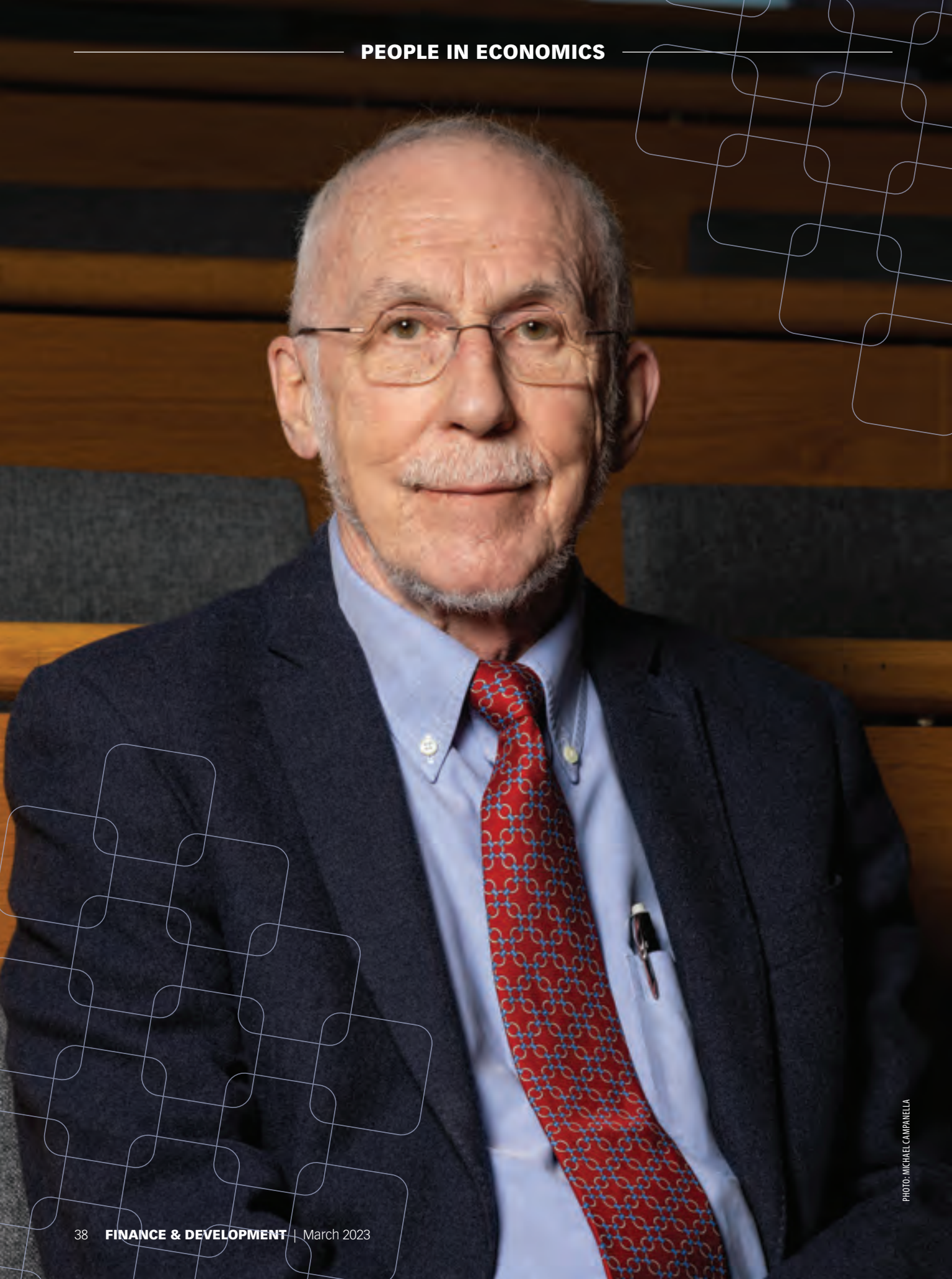


PHOTO: MICHAEL CAMPANELLA

CENTRAL BANKING REVOLUTIONARY

*Prakash Loungani profiles former Swedish central banker
Lars E.O. Svensson, a leader of the inflation-targeting revolution*

These are challenging times for central bankers. The 2021 upsurge in inflation took many central banks by surprise. “We now understand better how little we understand about inflation,” Federal Reserve Chairman Jay Powell declared last year.

The challenges would have been far more difficult but for significant enhancements in central banking over the past three decades—specifically, advances in a framework known as inflation targeting. While bringing the changes about has been a team effort, the person as responsible as anyone is Lars E.O. Svensson, a former deputy governor of Sweden’s Riksbank who is currently an affiliated professor at the prestigious Stockholm School of Economics.

“Lars has provided great insights into critical issues in monetary policy,” Ben Bernanke, the former Fed chairman and 2022 Nobel laureate, told F&D. “His creativity and independence of thought are truly impressive.”

Under inflation targeting, central banks explicitly commit to a goal for long-term inflation and work to achieve it by moving the policy interest rates, which they control. Raising interest rates, as central banks are doing now for instance, tends to cool inflation by curtailing spending on housing and other interest-sensitive goods. Svensson was an early convert to inflation targeting. He has since been a vocal advocate, nudging central bankers to continuously improve the framework, particularly by being open with the public about the path of future policy to achieve the inflation target.

The enhancements to monetary management advocated by Svensson and others helped the world’s central bankers keep the financial crisis of 2007 from turning into another Great Depression. In his role as deputy governor, Svensson helped the Riksbank successfully manage the early phases of the crisis.

Getting there

This was not the path Svensson envisioned his life taking. In 1971, he completed an MS in physics and applied mathematics

at the Royal Institute of Technology in Stockholm. During a “sabbatical” to decide what to do next, he enrolled in some undergraduate economic history courses. One of his professors advised him to switch to economics, pointing out that job prospects in Sweden were good for economists. “It was one of the best pieces of advice I received in my life,” Svensson told F&D.

He went on to get his doctorate in economics in Stockholm, also spending a year at the Massachusetts Institute of Technology. His professors there included Nobel laureates Paul Samuelson, Robert Solow, and Peter Diamond; former Fed Vice Chairman Stan Fischer; and Google chief economist Hal Varian. Among his fellow students were Nobel laureate Paul Krugman, former IMF Chief Economist Olivier Blanchard, former European Central Bank President and former Italian Prime Minister Mario Draghi, and former Fed Governor Frederic Mishkin. “That year gave me a network that has helped me greatly over the years,” Svensson says.

His first job was at the Institute for International Economic Studies at Stockholm University. In the 1970s and 1980s, he focused largely on economic theory and international economics. His friend and longtime colleague and collaborator, Torsten Persson, describes working with Svensson at the time. “In his work, he sticks to his guns unless someone comes up with better intuition and a formal model,” Persson says. “And he takes his hobbies seriously too—we were avid sailors together, and then he turned to rock climbing with great passion.”

Inflation targeting

In the 1990s, Svensson turned his attention squarely to monetary economics, his interest triggered in part by his role as an external advisor to the Riksbank. It was a turbulent time. The economy was adrift after the krona’s exchange rate peg to the ECU collapsed in 1992, despite the central bank’s heroic attempt to defend it by raising rates to 500 percent. Svensson and a small group of internal and external economists were

given two weeks to advise the Riksbank on a new monetary framework.

Luckily, a prototype was at hand. In 1989–90, the Reserve Bank of New Zealand had adopted inflation targeting, which was successful in bringing inflation down sharply. The Bank of Canada had also turned to inflation targeting in 1991 and successfully reduced inflation to 2 percent. In a report to the Riksbank, Svensson argued that there were “strong reasons” for monetary policy to target “a narrow range for the inflation rate.” In early 1993, the Riksbank adopted inflation targeting with a 2 percent long-term goal to be achieved by 1995—a goal the Riksbank undershot in the years that followed.

In the late 1990s and the 2000s, Svensson devoted himself to showcasing the success of inflation targeting and developing improvements. By 2001, he had moved to the prestigious economics department at Princeton University, where a number of professors—among them Bernanke, Krugman, former Fed Vice Chairman Alan Blinder, and influential economist Michael Woodford—were engaged in a similar pursuit. Scott Sumner, a noted monetary theorist at George Mason University, dubbed them the “Princeton School,” which he credits with bringing about changes in central banking that were crucial in managing the Great Recession.

One of Svensson’s early contributions was to urge that central banks implement inflation targeting in a flexible manner, recognizing their dual responsibility to keep inflation near the target and the economy close to full employment. These days, Svensson told F&D, “hardly any central banks are ‘inflation nutters,’” a term coined by former Bank of England Governor Mervyn King to refer to central banks obsessed with inflation at the expense of employment.

Inflation forecast targeting

An even more critical contribution of Svensson’s has been nudging central banks toward inflation forecast targeting. Under inflation targeting, central banks were already growing more transparent about announcing and explaining their latest policy decision. Svensson argued that central banks needed to go further. Because the impact of monetary policy actions unfolded with a long lag, it was important for central banks to tell markets and the public what their plan was for the future.

In a celebrated 1997 paper, Svensson recommended that central banks select a path for current

and future rates so that the central bank’s own forecasts for inflation and employment “looked good” for getting the economy over time to the target inflation rate and to full employment. “Let’s say you have a 2 percent inflation target,” explains George Mason University’s Sumner. “You set policies such that you’re also forecasting [that you’ll get to] 2 percent inflation.... This is just common sense. Why wouldn’t you set [the path of future] policy rates so that you expected the policy to be successful?”

And yet, before Svensson’s work, central banks were prone to assuming a path for policy rates that would lead them to undershoot or overshoot their targets. “It was as if a ship captain heading across the Atlantic had set the steering wheel at a position expected to result in the ship being 200 miles off course when it reached the other side of the ocean,” Sumner wrote.

Some central banks, such as the Norges Bank, the Riksbank, and the Czech National Bank, started publishing their interest rate paths, in line with Svensson’s recommendations and following the New Zealand central bank’s lead. Many others adopted practices that went considerably in that direction. Svensson’s work helped bring about a more forward-looking approach to monetary policy and a willingness to innovate in times of crisis, says Robert Tetlow, senior advisor at the Fed and a collaborator of Svensson’s.

“Lars has always managed to be preternaturally calm but hard-nosed, polite but forthright,” when advising central bankers, Tetlow told F&D. Philip Turner, a former senior official at the Bank for International Settlements (BIS), recalls that “at a Bank of Japan conference in 2000, Svensson was one of the first” to urge radical monetary policy actions. “Japan has already lost a decade to economic stagnation and deflation,” Svensson bluntly said in a paper for the conference. “With continued bad policy, it may lose another.”

Going negative

The enhancements in monetary management that Svensson and others advocated paid off during the Great Recession. Central banks quickly pivoted to taking actions that most likely helped stave off another Great Depression. They cut interest rates sharply, making it clear that they were not inflation nutters and took the goal of full employment seriously. They let markets know that they expected to keep interest rates

“low for long”—giving forward guidance very much in keeping with the spirit of Svensson’s advice about transparency.

So deep was the Great Recession, however, that central banks faced a quandary: What more could they do once they’d already lowered policy rates to zero and signaled that they planned to keep them there for a while? Svensson advocated moving to negative interest rates, levying fees on deposits to push banks into making loans to encourage spending.

“The most vocal advocate of the policy is Deputy Governor Lars Svensson, a world-renowned expert on monetary policy theory and a close associate of Ben Bernanke,” the *Financial Times* wrote at the time. The Danish central bank took the leap into negative interest rates in 2012, followed by the European Central Bank and several others.

While still controversial, negative interest rates have expanded the tool kit of central banks, some economists maintain. Former IMF Chief Economist Ken Rogoff says that “if done correctly ... negative rates would operate similarly to normal monetary policy, boosting aggregate demand and raising employment” in future crises.

Different and separate

Before the financial crisis began, the Riksbank had managed to attract Svensson back from Princeton in 2007 to serve as a deputy governor. By this time, the Swedish central bank was already following Svensson’s advice to publish and justify its interest rate path. And by July 2009, the Riksbank had already cut rates to 0.25 percent.

But Svensson was unable to persuade his colleagues to cut the rate to zero and then to consider negative interest rates if needed. In fact, in 2010 the Riksbank started raising rates. Svensson opposed the move, arguing that the inflation forecast was still far below target and unemployment remained high. He was also opposed to “leaning against the wind.” That was the idea that interest rates should be raised to counter risks to financial stability posed by rising house prices and mortgage debt levels, for instance, even if macro considerations such as inflation and output dictated otherwise.

