Recent media stories and more substantial works chronicle in great detail the events of the past couple of years.\(^1\) A pair of conclusions might be fairly drawn from these early drafts of history. One, the financial market turmoil of the past year proved to be of significant consequence to the economy. And two, the Federal Reserve distinguished itself from historical analogues by taking extraordinary actions to address risks to the economy. The commentary, however, tends to part ways as to whether the extraordinary actions undertaken were to the good or the detriment of the U.S. economy in the long-run.

As my fellow members of the Federal Open Market Committee (FOMC) and I stated earlier this week, economic activity has picked up, conditions in financial markets have improved further, and longer-term inflation expectations are stable.

Nonetheless, the second anniversary of the onset of the financial crisis – and about a year from the darkest days of the Panic of 2008 – is no time to declare victory, scarcely the moment to hand out medals.\(^2\) I cannot help but think of the strong but weary athlete who, after a morning swim, embarks upon a grueling cycling contest to a rising din of cheers and a smattering of boos...only to be reminded that he is participating in a triathlon, and that he has a long run still before him.

In my view, it is unwise to prejudge the Fed's policy strategy – or to declare the victor or the vanquished – by the split time, however notable it might be. We are at a critical transition period, of still unknown duration, and we must prepare diligently for an uneven road race ahead. If policy is not implemented with skill and force and some sense of proportionality, the success of the overall endeavor could suffer.

Judgments made by policymakers in the current period are likely to be as consequential as any made in the depths of the panic. That means policymakers should continue to communicate as clearly as possible the guideposts, conditions and means by which extraordinary monetary accommodation will be unwound, including the removal of excess bank reserves.\(^3\)

It also means that policymakers should acknowledge the heightened costs of policy error. The stakes are high, in part, because the policy accommodation that requires timely removal as the economy rebounds is substantial. And our policy judgments will ultimately prove worthy of the accolades, and tender the ultimate rejoinder to their critics, if we rise to meet this heightened responsibility. I am confident we will.

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1 The views expressed herein are my own and do not necessarily reflect the views of other members of the Board of Governors of the Federal Reserve System or of the Federal Open Market Committee. I am grateful for the valuable assistance of Daniel Covitz, Eric Engstrom, Nellie Liang, and David Reifschneider of the Board staff who contributed to these remarks.


The final recounting of economic history, I submit, will judge that winning the battle against the Panic of 2008 was a necessary but insufficient condition to win the peace and ensure a strong foundation for economic prosperity. That outcome will require that policymakers have equal parts capability, clairvoyance and courage, perhaps the most important of which is courage.

For those of us at the Federal Reserve, the task ahead involves longer days, but in all likelihood, fewer weekends. While the undertaking is as challenging as any we faced in the preceding period, it is exceptionally well suited to the Federal Reserve’s comparative advantages of deliberation, dispassion, and a determination to make judgments based on the long-term interests of the U.S. economy.

The task ahead

Economic histories in the United States and elsewhere are packed with examples in which the monetary authorities, with the overwhelming benefit of hindsight, may have misjudged the communication, timing or force of their exit strategies. In some cases, policymakers may have waited too long to remove easy-money policies. In other cases, policymakers may have acted too abruptly, normalizing policy before the economy was capable of self-sustaining growth.

Errors of each sort are neither uncommon nor unexpected in the normal conduct of monetary policy. During normal turns in the business cycle, the consequences of policy error to the broad economy tend to be meaningful. Forgone output. Higher unemployment. Threats to price stability. None of which are – or should be – acceptable to the Federal Reserve, or to the broader body politic. And the current environment is anything but normal. There are uncertainties regarding the trajectory of the economy recovering from a major financial crisis and a deep recession. Equally, there are uncertainties about the performance of the monetary transmission mechanism and the operation of the Federal Reserve’s unconventional policy tools. A nimble, even-handed approach toward our risk-management challenges will prove necessary.

Monetary policy rules have for some time served as an alluring guide for policymakers, particularly at transition points when guidance is especially useful. In particular, the Taylor rule has proven to be informative in describing, if not prescribing, how a central bank might adjust its interest rate policy instrument in response to developments in inflation and macroeconomic activity. But, to make the outputs operational, we need reasonable conviction in the reliability of our estimates of current resource utilization and inflation or, for some alternative rules that have been proposed, forecasts of these model inputs. And it is these kinds of estimates that appear especially uncertain during this period of economic history, emblematic of the challenging task ahead. Policy rules and models alike tend to presume average historical responses, incorporating typical transmission effects and normal market functioning, which may not fairly capture the current state of play.

Nonetheless, policymakers strive to answer the following questions: How is the economy currently performing relative to its long-run potential, and is this likely to change in the next few months? Where is inflation now relative to its desired level, and what are the prospects for an acceleration or deceleration in prices in the near-term? Will changes in the federal funds rate interact with financial conditions and affect future real activity and inflation

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consistent with past practice? Or have these interactions changed, with implications for both the outlook and the conduct of policy?

It may be, for example, that potential output has fallen by virtue of the panic and its aftermath. If the resulting economy proves less adaptive, for example, the natural rate of unemployment may well threaten to move upward, implying tighter labor markets at higher unemployment rates, and lower potential output. These estimates are especially difficult to ascertain given the uncertain contour of the financial architecture and the greater-than-usual reallocation (and risk of misallocation) of labor and capital across sectors.

Of course, countervailing risks could cause a mark-up in economic potential that cannot be dismissed: Productivity gains may turn out to be larger and more enduring than we expect, and the remarkable resiliency of the U.S. economy could defy skeptics as it has done repeatedly in the post-World War II era.

Data in the past couple of months show continued improvement in real economic performance. In combination with the repair in financial markets, the outlook for gross domestic product (GDP) in the next few quarters appears better, improving the odds of a more enduring positive feedback loop arising from market developments and real activity.

Nonetheless, the medium-term risks to the outlook are still disquieting. Policies, broadly defined, that purport to bring stability to the macroeconomy could risk lowering output potential over the horizon. The uncertainty of the capital and labor reallocation process, a global trade environment in transition, and a shifting regulatory environment represent downside risks. The possibility that we fail to accurately gauge the resulting changes in economic and inflation prospects – by virtue of the remarkable, iterative changes in private sector practices and public policy prescriptions – is a foremost risk for policymakers. In this environment, we should maintain considerable humility about optimal policy.

Preliminary, provisional, subject to revision, condition-dependent forecast

I just sought to describe the challenges in conducting monetary policy in this environment. That should caution us to steer clear of ironclad policy prescriptions. Nonetheless, I would hazard the view that prudent risk management suggests that policy will likely need to begin normalization before it is obvious that it is necessary, possibly with greater force than is customary, and taking proper account of the policies being instituted by other authorities. Allow me to elaborate on each of these three items.

First, when will the Fed's extraordinary policy accommodation demand removal?

The central banker’s standard reply, to which I would associate myself here, fits the bill: When conditions warrant. The FOMC stated on Wednesday that “economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period.” Although it just might be a central banker's rationalized excuse for not knowing, I genuinely believe that more precise timing is unknowable.

In my view, if policymakers insist on waiting until the level of real activity has plainly and substantially returned to normal – and the economy has returned to self-sustaining trend growth – they will almost certainly have waited too long. A complication is the large volume of banking system reserves created by the nontraditional policy responses. There is a risk, of much debated magnitude, that the unusually high level of reserves, along with substantial liquid assets