After a couple of years of polite dissent, Svensson finally left the Riksbank at the end of his term in mid-2013. He forthrightly announced that he had “not managed to get support for a monetary policy” he preferred. Svensson’s former Princeton colleagues rushed to his defense. Krugman called

the 2010–2011 rate hikes “possibly the most gratuitous policy error” of the global financial crisis, saying they had “no obvious justification in terms of macro indicators.”

Svensson’s judgment proved right: by 2014 it became clear that the rate hikes weren’t taming housing price inflation and were leading to deflation and economic weakening. The Riksbank was forced to cut rates to zero. And then in 2015 the Riksbank ventured into negative interest rate territory, an experiment deemed successful by a subsequent IMF working paper by Rima Turk.

Following his departure from the Riksbank, Svensson devoted himself to making the case for why monetary policy should concern itself with inflation and output goals, leaving financial stability considerations to macroprudential policy. The two policies are “different and best conducted separately,” he has written. To bolster his case, Svensson made several presentations at the IMF and elsewhere, demonstrating that the benefits of raising interest rates to enhance financial stability by lowering the odds of a financial crisis were small and uncertain. In contrast, the costs in terms of higher unemployment and deflationary pressures were high and far more certain.

Svensson’s cost-benefit calculations were featured in a 2015 IMF staff paper on “Monetary Policy and Financial Stability,” which concluded that in most cases the costs are higher than the benefits. Turner, the former BIS official, told F&D that “by rigorous logic and using empirical magnitudes most favorable to the case he opposed, Svensson decisively won this debate.”

Always active

At 75, Svensson remains active in research, with his most recent work devoted to showing that commonly used indicators of housing price overvaluation—such as the house-price-to-income ratio—are misleading and can lead to poor policy actions by financial agencies. He has also challenged the common view that households cut back more on their spending in a crisis when they have higher levels of outstanding mortgage debt. Turner is happy to see Svensson continue to challenge received wisdom: “Wherever he goes, economists are forced to raise their game.” **FD**

PRAKASH LOUNGANI is assistant director of the IMF’s Independent Evaluation Office.



PHOTO: ALEX KOLOMOISKY

Embrace Debate

Karnit Flug stresses the importance of accountability and transparency in central banking

SOON AFTER HER APPOINTMENT as governor of the Bank of Israel in 2013, Karnit Flug walked back from a meeting with the government on economic policy and wondered if she should make her remarks public. But before reaching the central bank, she saw that her comments had already been reported by the press. “I understood then there is no such thing as private remarks at meetings of the government,” she recalls. “It’s always better to be in control of the narrative than have your remarks taken out of context to serve someone else’s agenda.”

Central banks around the world are coming under unprecedented scrutiny as they seek to

fend off inflation and global recession. Flug talked to F&D’s Nicholas Owen about the importance of central bank accountability and transparency, the policy successes and failures of the past, and her own personal progression from research economist to the first female governor of Israel’s central bank.

F&D: The last major spike in inflation in Israel was in the 1980s. Do you see parallels with today?

KF: The macroeconomic circumstances and the institutional structures have changed drastically since then, so it’s hard to draw parallels. At the time of our peak inflation in 1984, when prices had increased by 445 percent, we had a huge public deficit of about 15 percent of GDP. Debt was 280 percent of GDP. There was no central bank independence. As part of the stabilization program, there was a change in the Bank of Israel law, known as the “no printing clause,” which prevented the central bank from financing government deficits. So the circumstances are completely different today.

However, some people in the Knesset, our parliament, are pressuring the central bank to introduce new initiatives, like exempting single homeowners from increases in mortgage interest rates. I hope that these do not advance. Even if they don’t, the discussions may lead to self-restraint that makes monetary policy less effective. And even if they don’t change monetary policy, they may affect expectations, and that in itself may make monetary policy less effective. These kinds of initiatives are not helpful.

F&D: Your reforms as governor were controversial. What’s your advice for today’s central bankers at odds with policymakers?

KF: When I was governor, inflation and interest rates were very low, so there was no controversy around monetary policy. However, the Bank of Israel’s governor is also economic advisor to the government, based on the original 1954 central bank law. It’s not a typical role, and it does create friction with the political system, specifically with the Ministry of Finance. According to tradition, this advice is very public: it’s part of the discussion with the government but also contributes to public discourse.

My main advice is to be transparent and professional in your analysis. And you must also be active in public debate on the basis of high-quality research.

F&D: Is it realistic these days for central banks to remain largely unaccountable? Should there be more debate about the costs of tightening monetary policy as the world heads for a painful recession?

KF: There are different forms of accountability. Accountability can be advanced by the requirement for transparency and by expert evaluations. And lively public debate is part of accountability. But what you're really asking is whether central banks should be independent in applying monetary policy in order to reach an inflation goal. On this point I think politicians still have an inflation bias. This led to high inflation in the 1970s and '80s. Politicians believed that you could tolerate a little more inflation in order to have a little more economic activity and employment. But actually it proved very hard to control. Higher inflation can start a spiral of inflation expectations, resulting in even higher inflation. This basic inflation bias is still there. I don't think you can exploit this trade-off to engineer just slightly higher inflation for higher activity. Once inflation starts accelerating, it's very hard to control. Then the costs—including welfare costs—can be very high.

F&D: Did central banks get it wrong in the past? We're told we must trust central banks today as they raise rates. But central banks pumped money into economies through low interest rates and quantitative easing. Aren't we paying the price for this today?

KF: I think the response of monetary policy to the global financial crisis was broadly correct and actually saved the world from a much deeper and longer recession. The leadership of Ben Bernanke and the lessons he learned from the past were extremely important. In some places, monetary policy was accompanied by macroprudential policies aimed at mitigating the effect of very low interest rates on some asset markets. In Israel, we introduced a set of restrictions in the mortgage market to make sure excessive risk did not build up.

After COVID-19, a massive response was needed again, in both monetary and fiscal expansion. Here I think the withdrawal of the extreme fiscal and monetary support came too late. The recovery proved very strong, but despite this some governments continued with extremely expansionary fiscal policy while monetary policy remained extremely accommodative. And when the very strong increase in demand was met with supply constraints—because

of factory closures in China and elsewhere, and then because of the war in the Ukraine—inflation started rising rapidly. There was a delay in the realization that demand was playing an important role, and it wasn't just supply shocks. And that's partly why inflation climbed rapidly and necessitated a faster withdrawal of the expansion that has still not been achieved everywhere.

F&D: I'm curious about your own journey from being a research-focused economist to a central banker who's forced to make difficult policy decisions daily. Has your experience changed how you approach economic research?

KF: My background, especially managing the research department at the Bank of Israel for 10 years, helped me use research effectively when making policy decisions. It helped me understand what questions models can answer—but also the limitations of using models to get answers. A research background can help assess where you can use models in the decision-making process and where you need to rely on basic theory or simple analysis of the most recent data.

F&D: You were Israel's first female central bank governor. Was that important for you and the country?

KF: When I was appointed, I was more aware of the fact that I was the first governor from the ranks, someone who started as a young economist at the bank and rose all the way to the top. Before me, all the governors were well-known economists appointed from the outside. I was focused on the big shoes I needed to fill.

At the Bank of Israel, I didn't sense that being a woman interfered with my career advancement at any point. But I did realize early on that it was important—there was a lot in the press about being first female governor, and I was always asked about it when I met with students. I realized that I served as some kind of role model.

I was surprised by how few women governors there were when I attended governors' meetings at the IMF or the Bank for International Settlements. Sometimes being the only woman in a room with 35 or 40 male governors was a little intimidating. But with time, I got used to it. And as time went by there were also more women in the room. **FD**

This interview has been edited for length and clarity.



EMERGING MARKET PERSPECTIVES

A Road Well Traveled

In an era of high inflation, emerging markets have lessons to share

Lesetja Kganyago

In the ongoing public dialogue about economic policy, the challenges faced by advanced economies usually dominate those of the developing world. In monetary policy, for instance, the defining issues of the past decade were the zero lower bound on interest rates and inflation that was too low. But neither of these problems affected emerging markets much. Our challenges had much more to do with textbook issues, such as keeping inflation from drifting above our targets, resisting demands for lower interest rates to lift short-term economic growth, and financing unsustainable fiscal positions.

Now, as the economic conversation in advanced economies changes to address higher inflation, emerging markets have something to offer. Emerging market central banks have ample

experience dealing with these conditions, including the political pressure that often follows policy tightening. Three areas of experience stand out.

The first has to do with managing supply shocks. These are as hard to explain from a monetary policy perspective as they are routine. In my 12 years on the South African Reserve Bank's Monetary Policy Committee (MPC) I have spent more time trying to gauge the impact of supply shocks, and communicating how we distinguish between transitory and persistent effects, than I have managing demand-side pressures. Many emerging markets have had similar experiences.

Part of the problem is that even with moderate rates of inflation, price and wage setters learn to track inflation and to index their prices. This means that if central banks don't respond to shocks in a timely way, price pressures expand and inflation expectations shift. This leaves policy further behind the curve, so that temporary shocks end up having lasting effects.

For many years, the optimal response to supply shocks was the advanced economy textbook version: Don't respond, because the shock will dissipate. But emerging market economies exhibit more indexation and less tolerance for real income losses. Inflation today is more likely to propagate into the future. For that reason, policy responses to supply shocks are required more often. Many emerging market economies have introduced robust inflation-targeting frameworks to better shape inflation expectations, and these have generally worked well, creating policy flexibility.

This need for a more distinctive emerging market approach may be grounded in generally higher inflation rates, which give people a strong incentive to track the consumer price index rather than assuming price stability. Our inflation rates matter for day-to-day decision-making by households and firms.

Fiscal sustainability

The second area is related to our mandate. It is often assumed that fiscal and monetary policy don't overlap. This is more abstract than real. Monetary policy can be distorted by fiscal policy, as any emerging market policymaker will tell you. The increase in concerns about fiscal dominance bears this out, not least as major central banks increasingly focus on the legacy of quantitative easing and other policies that boosted their holdings of government debt. Because of balance sheet concerns, it is even more critical that central bank mandates remain simple and direct.

To achieve good outcomes, countries need a broader macroeconomic strategy that delivers other key outcomes, especially fiscal sustainability. Without such a strategy, central banks cannot, by themselves, ensure a growth-friendly environment.

South Africa is a case in point. In the 1990s, the newly elected democratic government instituted a series of reforms that underpinned the longest period of unbroken growth in South Africa's history. The three main building blocks of these reforms were a floating exchange rate, which liberated the country from costly and unsuccessful exchange rate interventions; inflation targeting, which led to lower interest rates and more stable prices; and perhaps most important, fiscal restraint.

Together, these reforms helped steer the country through the emerging market crises of 1998 and 2001. But because they involved discipline and caution, they were not widely popular. In turn, this contributed to a more spendthrift approach over the past decade, with much less concern about either the volume or the quality of spending. A severe macroeconomic deterioration ensued, along with some of the lowest growth rates in South Africa's history.

Monetary policy held the line, but monetary policy is not everything. Again, other emerging markets have had similar experiences.

A balancing act

This brings me to the third area of emerging market experience: how to maneuver when making policy and, specifically, how to strike a balance between acting resolutely and remaining open to new ideas and information.

In advanced economies, particularly in recent years, groupthink has perhaps been a major policy problem. But I am not sure that is the emerging market experience. In the case of South African monetary policy, we have seldom had unanimous agreement on whether to raise rates. Even in the few cases when all MPC members agreed to tighten, we disagreed on how much to raise rates. And in our broader society, I can assure you that we suffer no lack of diversity of opinion.

My experience suggests that what emerging market policymakers really need is divergent views on tactical questions but consensus on the grand strategy.

In South Africa, our central bank mandate, laid out in the constitution, is to protect the value of the currency in the interest of balanced and sustainable growth. Much as I admire open discussion, it isn't

helpful to question and criticize the role of the central bank. Diversity of opinion is important, but not everything needs to be pulled apart.

As advanced economies face inflation dynamics that more closely resemble patterns in emerging markets, this distinction—between the things that require conviction and those that need debate—could be helpful. Monetary policymakers are making tough decisions, with inadequate information and high stakes. Critics will ignore the complexity and just assert that central banks can't see the facts. Central banks should reiterate their strategic goals—clearly, patiently, and backed by good evidence. What consensus you can muster should be nurtured, not feared as a sign of groupthink. By contrast, when it comes to tactics, you need to be open and willing to change your mind.

Monetary policy can be distorted by fiscal policy, as any emerging market policymaker will tell you.

The year 2023 could well be when the trends of 2022 reverse and some advanced economies return to lower inflation. If so, this will offer emerging markets some welcome respite. But we should not take anything for granted. Unfortunately, it is less clear that more benign inflation trends in advanced economies will ease economic conditions for emerging market and developing economies. A renewed commitment to addressing high debt levels is needed, keeping in mind the cost of the transition to low-carbon economies. Emerging market economies must make better use of the financing they can attract to re-achieve higher economic growth with more sustainable capital.

With lower economic growth and undiminished need for financial resources, the high-inflation environment in much of the world is likely to persist. Better coordination between sustainable fiscal policy and monetary policy would create important synergies, reducing the impact of supply shocks, keeping the cost of financing governments low, and taking inflation off the list of concerns of households and firms throughout the emerging world. **FD**

LESETJA KGANYAGO is the governor of the South African Reserve Bank.



EMERGING MARKET PERSPECTIVES

The Case for Intervention

Under the right conditions, foreign exchange intervention can reduce unwarranted currency volatility

Sukudhew Singh

When central banks in the world's large economies slashed interest rates after 2008, smaller emerging market economies, especially in Asia, faced a flood of capital that caused their currencies to appreciate and interest rates to fall. Now that major central banks are rapidly tightening policy, financial flows have reversed: emerging market currencies are depreciating, inflation is increasing, and central banks are under pressure to raise interest rates even as growth stalls.

Global economic and financial integration has weakened the national transmission of monetary policy and made international factors a stronger driver of domestic prices and economic conditions. Free-floating currencies are ideal for most emerging market economies, but external developments can soon throw exchange rates out of kilter with economic fundamentals. Policy autonomy is guaranteed only if economies are strong enough to withstand volatile exchange rates and significant misalignment.

Intervention in the foreign exchange market allows policymakers to moderate the pace and

extent of currency appreciation or depreciation. It can also counter pressure on the exchange rate by reducing one-sided expectations about the currency's future value. A deeper financial system helps with intermediation but can be a double-edged sword: increased availability of financial instruments and greater liquidity may attract more capital inflows. Open emerging market economies with large globally integrated financial systems must hold more foreign exchange reserves and intervene more aggressively to avoid excessive volatility. Successful intervention is not guaranteed, however.

Successful intervention

Several factors make intervention more likely to work. For brevity, I will focus here on those that determine success when defending a depreciating currency.

- **Level of foreign exchange reserves:** Foreign reserves are not costless, but they are invaluable when the exchange rate comes under unwarranted depreciation pressure. They are even more important for countries with linked exchange rates (such as Hong Kong Special Administrative Region) or exchange-rate-based monetary frameworks (Singapore).
- **Strength of domestic economy and financial system:** The strength of these fundamentals provides the central bank with greater flexibility in terms of how much to intervene and let the exchange rate move. It allows more effective intervention because the central bank does not have to engage actively in liquidity operations that undermine its foreign exchange interventions (see the fourth bullet).
- **Intended exchange rate that is “defensible”** in that it reflects economic fundamentals: Pressure on the currency due to sustained outflows on the trade and current accounts of the balance of payments often reflects a failure to create a diversified, competitive, and globally integrated economy. Intervention will not help. If weak domestic fundamentals such as a large fiscal deficit, excessive monetary growth, or high inflation are affecting the exchange rate, then intervention would also be futile. Unless there is a determined effort to deal with these weaknesses, they will continue to exert a negative influence on the currency.
- **Actions by central banks to manage the liquidity consequences of intervention:** When the central bank intervenes to defend the exchange rate, it decreases the supply of the local currency

and increases the supply of foreign currencies. If other factors remain the same, this should support the local currency's exchange rate. The decrease in local currency liquidity pushes up domestic interest rates, which provides additional support to the exchange rate. However, the central bank often wants to protect the domestic economy from higher interest rates. The government is also likely to be unhappy with the higher cost of financing public debt. So the central bank usually injects liquidity back into the banking system, keeping local interest rates relatively stable but undermining its efforts to support the currency. If a weaker currency is causing higher domestic inflation, these liquidity operations weaken not only the exchange rate but domestic price stability as well. This makes monetary policy and the intervention operations less effective.

- **Openness of the capital account:** Open emerging market economies vary in their degree of openness, particularly when it comes to the capital account. An open capital account can facilitate two-way flows under normal circumstances, but large one-way flows during times of instability can overwhelm the central bank's ability to stabilize the currency. Yet it is crucial to avoid large swings in the exchange rate because of the ease with which short-term financial flows by residents and nonresidents can occur in response to exchange rate expectations.
- **Private sector foreign currency exposure and how much it is hedged:** In emerging market economies, the central bank must track this exposure carefully and even regulate it to ensure that it poses no risk to national economic and financial stability. Without these precautions, pressure on the exchange rate from panicked buying of foreign exchange can negate interventions to support the currency.

Adequacy of reserves

The level of reserves is important not only for intervention but also for instilling confidence in a country's ability to pay its way in the world. Maintaining a sufficiently large stock of reserves is an important policy consideration.

One way to reduce demand on the central bank's reserves is to **develop the local foreign currency market**, providing more opportunity for private intermediation of foreign exchange flows and for new hedging instruments. This should reduce the

frequency of central bank intervention. A common problem in times of uncertainty is that foreign currency dries up due to excess demand or hoarding. Ultimately, the central bank's reserves must again provide the safety mechanism for the market.

The sustainability of reserves also **depends on the sources** from which they are built. Reserves built from current account surpluses and flows of foreign direct investment are generally more reliable than reserves from short-term portfolio flows. Reserves should be built during good times. Central banks in emerging market economies are often vulnerable to political pressure that diverts existing reserves to other purposes. This leaves countries vulnerable and limits central banks' capacity to intervene when they need to.

There are **emergency sources of reserves**. Funding from the IMF is an option, but it is an option of last resort for many countries, especially in Asia. Countries also have bilateral swap arrangements to provide emergency liquidity in dollars or local currencies. Among the ASEAN+3 economies, a \$240 billion resource-pooling arrangement known as the Chiang Mai Initiative Multilateralisation Agreement provides liquidity support to regional economies in times of external stress. However, it has not diminished member economies' desire to build their own reserves for various reasons, including policy independence.

When reserves are running low, or capital flows are so large that intervention is unlikely to succeed, more direct intervention is needed to restore stability. Policymakers can rightfully consider **measures to restrict financial flows**. Many factors that make for successful intervention will also come into play in determining the success of capital controls. Policymakers who impose capital controls must also be cautious in timing their removal—doing so prematurely can be as risky as keeping them in place too long.

Done right, capital controls can act as a circuit breaker to preserve foreign reserves and provide policymakers with temporary breathing room for reforms to reduce vulnerabilities and support the economy, without the worry of external instability. Confidence in the local economy is a key fundamental that must be restored through credible policies, after which the controls can be gradually relaxed and removed. **FD**

SUKUDHEW SINGH was a deputy governor at Bank Negara Malaysia from 2013 to 2017.



EMERGING MARKET PERSPECTIVES

Sticking to the Target

An inflation-targeting regime remains the best path through challenging times

Leonardo Villar

Since first adopted in 1990, inflation targeting has been generally successful as a monetary policy strategy. Most countries that adopted it have reduced inflation and inflation volatility. In the case of several emerging market economies, inflation targeting has also allowed them to turn procyclical monetary policies, which tend to amplify economic upswings and deepen downturns, into countercyclical action, contributing to GDP growth stabilization.

My own country, Colombia, is a good example. We introduced inflation targeting in 1999 after three decades of stable but stubbornly high inflation. Before its introduction, the central bank had

to cope with complex mechanisms of indexation, which perpetuated inflation, and was forced to use the exchange rate as the nominal anchor of the economy amid relatively high inflation and a volatile balance of payments. Under these conditions, the central bank had little choice but to respond to external cycles and shocks with procyclical monetary policies to stabilize the exchange rate.

Game changer

Once Colombia adopted inflation targeting, countercyclical monetary policy responses became feasible for the first time. The authorities began allowing the exchange rate to fluctuate, thus acting as the first line of defense against external cycles and shocks. This was evident in the monetary responses to the global financial crisis in 2007–09 and the COVID-19 shock in 2020. During both episodes, the authorities allowed the domestic currency to depreciate while relying on the credibility of the inflation target, rather than the exchange rate, as the main nominal anchor of the economy.

The inflation-targeting strategy also proved successful in dealing with the strong inflationary shock we faced in 2014–16 when Colombia endured a simultaneous drop in terms of trade after the oil price collapse, a severe drought, and other supply shocks. As a result, annual nominal depreciation reached 68 percent in 2015, and inflation went from about 3 percent in mid-2014 to 9 percent in July 2016, only to fall back to the 3 percent target years later without a major sacrifice in output. The credibility of monetary policy and the relative stability of long-term inflation expectations were instrumental in making this adjustment successfully.

Post-COVID challenges

Emerging market economies with inflation targeting are facing extremely difficult challenges in the current post-COVID-19 environment. The inflation-targeting regime relies heavily on the authorities' credibility when it comes to keeping inflation close to the target, and this has not happened since 2021.

Again, Colombia is a good example. Inflation rose from less than 2 percent in 2020 to 13.1 percent in 2022, the highest level since we adopted inflation targeting. This increase was driven largely by food prices, which rose at a yearly rate of nearly 28 percent in 2022 in response to both domestic and international supply shocks.

A strong aggregate demand recovery also pushed inflation upward. Colombia's GDP grew by more than 10 percent in 2021 and 8 percent in 2022, and its widening current account deficit is close to a historical record, despite the beneficial terms of trade experienced in 2022. Excess demand has also led to an upward trend in core inflation, which, excluding food and government-regulated prices, went from 2.5 percent in 2021 to 9.5 percent in 2022.

A sharp depreciation of the domestic currency has also played a role in the inflation trends. By the end of 2022, the Colombian peso had depreciated 38 percent compared with early 2021. This depreciation is higher than in most other countries in Latin America and has gone hand in hand with a deterioration in investors' country-risk perception during the past two years, when fiscal deficits were much larger than those of our regional peers.

Different indexation mechanisms are also affecting inflation. A key driver is the annual increase in the minimum wage that takes place at the beginning of each year based on observed past inflation. In this respect, 2022 and 2023 have been peculiar, as the minimum wage was raised by 10 percent and 16 percent, respectively, well above headline inflation. These hikes in the minimum wage have contributed to keeping inflation high through their impact on production costs and the typical wage-price spiral—with prices increasing as a result of higher wages, which subsequently rise to compensate for the increase in prices.

Communication and transparency

Under these challenging conditions, monetary policy has experienced unprecedented tightening. So far, Colombia's Banco de la República has raised the policy interest rate from 1.75 percent in September 2021 to 12.75 percent in January this year.

The succession of shocks to inflation since 2021 and the ensuing forced reevaluation of the monetary policy response have also posed a challenge for central bank communications. The large and protracted inflationary impact of those shocks requires a long period of convergence to the inflation target that needs to be explained to the public. Too fast a convergence can be very costly in terms of output and employment, but too long a convergence risks de-anchoring inflation expectations.

The central bank has publicly stated that the tightening process is not over and that it is committed to bringing inflation down to its 3 percent target over a two-year period with an acceptable deviation of 1 percentage point. Fortunately, inflation expectations are broadly consistent with our desired convergence path.

Inflation targeting has helped Colombia confront economic shocks in ways that were not possible before.

Credibility anchor

Inflation is expected to decrease fast by historical standards but will probably be above its target rate for the longest period since the inflation-targeting regime was introduced. This will make it harder to maintain the credibility of the target as the main nominal anchor of the economy.

Clearly, the challenges for monetary policy will be particularly difficult during 2023 and 2024. We are expecting a sharp deceleration of economic activity that would shrink GDP growth to a meager 0.2 percent in 2023 as a result of tighter global financial conditions, slower growth in our trading partners, and a much-needed contractionary domestic monetary policy that guarantees inflation convergence toward the central bank's goal.

These challenges are not an argument against the inflation-targeting strategy. Rather, they reinforce the importance we attach to strengthening its anchoring role and the need to pursue a contractionary monetary policy at the current juncture that demonstrates the central bank's commitment to an explicit and credible inflation target.

Inflation targeting, coupled with a floating exchange rate, has served Colombia's economy well. It has helped the country confront economic shocks in ways that were not possible before. We believe that enhancing its credibility remains the best path to overcoming these challenging times. [FD](#)

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On Inflation's Front Line

ECB's Philip R. Lane discusses the importance of bringing euro area inflation back to target

THE EUROPEAN CENTRAL BANK (ECB) is on the front line of the fight against inflation. Policymakers have raised interest rates to 15-year highs to bring euro area inflation, which peaked at more than 10 percent in October, back to the 2 percent target. Inflation is expected to slow this year, but monetary policy will continue to attract scrutiny as the continent's economic growth slows, consumers continue to struggle with the cost-of-living crisis, and governments seek to finance large debts in a new era of higher interest rates.

In an interview with F&D's Nicholas Owen, the ECB's chief economist, Philip R. Lane, calls on governments to start rolling back fiscal support to consumers as the energy crisis triggered by Russia's invasion of Ukraine becomes less acute. He discusses the importance of steering inflation expectations back to target, the challenges involved in shrinking the central bank's balance sheet, and the lessons that can be learned from the monetary moves of the past year.

F&D: After rising to highs not seen for 40 years, inflation in Europe is showing signs of slowing. How important is it to the euro area's economic

outlook that the authorities succeed in returning inflation expectations to 2 percent?

PL: The worst-case scenario for a central bank is that a prolonged phase of high inflation causes the public to lose confidence that price stability (in practice, a 2 percent inflation target) will be maintained over the medium term. If the public comes to believe that inflation will remain high on an indefinite basis, this would be baked into price and wage setting and become self-sustaining. So it is essential that monetary policy is clearly set to make sure that inflation returns in a timely manner to our 2 percent target. This has been especially important over the last year, given that monetary policy had been previously geared for several years to address a persistent below-target inflation pattern. So we have been moving in a sustained manner away from a super-accommodative monetary stance toward a stance that is sufficiently restrictive to make sure inflation returns to target and thereby keeps longer-term inflation expectations anchored.

F&D: What lessons can policymakers learn from the inflation shock? Most economists expected price pressures to be only transitory. Do we need to do monetary policy differently?

PL: This episode will no doubt be studied for many years to come, so my answer to this question is highly provisional. At the same time, I think it should be recognized that the twin forces of the pandemic and the war-related surge in energy

As the energy crisis becomes less acute, it is important to start rolling back fiscal support measures.

prices constituted extraordinarily large and asymmetrical shocks that were bound to generate an initial phase of high inflation. It is certainly true that it warrants ongoing examination to assess whether the ECB and other central banks could have done a better job in assessing the size and duration of this inflation shock. We should always strive to learn from such episodes and be open to internal and external critiques. Over the last year, central banks have reversed out of quantitative easing programs and cumulatively raised interest rates quite a bit over a relatively short period. We will also learn a lot about the conduct of monetary policy and the effectiveness of monetary policy over the coming months.

F&D: Do you think ECB policies to shrink its balance sheet will pose problems for governments in the euro area with large financing requirements? Some heavily indebted governments have grown accustomed to selling bonds effortlessly to the ECB.

PL: These programs have always had the primary focus on ensuring that the long end of the yield curve contributed to the monetary easing that the overall economy needed to avoid prolonged below-target inflation: these were not programs to directly finance governments. While it is too early to draw conclusive lessons from our experience in moving away from quantitative easing and now embarking on quantitative tightening, we have seen in recent months that the normalization of interest rates has meant that many institutional investors (both European and global) have high demand to purchase euro area government bonds.

In relation to fiscal policy, we are quite clear that, in line with the EU's economic governance framework, fiscal policies should be oriented towards making our economy more productive and gradually bringing down high public debt.

Of course, there is an important role for fiscal policy to shield the most vulnerable in the economy

from the energy price shock. There is not only a moral but also an economic imperative to that. But we are also emphatic that fiscal support measures to shield the economy from the impact of high energy prices should be temporary, targeted, and tailored to preserving incentives to consume less energy. In particular, as the energy crisis becomes less acute, it is important to now start rolling these measures back promptly in line with the fall in energy prices and in a concerted manner.

F&D: Rising interest rates are piling pressure on households across Europe. Do central banks have any role to play in lessening that pressure, or is it something that should be left entirely to governments and fiscal policy?

PL: All households benefit from medium-term price stability. The poor are the hardest hit by persistent inflation. Accordingly, it is in our collective interest that the ECB maintains a primary focus on the timely return of inflation to our 2 percent target. We should be efficient in our monetary policy: delivering our target, while minimizing the costs in terms of output and employment. In analyzing the transmission of monetary policy, we closely examine the impact of interest rate movements on households: not only the direct effects—which, at any point in time, vary across borrowers and savers and across different age groups—but also the indirect effects through the impact of monetary policy on output and employment. These vary between those who work in the sectors most sensitive to interest rate movements (such as construction and consumer durables) and those who work in less cyclical industries. Governments should always protect the most vulnerable in society, but fiscal measures that directly offset the impact of interest rate movements can be problematic in terms of the efficiency of monetary policy and may be less effective than other income policies. **FD**

FORCES AT PLAY

Advanced economies are contending with several major long-term structural changes that will affect the way monetary policy is conducted. These ongoing changes inevitably affect the natural level of interest rates—at which inflation and output are at their optimum—and how monetary policy is transmitted.

The green transition

Annual clean energy investment will need to reach **\$4 trillion** by 2030 to get to net zero emissions by 2050.¹

The green transition will require a substantial **reallocation of resources** away from fossil fuels toward renewable sources of energy—mainly wind and solar. The transition will likely require a **large increase in investment**, possibly encouraged by some form of subsidy. Increased investment demand will tend to increase the natural level of interest rates, so the green transition will probably require central banks to support a **higher policy rate**.



Several slow-moving economic trends affect monetary policy over the long term.

Remote work

Remote work has increased by **44 percent** over the past 5 years.²

Remote work shapes inflationary conditions through two channels: the **supply of labor and its productivity**. Remote work tends to increase the amount of working hours households can supply: workers are willing to take a pay cut when allowed to work a given job remotely. However, certain jobs cannot be performed as efficiently in a remote setting, which reduces productivity per worker-hour. The effect of these two forces tends to increase firms' marginal costs (and therefore generate inflationary pressure) if the reduction in productivity outweighs the increased supply of labor. The productivity channel also affects **households' demand**: lower productivity leads workers to anticipate lower future wages, which causes them to reduce their demand for goods and creates a countervailing downward force on prices. How they play out will shape demands on monetary policy.



De-globalization

Trade openness peaked at about **60 percent** in 2008 and has fallen since then.³

De-globalization tends to impoverish countries by creating barriers to trade and encouraging reallocation of resources toward less-efficient industries. A drop in output can **reduce government revenues** and cause **fiscally driven** inflation if the government does reduce spending and/or increase taxes. **Supply and demand** will add inflationary forces, the strength of which will depend on whether a country is primarily an importer or exporter. Importing countries will find it more difficult to purchase goods from abroad, which creates inflationary pressure at home. Exporters, by contrast, will anticipate lower future income from foreign sales, causing household demand to fall.



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Demographics

The number of people in the world over **60 years old will double** by 2050.⁴

Demographic change is likely to create **demand, supply, and political pressures**. An aging population will lower demand as individuals save for retirement, which will temporarily reduce the natural level of interest rates. On the supply side, declining labor force participation will reduce potential output and result in slower income growth that incentivizes individuals to save for the future. After the transition to an older population is complete, the saving pressure may abate: the retired tend to consume from savings at a high rate, and labor force participation will stabilize. In the long run, then, it is not clear that demographic change will lead to permanently lower real interest rates or deflation—or what the effect will be on monetary policy.



Central bank digital currency

More than **100 countries** are currently exploring CBDC.⁵

The advent of central bank digital currency (CBDC), part of the ongoing digital currency revolution, will allow central banks to directly set the rate of interest paid by CBDC, which will permit them to **transmit monetary policy directly to households**, not indirectly through banks as they do now. Banks do not fully transmit rate changes (especially increases) to households. So an increase in the policy rate set by central banks doesn't lead to a one-for-one increase in deposit rates.

The introduction of CBDC will also be critical in shaping the central bank's role in the economy. If central banks issue digital currency directly to households, they will likely have to **expand their balance sheets permanently**. The central bank could decide to invest its enlarged portfolio in government bonds, providing strong support to fiscal policy, or it could lend to the private sector, driving investment in specific industries. Central banks will have to manage their reputation for independence carefully, because any investment decisions could be politically fraught.

¹ International Energy Agency <https://www.iea.org/reports/net-zero-by-2050>

² NorthOne <https://codesubmit.io/blog/remote-work-statistics/>

³ IMF Staff Discussion Note 2023/001 <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2023/01/11/>

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⁴ World Health Organization <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

⁵ The Atlantic Council <https://www.atlanticcouncil.org/cbdctracker/>



GOLD,

SILVER,

AND MONETARY STABILITY

An almost-forgotten 19th century episode shows that international cooperation is essential for a stable global monetary system

Johannes Wiegand

The year 1873 marks a turning point in monetary history. In July, the new German Empire Reichstag replaced an array of silver-based currencies with the gold mark. In September, the Paris mint limited silver coinage, ending the double gold-silver monetary standard France had maintained for decades. And earlier that year, the US Congress legislated the phasing out of the temporary paper currency of the Civil War years, to replace it with a gold dollar once

the government resumed specie (coin) payments (which happened in 1879).

With the United Kingdom already on gold, by the end of the 1870s all the world's leading industrial nations used gold currencies. Silver—which, until 1873, had been on an equal footing with gold—became a secondary currency metal used mostly by periphery countries.

The monetary impact was stark. Between 1873 and the end of the decade, silver depreciated by

some 20 percent relative to gold, after having traded at stable exchange values for 70 years. Gold countries experienced severe deflation that lasted until the early 1890s. The real repercussions are more difficult to assess because comprehensive national accounts for the 1870s are lacking, but indicators such as industrial production point to a severe and long recession in several countries—in Germany, for example, the post-1873 years are known as the *Gründerkrise* (a period of crisis).

Global bimetalism

Nineteenth century currency systems operated very differently from today's monetary system. Money was tied to precious metals (bullion). Coins (specie) were minted from bullion, and paper money could be exchanged for bullion at guaranteed exchange values.

In the early 19th century, most countries tied their currencies to silver—except the UK and, beginning in the mid-1830s, the US, which were on gold. France tied its currency to *both* gold and silver: per an 1803 Napoleonic law, the French mint paid 200 francs for a kilo of silver and 3,100 francs for a kilo of gold. France's double price guarantee established global bimetalism: it ensured not only a stable exchange value of 15½ between silver and gold but also quasi-fixed exchange rates between all countries on gold and silver currencies.

Global bimetalism worked as long as both gold and silver coins circulated in France. France would then operate as a global monetary stabilizer: through a mechanism called Gresham's law, changes in the global quantities of gold and silver translated primarily into changes in France's currency composition, while exchange rates between gold and silver currencies remained stable. Moreover, bimetalism was better at stabilizing prices than a regime based on only one currency metal, as supply shocks to gold and silver partially offset one another.

Global bimetalism operated seamlessly until about 1850. Then, large gold discoveries in California and Australia increased global gold production by a factor of 5. Per Gresham's law, the share of gold in French specie surged—from less than 30 percent around 1850 to more than 85 (!) percent in the mid-1860s.

It gradually dawned on currency experts that this was a dangerous development for bimetalism. If

Gresham's law

"Gresham's law" states that, in fixed exchange rate systems, "bad money drives out good." In the case of bimetalism, it worked as follows: the mint fixed the relative price of two currency metals. If the supply of one metal increased—for example, because of new discoveries or currency reforms that demonetized that metal—its market price would tend to fall, generating an incentive to bring bullion (raw metal) to the mint and convert it into specie (coins) to take advantage of the price guarantee. Conversely, the other, now scarcer (and therefore relatively more valuable), metal would be withdrawn from circulation. Changes in bullion supply therefore shifted the composition of specie in favor of the cheaper, "inflationary" currency metal, as long as the mint's price guarantee was effective. This monetary principle is named for Sir Thomas Gresham, financial agent of Queen Elizabeth I.

gold crowded out silver entirely from French specie, France would become a de facto gold country. The bond between gold and silver currencies would break, and the world would split into gold and silver blocs, triggering potentially violent movements in exchange rates and prices.

Concerns ran especially high in Germany. Most German states used silver currencies. Without the bimetallic bond, Germany would find itself on a different monetary regime than the world's leading economies—the UK, the US, and France—and would trade with them on floating exchange rates. Economists and businesses feared this would demote Germany to a periphery economy. And not everyone in France was happy with bimetalism either, especially with the fluctuations in specie composition that France had to endure.

Bimetalism in the 1860s

Given these strains, how did bimetalism survive the 1860s? In 1867, Emperor Napoleon III hosted an international monetary conference in Paris to seek alternatives. It issued a nonbinding recommendation for a global currency system based on gold. France itself seemed to be leading the world away from bimetalism.

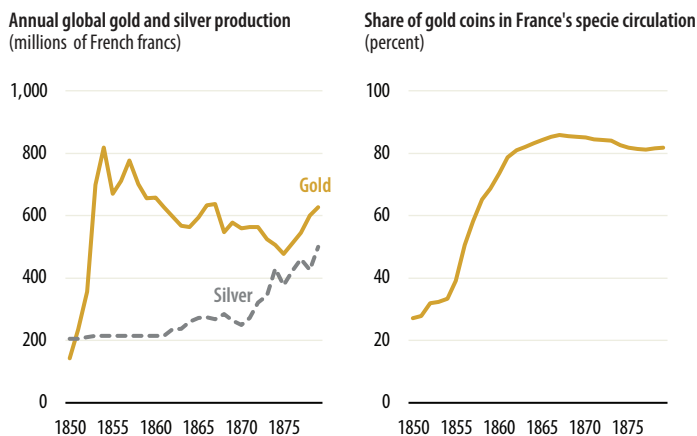
Making a recommendation was one thing; however, implementing it was another—not least for France itself. Moving to gold required getting rid of France's silver coins. But silver would devalue once the bimetallic bond was dissolved and silver demonetized—by abandoning bimetalism, France would impose a loss on itself (Flandreau 1996).

In Germany, a growing sea of voices demanded replacement of silver with gold or a bimetallic currency. But the German states could shed silver coins



Silver and gold

Per Gresham's law, changes in gold and silver supply affected France's currency composition, while exchange rates between gold and silver currency remained stable.



Source: Wiegand (2019).

only if someone exchanged them for gold—and in the bimetallic system, this “someone” could only be France. According to Gresham’s law, German reform would trigger a large increase in French silver circulation. Would France tolerate this? Or would it cut the bimetallic bond to avoid getting swamped with silver—and bring about the very outcome German pundits feared: monetary isolation? German policymakers were left guessing and did not advance currency reform beyond preliminary steps (Wiegand 2022).

In short, in the 1860s there was no easy way out of bimetalism. France both controlled and was hostage to the bimetallic system: it could deter other countries from changing the system’s parameters, but it could not end bimetalism itself without incurring significant costs. Hence bimetalism prevailed. Markets placed remarkable trust in the arrangement and treated gold- and silver-based assets as near-perfect substitutes (Flandreau and Oosterlinck 2012).

Germany’s reform

The setting changed fundamentally in 1870. A Prussia-led German coalition won the Franco-Prussian war, triggering Napoleon III’s downfall, the emergence of the Third Republic, and the formation of the German Empire. Prussian troops occupied Paris and would withdraw only once France paid a large indemnity (more than 20 percent

of French GDP), which was payable in silver, among other things. France could not abandon bimetalism now, as demonetizing silver would undermine its capacity to pay and regain sovereignty.

This meant policymakers in Berlin had free rein to pursue currency reform—but only until France settled the indemnity. Hence Germany acted quickly, even hastily. In July 1871, the Berlin mint suspended silver coinage. A few weeks later, the federal government began buying gold in London, and in early December, the Reichstag passed a law authorizing gold coinage. The federal and regional governments brought the new gold coins into circulation simply by spending the indemnity (without withdrawing silver coins first). Hence specie circulation surged, unleashing a large (and short-lived) fiscal-monetary stimulus. The Reichstag formally adopted the gold standard in July 1873.

One may wonder why Germany adopted a gold and not a bimetallic currency—prior to 1870, bimetalism had enjoyed considerable support among German economists. But Germany’s specie circulation was too small to sustain global bimetalism on its own: it needed France to maintain the bimetallic bond, both before and after settling the indemnity—otherwise Germany would be thrown back on silver. Monetary cooperation had already failed in the 1860s; however, it seemed even less probable in the aftermath of armed conflict.

Hence Germany moved all the way to gold: it was the only choice that avoided monetary isolation regardless of France’s decisions (Wiegand 2019). And Germany was not alone: the Scandinavian countries and the Netherlands also used the window of opportunity to switch from silver to gold.

Breaking bimetalism

On September 5, 1873, France settled the indemnity’s last installment—two bond issuances of hitherto unknown volume (the *Rente Thiers*) had allowed much earlier payment than originally anticipated. The next day the Paris mint limited silver coinage, and therefore broke the bimetallic bond.

This move was unexpected. France could have sustained bimetalism even after the German, Dutch, and Scandinavian currency reforms if it had accepted a higher share of silver coins. Why then expose itself and the world to monetary instability? The measure appears so self-destructive that

Flandreau (1996) suspected revanchism as the motive. Ending bimetallism harmed France—but it harmed Germany even more, as Germany sat on an even larger pile of silver that could now be sold only at a loss.

An intriguing interpretation has been proposed by Velde (2002). France could have upheld bimetallism in the early 1870s—but its absorptive capacity was not unlimited. Beginning in the early 1870s, discoveries in America’s West boosted global silver production (see chart)—and according to Gresham’s law, this silver would eventually find its way into French specie, crowding out gold. And what if even more countries abandoned silver currencies and sought to unload obsolete silver on France?

The tide had turned: it was now France that had to fear monetary isolation on silver should bimetallism end. Faced with this prospect, pulling the plug early while France’s silver holdings were still small—and Germany’s large—seemed better than waiting and ending up with a large silver pile for which the rest of the advanced world had no use.

Consistent with Velde’s interpretation, France did not end bimetallism abruptly. Instead, the Treasury stressed that limits on silver coinage were temporary and could be lifted once excessive silver inflows stopped: a weakly concealed invitation to Germany to reconsider its reform. Only when these efforts failed did bimetallism’s demise become irreversible. In early 1875, markets concluded that the bimetallic bond was gone, and in 1876, France suspended silver coinage entirely. The classic gold standard was born.

Aftermath

It is almost forgotten that the gold standard’s early years were rough. In the new gold bloc, persistent deflation drove up real interest rates that weighed on profits and investment. Distributional conflicts between debtors and creditors erupted and poisoned the political atmosphere. It soon dawned on the public that the monetary decisions of the early 1870s had something to do with this. Bimetallic lobby groups formed and demanded the resurrection of the old monetary regime. International conferences in 1878, 1881, and 1892 discussed the issue, but as in the 1860s, they failed to come up with results.

Another inflection point arrived in July 1886, when a prospector in South Africa’s Witwatersrand

region found a rock that contained traces of gold. It turned out to be part of an enormous gold deposit. The ensuing gold boom dwarfed even the earlier Australia and California gold discoveries. The gold fed into the money supply, allowing liquidity-strapped economies to reflate rapidly. As deflation came to an end, debt concerns weighed less heavily.

The belle époque began, a period of rapid economic, technological, and cultural development that lasted until World War I. Prosperity boosted the gold standard’s reputation: tying a currency to gold became synonymous with sound monetary management. Hence, after World War I, policymakers sought to restore the gold standard—tying the “golden fetters” that would later amplify the Great Depression.

Lessons

Bimetallism operated smoothly as long as the financial environment was stable and only one country—France—needed to sustain it. When the going got tougher, maintaining bimetallism would have been beneficial, but it would have required international cooperation—and cooperation failed miserably.

While today’s monetary system operates very differently from that of the 19th century, monetary stability remains a global public good, which requires international cooperation. Monetary stability shares this basic feature with all global public goods, from securing peace and stability to safeguarding the world’s climate. **FD**

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DATA BY PEOPLE, *for People*

India's approach to data governance, which neither favors excessive state intervention nor is exclusively laissez-faire, encourages innovation

Siddharth Tiwari, Frank Packer, and Rahul Matthan

Innovations in India's digital public infrastructure ecosystem have not only enhanced basic societal functions, they have also provided a pathway to democratize data and return to the people control over their own data.

For many centuries, public and private services were based on people- and paper-based processes. These included the delivery of services and ensuring compliance with the prevailing laws and regulations. Digital infrastructure replaces people and paper with code, bringing greater efficiency. Operating around the clock at low cost, digital infrastructure can be scaled up to reach a large number of people, achieving in just a few years gains that would otherwise have taken several decades. Likewise, digital public infrastructure delivers society-wide services across the population, including to marginalized communities.

The advent of the digital age has also led to an explosion in the volume of data, its availability, and how it is processed. Globally, a handful of service providers such as Facebook, Google, and

Apple control extremely large amounts of highly valuable consumer data that they aggregate and exploit for their gain. This asymmetric access to data makes it hard for people to leverage their personal data for their own benefit.

This is especially relevant because public digital infrastructure can greatly enhance data-driven access to finance. It is globally documented that, absent tangible collateral, a large majority of the adult population cannot borrow from the financial system. Information captured from people's everyday online activities creates "information capital" that reduces transaction costs, information asymmetry between borrowers and lenders, and reliance on physical collateral. When individuals have access to and control over their data, they are able to generate information capital.

Many regulators have attempted to address the problem of private companies' data hoarding by enacting policies to curb data misuse, but these policies have also prevented the utilization of data, especially for the benefit of the broader population.

However, within India's digital financial architecture framework, privacy safeguards are part of the technical design of the digital public infrastructure, rather than externally imposed by law and regulatory policy. Data's benefits are universally available without infringing on individual rights. This approach to data governance neither favors excessive state intervention nor is it exclusively laissez-faire. Such a combination of private and public features encourages better regulation and innovation.

Digital first

India's digital public infrastructure has grown rapidly since 2009 for three main reasons. First, the strategic vision has been the design of the digital public infrastructure as rails, with each rail addressing a specific need. Second, technological innovation across several of these rails has created a powerful integrated stack of applications, often referred to as the India Stack, that can be scaled up to serve the diverse population—over a billion people in 29 states and 22 languages. Third, digital public infrastructure has been implemented across multiple sectors.

Unlike other countries, where the digital infrastructure was developed largely by private companies, India put together a unique model of digital public infrastructure, publicly designed and controlled but privately implemented.

This approach has enabled the public sector to move away from responsibility for end-to-end delivery—for example, in the payment, education, and health sectors. The rapid increase in digitalization across India has led to deeper penetration as well as harmonization of platforms across various government services. Now, in the context of public-private partnerships, the public sector focuses on the regulatory framework, while the private sector handles consumer interface and service delivery. The approach has also reduced inclusion gaps.


India's digital public infrastructure, built within the regulatory system, has enabled its citizens to achieve access to the formal economy through a verifiable digital identity; participation in the nationwide marketplace through a fast payment system; and secure welfare gains in finance, health, and commerce through data empowerment and data sharing.

Verifiable identity: Verifiable identity, or an ID certifying that "I am who I say I am," is a key element of any economy and its level of financial inclusion. In 2008, only 1 in 8 Indians had a verifiable identity. In 2009, India rolled out a verifiable ID, widely known as *Aadhaar*, as a part of its digital public infrastructure that eventually reached over a billion people, including those who could not read or write.

This digital ID boosted financial inclusion. In less than 10 years, the share of adults with a bank account rose from 25 percent to more than 80 percent. Given that financial inclusion goes hand in hand with economic development and GDP per capita, one rough estimate suggests that if India had relied solely on traditional growth processes, it would have taken nearly 50 years to achieve the same rise in inclusion.

A fast payment system: For consumers, a fast payment system—yet another piece of the digital public infrastructure—is a secure and more convenient channel for money transfer and bill payment. For businesses, it offers an efficient way to manage sales and inventory and reduce overhead. Government gets a leak-free channel for welfare and other payments to citizens, including hard-to-reach target groups.

Efficient payment systems reduce the need for a cash economy and in turn support higher economic growth. India's fast-payment system, called the Unified Payments Interface (UPI) and run by the nonprofit National Payments Corporation of India, exemplifies how the regulator (for example, the central bank) and the regulated (for example, commercial banks) can together run a payment



system as a voluntary digital public infrastructure that operates around the clock. UPI is interoperable, in that it allows online payment services, such as PhonePe, Paytm, and Google Pay, to connect to its service, and the cost of running the payments rail is borne by participating commercial banks.

This system offers all the network benefits of large technology systems, such as instant transfers and near-zero charges, without the monopolistic disadvantages. At the end of 2022, UPI was processing nearly 8 billion transactions a month, about 70 percent more than the previous year. In fact, digital commerce rails augmented by digital payment systems blunted the worst ravages of the country's COVID-19 lockdowns.

Broad applicability: The pandemic has demonstrated the power of digital public infrastructure—beyond finance. Successful system-wide solutions include vaccine development and distribution that have saved lives, e-commerce rails that have protected jobs and livelihoods, and the delivery of education digitally, which has minimized the loss of schooling.

In the health care sector, for example, digital rails allow data sharing across the medical ecosystem so that hospitals, diagnostic laboratories, and research institutions alike can benefit from real-time data exchange—with patients' consent and for their benefit. Readily available comprehensive patient records that include symptoms, medical histories, and other data points allow doctors to provide more accurate diagnosis and treatment.

In the skills sector, digital public rails offer trusted frameworks through which skill credentials can be exchanged and relied on anywhere and everywhere. In a world where people are increasingly mobile, the ability to certify their own skill credentials can result in significant empowerment.

In the education sector, digital rails complement existing practices and offer tools that enable teachers, learners, and educational institutions to achieve learning goals on a national scale. They facilitate new means of learning and evaluation that can be disseminated in a way that delivers personalized learning outcomes.

Data empowerment architecture

Digital infrastructures hold vast amounts of data. Even though laws restrict how much data can be collected, how it can be used, and how long it can be retained, consumers are often unable to access

their data since it is stored in proprietary silos and in incompatible formats. Given the amount of data involved, as well as the need to keep it secure and transaction costs low, any system that restores control to consumers and businesses must be digital.

India's Data Empowerment and Protection Architecture (DEPA) offers a techno-legal solution that allows individuals to operationalize their data rights through a consent-based data-sharing system. It provides a high level of security and has low transaction costs (at about \$0.07 a data pull), which are borne by the consumers that seek the service. This architecture combines digital public infrastructure and private-market-led innovation. Data sharing takes place only with detailed consent that specifies which data are requested, how long they will be retained, and who will process them. The protocols also give people and businesses, or data subjects, the ability to revoke their consent, audit data-sharing transactions, and impose data security requirements on the data-sharing process.

Here's how a consent-based data-sharing rail in the financial sector works in practice. The chart shows how digital public infrastructure allows the provision of credit, insurance, and wealth management services through authorized data sharing in a system that complies with well-established data privacy principles.

In this series of transactions, the consent manager is aware of the identity of both the data users and providers, but blind to the content of the data that they are transferring. Data users (providers), on the other hand, are aware of the content of the data but blind to the identity of the data provider (user). Through the consent manager, data flows are separated from consent flows, thereby ensuring the efficient transfer of data while respecting privacy concerns. For example, though a bank may in response to a request from a customer share data about that customer's spending history for a credit application, it remains unaware of the purpose of the request and the identity of the entity receiving the data.

Since this system went live in India's financial sector last year, some 1.1 billion individual accounts on the system can now reap benefits from the value of their data. Individual experiences show that the system has significantly reduced the time it takes to access credit—from months to days. For example, a small business that ran into severe liquidity difficulties when its expansion plans became impractical

following the onset of the COVID-19 pandemic was able to raise financing and avoid bankruptcy thanks to its readily shareable financial data.

However, India's journey has not been without challenges. Absent a national data protection law, the country's data consent framework was developed under the regulatory supervision of the central bank, rather than a regulator specializing in data protection. India's new draft law specifically references the technical and regulatory mandate of the consent manager, which is central to the DEPA framework, and when enacted will play a critical role in shaping DEPA's regulatory and supervisory foundations.

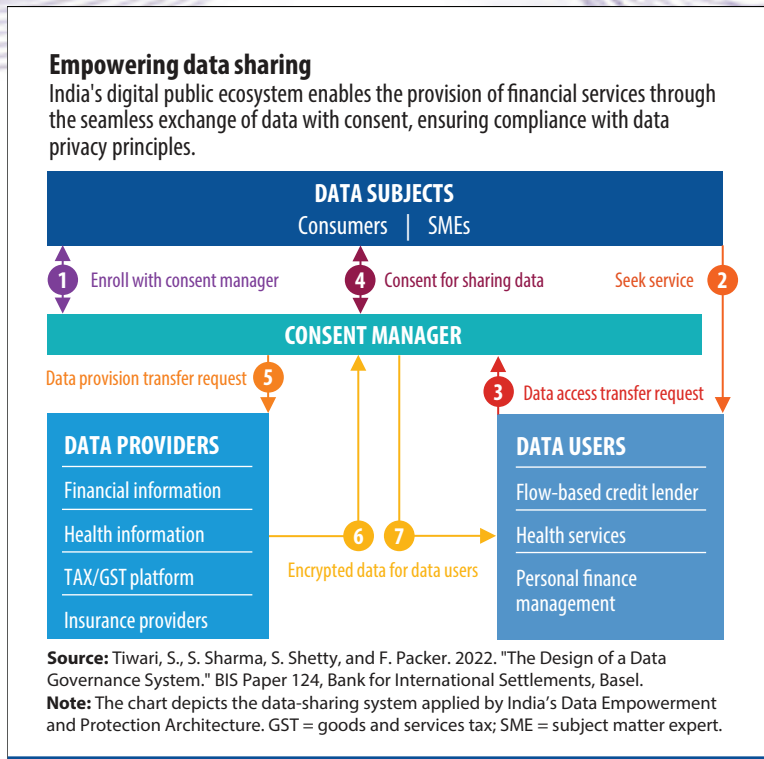
Data governance

The takeaways from the Indian experience, and more generally the experience of many jurisdictions worldwide—Australia, Singapore, the United Kingdom, and the European Union, to name a few—have demonstrated the centrality of data to the delivery of fair and tangible outcomes to citizens. A key feature of digital public infrastructure is that it can be designed to enable individuals and businesses to use their data for their own benefit.

India's experience suggests that adherence to the following would be valuable for other countries wishing to adopt a digital public infrastructure:

- Citizens should have the right to access and use their data, wherever it resides, for their own benefit.
- The rules for access and the use of data should be practical and clear and allow users to access and share their data with consent, at reasonable cost, and in a manner that respects their privacy and security.
- Such a system must be digital and the data protection principles integrated into the technology, given the large quantity of data involved and the need to keep it safe with low transaction costs.

In the recent past, senior policymakers from Australia, France, India, Japan, Rwanda, the Bank for International Settlements, and the European Commission have deliberated data empowerment approaches and affirmed the importance of reinforcing the twin policy goals of privacy and data-driven innovation through open, interoperable technical protocols. Data governance has also become an essential element of some new regional trade initiatives in the Asia and Pacific region. The Digital Economy Partnership Agreement



between Chile, New Zealand, and Singapore and the Indo-Pacific Economic Framework for Prosperity are two recent examples.

Digital public infrastructure and data empowerment will be central themes of India's G20 presidency in 2023. To make progress worldwide, a global governance mechanism is needed to support open technology standards, regulatory coordination across multiple stakeholders, and interoperable accreditation. Not least, international coordination is essential to satisfactory governance of cross-border transactions. It is too early to talk about common standards for data governance, but conversations in informal settings and at international institutions about the broad parameters for such standards have already begun.

Looking ahead, the global community needs to promote this conversation, encouraging like-minded countries to share their experiences and expand the frontier of best practices in data governance. The continued lack of institutions to represent global interests in the digital arena is a major gap in the current international architecture. **FD**

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Price Prediction

Today's inflation expectations are likely to become tomorrow's inflation reality

Francesco Grigoli



HAVE YOU NOTICED that goods at your local store are more expensive and you cannot buy as much with your paycheck as you once could? In many parts of the world, prices for goods and services are rising at the fastest pace in 40 years. Newspapers and other media outlets typically report the latest inflation figure—that is, the change in prices compared with the same month a year earlier. Yet policymakers focus largely on inflation expectations.

Inflation expectations describe the rate at which people reckon prices will rise or fall in the future. For example, if you think that a car costing \$20,000 today will cost \$22,000 in a year's time, your inflation expectation for cars is 10 percent. If you expect the car to cost \$18,000, your inflation expectation is -10 percent. Your inflation expectation is 0 if you think the price of the car will stay the same. Broaden this example to include all the goods and services typically consumed in a country and you have a number for overall inflation expectations.

Inflation expectations matter because today's inflation expectations are likely to become tomorrow's *actual* inflation. If you expect a car to be 10 percent cheaper next year, you are likely to wait until prices have fallen before you buy it. This fall in consumption slows economic growth by lowering demand and pushes prices down further. But if you expect the car to cost 10 percent more, you are likely to buy it immediately to avoid paying the higher price later. This adds to demand in the economy and pushes up prices.

Inflation expectations also influence wage negotiations. If workers and their unions expect prices to increase 10 percent, they will push their bosses for a pay raise at least as large to ensure that their purchasing power does not decline. Workers might even strike to ratchet up the pressure. Firms will then raise their prices to protect their profit margins from the increase in wage costs. This can trigger what is known as a “wage-price spiral”—inflation that leads to higher wages, leading to even higher inflation.

Measuring inflation expectations

Inflation expectations are traditionally measured using surveys by central banks, universities, or private institutions. The University of Michigan, for example, conducts a monthly survey in which at least 600 households across the United States are asked to provide their best forecast for inflation. Some surveys collect forecasts from professional analysts at banks or financial firms. Others collate responses from the stores and other businesses that actually set the prices consumers pay.

Expectations can vary widely between groups of people and within them. Professional forecasters are paid to study all the available information, and their inflation guesses are usually the most accurate. But even these experts disagree among themselves, especially when predicting inflation in countries where prices are more volatile.

Disagreements about inflation expectations are even greater among households and firms. One reason is that most people do not spend

much time thinking about inflation if they do not see it is as directly relevant to their lives—a phenomenon known as “rational inattention.” Instead, they may assume that all prices move in line with the cost of a single item they purchase frequently—for example, gasoline. Some people may expect prices to rise while others see them falling. A simple average does not capture this complexity.

Maintaining price stability

Most central banks seek to maintain inflation at a stable rate, known as the “target.” Inflation expectations tend to become actual inflation, so it’s in the central bank’s interest to manage inflation expectations and keep them as close to this target as possible. In other words, central banks want to keep inflation expectations “anchored” to the target to achieve their primary objective of price stability.

Central banks know that anchoring near-term inflation expectations is virtually impossible because they are largely the result of recent events, such as a flood or drought that destroyed a crop and is driving up food prices. Instead, they focus on managing inflation expectations over the medium term, typically two to three years. This is the “policy horizon” over which they have tools that can influence inflation.

If inflation is above the target, the central bank can raise its short-term policy interest rate as well as influence longer-term interest rates to make it more expensive for households and firms to borrow. The higher cost of credit makes it more expensive for people to spend. This will dampen demand and thus slow inflation, and inflation expectations will fall.

Another way to influence inflation expectations over the policy horizon is through communication that provides signals about the future direction of monetary policy. This communication tool, known as “forward guidance,” became widespread when the interest rates of many central banks were stuck at or close to zero for the decade or so after the 2008–09 financial crisis. Many central banks were reluctant to push policy rates into negative territory. And even when policy rates were negative, central banks refined their communication of future policy to stimulate demand and push inflation expectations back up to target.

Central bank credibility

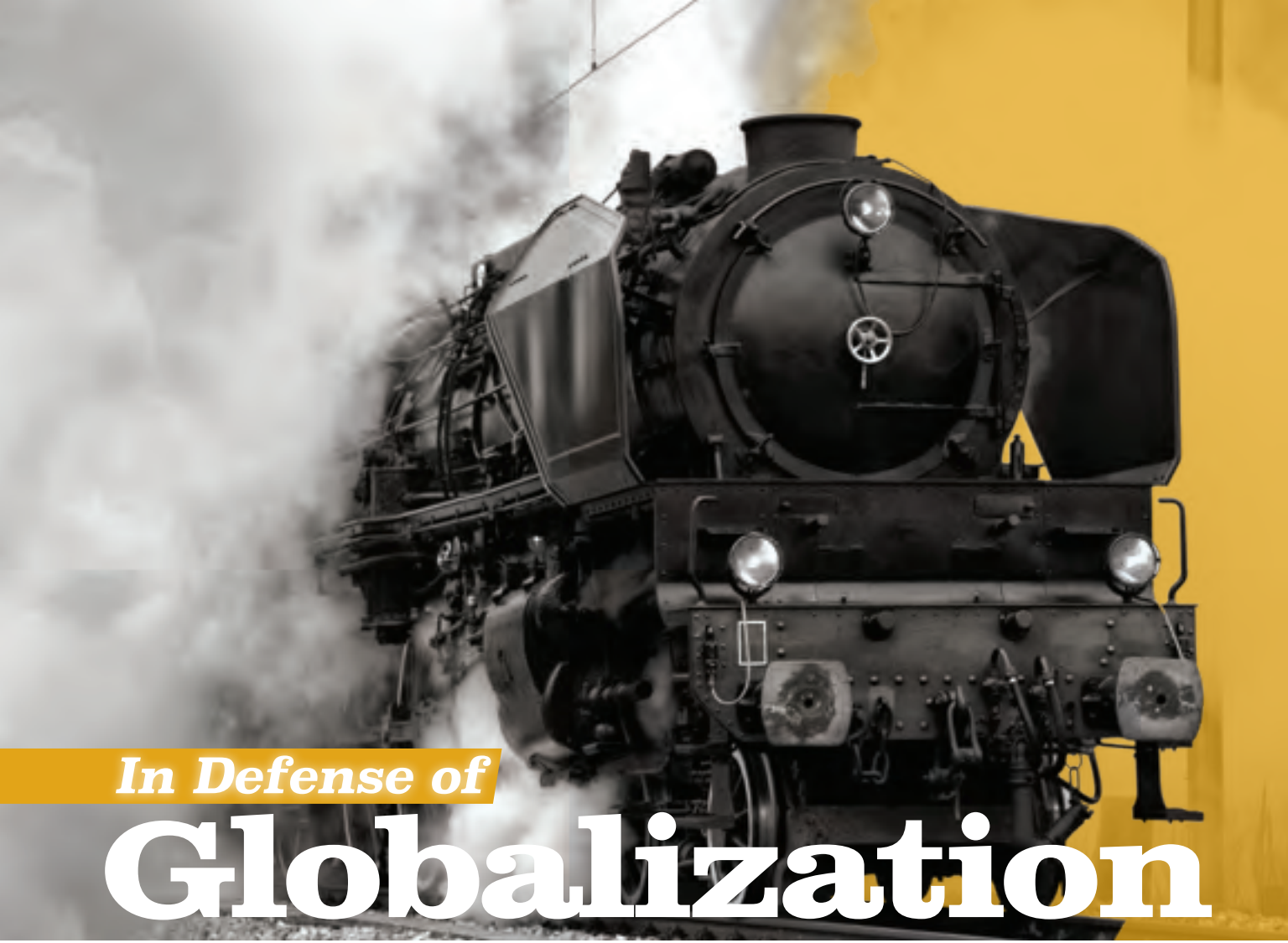
Anchoring inflation expectations is not easy. Imagine a situation in which inflation expectations are higher than the target and the central bank lowers interest rates instead of raising them. In this scenario, credit would become cheaper, demand would boom, and prices would be pushed further away from the target. People would realize that the central bank is not serious about its mandate of price stability. So, when asked about their inflation expectations, people would likely answer with numbers above the target. Since expected inflation tends to become actual inflation, this would keep inflation above the target for much longer—a *cost* of a central bank that lacks credibility.

Let’s instead consider the case of a credible central bank that is firmly committed to price stability. Even if inflation deviates from the target, people believe the central bank will do what’s needed to restore price stability. As a result, people may not change their expectations for inflation over the two- to three-year policy horizon.

Achieving this degree of credibility takes time and is not always easy. A central bank needs to act consistently in line with its mandate of price stability so that people believe it is always ready to minimize any divergence of inflation expectations from the target. In some cases, this can involve difficult trade-offs, such as raising interest rates to dampen price pressures—even when the economy is weak and unemployment is rising, for example. Yet once inflation expectations are anchored securely, the central bank can be much less aggressive and still achieve price stability. Any overshooting or undershooting of inflation expectations from the target will tend to correct itself, and bouts of inflation will fade away faster—a *benefit* of a credible central bank. This, in turn, frees the central bank to focus monetary policy on achieving secondary objectives, such as stimulating economic growth and employment.

The inflation figures you read about in the newspapers each month are important. But perhaps more important—for an economy’s outlook and future direction of interest rates—are inflation expectations. **FD**

FRANCESCO GRIGOLI is a senior economist in the IMF’s Research Department.



In Defense of

Globalization

History suggests the path to taming inflation is through more international trade—not less

Harold James

Today's surge in inflation grows out of the interplay of supply chain disruptions with large fiscal deficits. The pandemic, followed by Russia's invasion of Ukraine, upended supply chains and produced scarcities. Rich industrial countries responded to the shortages, inequalities, and social stress with large fiscal packages. In the ensuing spiral, increased spending led to more demand, which led to more shortfalls. Another vicious spiral may follow. Rising food and fuel prices could spark discontent, protests, even revolutions and government breakdowns around the world.

The inflationary spiral may appear to herald a quite different world, split into competing blocs that pursue costly "friendshoring" strategies of steering trade to friendly nations and regimes while attempting to hobble rivals. Large states rethink the benefits of globalization and attempt to protect what they see as vital or strategic resources. This adds up to a recipe for freezing global economic growth.

As much as globalization has come under attack lately, history suggests that it may be the wrong target for renewing policy and that globalization offers an antidote to inflationary spirals. The hunger crises of the mid-19th century and the oil shocks of the 1970s at first ignited explosive rounds of worldwide inflation. In both cases, new technologies dramatically altered global supply systems, expanding globalization and leading to lengthy periods of disinflation. Thus, rampant inflation eventually drove the world to more rather than less globalization, with broad benefits.

The same forces are likely to come into play today. The benign price environment of the early 21st century grew out of better central bank policy but also reflected the opening of world goods and labor markets. A global labor market pressed wages down in rich countries, and poorer countries wanted monetary stability so they could access global markets without disruption.

Policymakers and academics identified the relationship between globalization and a transition to low inflation around the world, first in rich industrial countries, then in Asian emerging markets, and ultimately even in Latin America, where inflation had been a way of life. In 2005, then-Federal Reserve Chairman Alan Greenspan argued that globalization and innovation were “essential elements of any paradigm capable of explaining the events of the past 10 years,” or what was termed the Great Moderation. As late as 2021, today’s Fed chairman, Jay Powell, referred to “sustained disinflationary forces, including technology, globalization and perhaps demographic factors.”

There is a historical pattern of globalization driving disinflation. What is usually thought of as the first age of modern globalization began in the middle of the 19th century with the hunger crises. It was interrupted by World War I, followed by the Great Depression. Eventually, a new style of globalization took off in the 1970s. Both turning points—in the 1840s and 1850s and in the 1970s—started with shortages and inflationary surges (see Charts 1 and 2).

Transformative technologies

In both cases, technological breakthroughs in transportation then drove an innovative globalization. It was the steam engine that opened up continents with railroads and oceans with steamships. Following the 1970s, the shipping container sharply reduced the cost of transporting goods. The actual inventions occurred substantially earlier. Matthew Boulton and James Watt were building operational steam engines in the 1770s, and the first container ship was launched in 1931.

It took a dramatic shock in each case to turn intriguing ideas into transformational technologies: the hunger crises of the mid-19th century and then the oil price surges in the 1970s. It was disruption caused by big price increases that created the circumstances to realize the transformative power of the innovations. The big payoff came only through conditions of shortage.

The widespread adoption of innovation depended on policy choices, starting with the removal of impediments to commerce. Revolutions in government meant that public authorities took on many more tasks concerned with managing the economy, including guiding the course of trade liberalization and writing legislation that revolutionized the course of enterprise. In the 19th

century, business was reshaped through new corporate forms, including the limited liability joint stock company and universal banks that mobilized capital in innovative ways. The combination of new gold supplies and banking innovation produced monetary and price surges.

Price stability and monetary order returned and brought a consensus around a stable and internationally applicable monetary framework as countries sought a mechanism that would allow them to attract capital inflows or to globalize further. In the 19th century, that was the gold standard. In the late 20th century, it was modern inflation targeting on the part of central banks. The new vision that followed involved monetary stabilization and a refocusing of government on core tasks.

Is it realistic to expect a repeat of the same dynamic today? Historically, the initial response to a threatening volatility is to run in the opposite direction and look for more self-sufficiency. That course, however, is rarely successful. It increases costs and fuels inflation. It makes attractive solutions harder to implement. Especially the questions of institutional design—how to write new corporate legislation, run public procurement, operate new financial systems—have no easy answers. Breakthrough technologies require substantial learning, where the experience of other countries is invaluable.

Political fallout

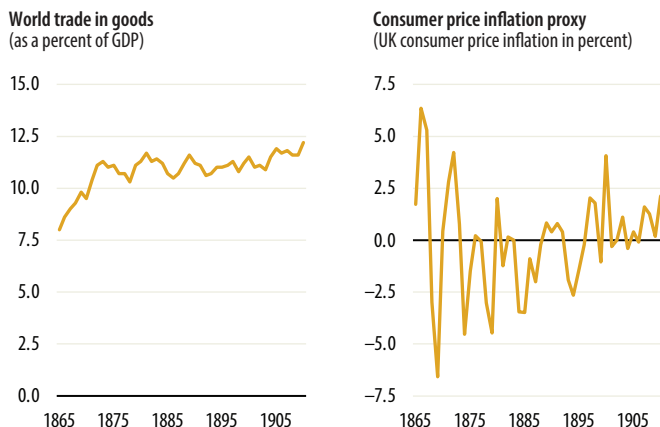
In the midst of the previous transitions, few people felt comfortable. There was instability. In the mid-19th century, governments were overthrown around the world, and it was not immediately obvious that the successors were better, more competent, or more effective. They needed to learn. In the 1970s, there was widespread, corrosive doubt about the viability of democracy. The world went through the contemplation of similarly complex, multiple crises as today. But there was a way out. Societies, voters, and consequently also political leaders start to make comparisons with adjustments and experiments elsewhere. In the mid-19th century and also in the 1970s, it soon became clear that governments that did not open to the world performed worse.

There are already signs of today’s learning process. The UK, by fluke of its political system, began a process of political, regulatory, and economic disengagement in 2016 with the Brexit vote. By 2022 the costs were much more apparent, and the

Chart 1

The first era of globalization

As steam locomotives and steamships slashed transportation costs in the 19th century, world trade increased while inflation of the Great Famine eased.

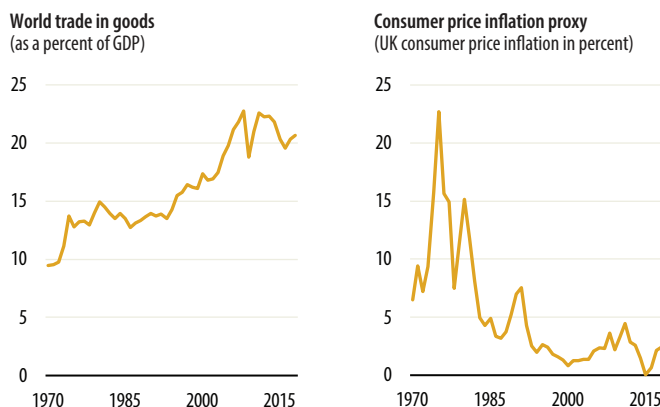


Sources: Catão, Luís A. V., and Maurice Obstfeld, eds. 2019. *Introduction to Meeting Globalization's Challenges: Policies to Make Trade Work for All*. Princeton, NJ: Princeton University Press; and Bank of England, A Millennium of Economic Data dataset (to 2016).

Chart 2

Globalization and inflation

Following the inflationary surge set off by the 1970s oil shocks, new container shipping technology helped spur renewed expansion of world trade while consumer price increases slowed dramatically.



Sources: Catão, Luís A. V., and Maurice Obstfeld. 2019. *Introduction to Meeting Globalization's challenges: Policies to Make Trade Work for All*, edited by Catão and Obstfeld. Princeton, NJ: Princeton University Press; Bank of England, A Millennium of Economic Data dataset (to 2016); and IMF, World Economic Outlook database.

radical alternative of trying to push independent growth failed abysmally in the short-lived government of Prime Minister Liz Truss. The UK became a poster child for what not to do. Populist anti-globalization movements across Europe that were initially attracted by the allure of an anti-EU stance quickly retreated.

Today there are rising protests against autocracies and democracies alike. A common theme is discontent with existing ways of managing pandemics, wars, and even information technology.

At the same time, we can see the new technologies that will produce better growth and a superior capacity to tackle the wide range of contemporary issues—health, energy policy, climate, and even security. They all require cross-border action and coordination. The equivalents to the steam engine or the container ship are scientific breakthroughs that already exist. The messenger RNA vaccine, for example, had been under slow development since the 1990s, mostly as an answer to rare tropical diseases. Then its use against COVID provided a model, and now applications for the treatment of other diseases, chiefly cancers, follow.

Similarly, the technical possibilities of remote medicine or education were there well before the pandemic. Under pressure of necessity, their application quickly became commonplace and set off a revolution that might make for broader and cheaper access. Remote working—also across political frontiers—is the equivalent of communications revolutions of the past. The application of information technology means we can communicate more while physically moving less.

An initial globalization centered around the Industrial Revolution saw the exchange of manufactured goods from a few countries for commodities from many in the rest of the world. The 1970s created globalization through increasingly complex supply chains. The current crises are generating a different sort of globalization, shaped by information flows. There will be marked contrasts in the competence with which societies respond to the new data revolution. Today's globalization dynamic has the potential to create a revolution of system optimization, making the result of prior technical change cheaper and more accessible. In that sense, it is globalization that constitutes the real Inflation Reduction Act. **FD**

HAROLD JAMES is a professor of history and international affairs at Princeton University and IMF historian.

Lessons from History

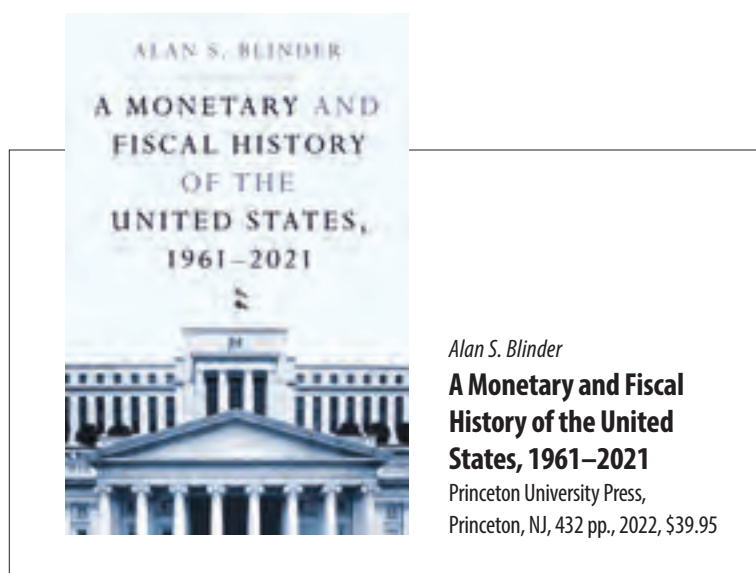
THE TWIN CRISES of this century (the 2008 financial crisis and the 2020 global pandemic) notwithstanding, we live in a world created by central bankers of the 1980s and 1990s. That was when economists empirically demonstrated the relationship between central bank independence and price stability; politicians of all stripes paid homage to central bankers' wisdom on market stability, international diplomacy, pension reform, and fiscal policy; and markets swooned over every last central banker comment.

In his new book, Alan Blinder—the famed economist and former Fed vice chair involved in fiscal and monetary policy during that golden era—celebrates the wisdom of central bankers but also highlights their sometimes-ugly incursions and excursions into the world of fiscal policy.

Blinder writes with the verve for which he is justly famous. Blinderian parentheticals abound, as do biographical snippets of key players. More important, as befits an economist involved in policy for the past 40 years, the author is laser-focused on history's implications for present policy disputes. A book of history written for our time, it has much to say about the fiscal-monetary conflicts and collaborations that continue apace, including most recently the 2020 crisis, perhaps the biggest fiscal-monetary collaboration since World War II.

Blinder's is an avowedly (neo-)Keynesian account of the sweep of this economic history, in praise of the technocrats and their political masters, in a defensive crouch for central bank independence—confident that there are right and wrong policy answers to questions posed by the economy. Blinder would most certainly disagree with the notion, for example, that central bankers are political actors. This is, I think, the greatest weakness of his account. What we get is a strong account of politicians with profound short-term bias and technocrats serving as the intellectual counterweight whose errors were primarily—perhaps exclusively—their failure to exercise the independence their status requires.

The reality is more complicated. While Blinder's account defends well the proposition that central bankers and their technocratic counterparts advising politicians on fiscal policy were often not partisan



in their advice, his defense of the view that they are not political is less satisfactory. It's an important difference. There are good reasons Blinder's view of the Fed's policies in, say, 2009 were so diametrically different from Allan Meltzer's. It's not because Blinder is a Democrat and Meltzer was a Republican. It is because of how Blinder and Meltzer each reduced the world's complexities through a worldview that facilitated this reduction.

The author is laser-focused on history's implications for present policy disputes.

Central bankers are in the business of, among much else, a similar reduction. In 2023, as the Fed leads the world in global interest rate tightening in response to record inflation, we are again in the throes of this intellectual battle. The stakes are high, but not merely technocratic. Central bankers will, in the coming months and years, exercise value judgments under conditions of significant uncertainty. Blinder's book is a vital resource for us all as we navigate these tensions. Where we must dig deeper is in appreciating just how much politics they will practice in the process. **FD**

PETER CONTI-BROWN is a professor of financial regulation at The Wharton School of the University of Pennsylvania.

Interest Is the Price of Time

FINANCIAL WRITING LOVES superlatives like “four-week high” and “most in a year.” So it’s eye-catching to read that, after Lehman Brothers failed, central banks pushed interest rates to the lowest level in five millennia. So begins Edward Chancellor’s *The Price of Time: The Real Story of Interest*, noting that Mesopotamians charged interest on loans before putting wheels on carts. Ancient interest—which predates coined money—on corn and livestock loans was reflected in language that associates borrowing costs with what they produce: the Sumerian word signifies a kid goat; the ancient Greek *tokos* means calf.



Edward Chancellor
The Price of Time: The Real Story of Interest
 Atlantic Monthly Press
 New York, NY, 2022, 432 pp., \$28

The financial journalist and author of *Devil Take the Hindmost: A History of Financial Speculation* has produced another deep historical dive with his new and exhaustively researched history of interest rates.

Low rates star as villain. Central bankers obsessively pursued inflation targets, blinded to the harms, and in addressing problems like the 2008 crisis and Europe’s sovereign debt woes, the consequences “were never properly considered or resolved.” Chancellor’s examples, spanning eras and

countries, blame ultralow rates for hurting growth, productivity, savings, and investment. They keep zombie firms alive, fuel inequality, inflate bubbles, and undermine financial stability.

He criticizes Federal Reserve policy for low rates dating back nearly to its 1913 founding. The Fed’s “suppressing economic volatility encouraged the build-up of financial leverage” as easy money ignited the 2008 financial crisis, the author says. Chancellor approvingly quotes financial journalist James Grant, founder of *Grant’s Interest Rate Observer*, as saying that the Fed’s “functional dual mandate has become that of arsonist and fireman.”

Among examples of “malinvestments induced by ultra-low interest rates,” Chancellor highlights price-fixing cartels, citing research that shows they’re influenced most by interest rates. Low rates led to overvalued start-ups, such as the \$9 billion peak valuation of Theranos, the fraudulent medical testing start-up founded by Elizabeth Holmes. Another example is the Arab Spring, which Chancellor sees as originating with low US interest rates that drove capital flows to emerging market economies and sent food prices soaring. And there’s crypto, a mania “born of monetary conditions” as much as technology: “The debasement of currencies by central banks meant a new type of money was needed.”

Amid monetary anesthetization, Chancellor sees concern for capitalism, liberalism, and democracy itself resurfacing. Central banks are manipulating “the most important price in a market-based economy” and the beating heart of capitalism.

Without the necessary pulse from borrowing costs, future income can’t be valued, capital can’t be properly allocated, and too little is saved, according to the author. An unruly adverse feedback loop looms. If this continues, “state investment would have to replace private investment and central banks would have to replace commercial banks as the major providers of credit,” Chancellor concludes. “Without interest to regulate financial behavior, an inherently unstable financial system would require endless new regulations.”

The Hebrew word for interest, *neshek*, “derives etymologically from the bite of a serpent,” Chancellor’s opening notes. His closing posits that “no bite” is even worse. **FD**

JEFF KEARNS is on the staff of *Finance & Development*.

Revisiting the Soviet Breakup

JOHN ODLING-SMEE'S BOOK describes the transformation of planned economies after the 1991 breakup of the Soviet Union. The author is a retired economist who from 1992 to 2003 headed the IMF team responsible for the former Soviet republics. The book moves smoothly from government offices in the former Communist Party Central Committee building to the dachas of wild young reformers in Arkhangelskoe on the edge of Moscow. It offers a glimpse of the large official dinners where guests were expected to drain their shot glasses of vodka or brandy after each of the many formal toasts. But Odling-Smee does not fail to detail the tragedy of ordinary people during the collapse of the Soviet economy: endless queues before state food shops with empty shelves, shivering people selling small items by the roadside. While personal anecdotes provide context and color and make for an easy read, Odling-Smee knows his subject and provides a serious recount of economic issues.

The author shows how deep political weakness—above all, corruption and cronyism—prevented the growth of real market economies.

Odling-Smee and other members of the IMF team went to the Soviet Union in 1991 to help the country avoid economic collapse. This was, of course, “mission impossible.” Little was known about the Soviet Union outside the USSR—only falsified statistics and other lies. The author vividly describes the horror of the initial situation and the chaos that followed the disintegration of the Soviet Union. Some accused the IMF of destroying the Soviet economy—on the brink of collapse by the time the Fund was called in.



John Odling-Smee

Towards Market Economies: The IMF and the Economic Transition in Russia and Other Former Soviet Countries

Hamilton Books,
New York, NY, 2022, 248 pp., \$24.99

I had the privilege of cooperating with the IMF when I was prime minister of Estonia from 1992 to 1994 and can only agree with the author when he writes, “The faster reforms are implemented, the sooner the economy will recover. By delaying difficult reforms, you are just prolonging the agony and pain of people.” Odling-Smee offers several explanations for the success of the Baltic countries. I can add only two small remarks: first, they broke away completely from their Communist past; second, the Soviet economy collapsed as a result of the collapse of the Soviet system, not because of reforms.

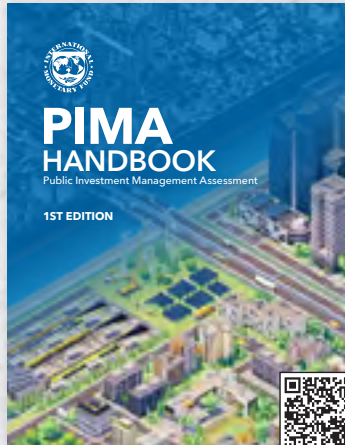
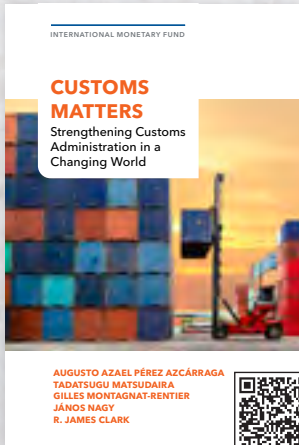
The style of the book is calm and reasoned. The author does not defend the IMF or himself, but does suggest what might have been done differently—maybe not by the IMF, but by the countries in transition. He shows how deep political weakness—above all, corruption and cronyism—prevented the growth of real market economies.

This book was written before Russia invaded Ukraine in February 2022 and so does not cover this tragedy, but it describes its roots very well. The failure of reforms led to corruption, cronyism, and oligarchy—which led to Putin and war. It is useless to point fingers when asking, “Who lost Russia?” Russia lost itself, and only Russia can raise itself up. **FD**

MART LAAR is a former prime minister of Estonia.

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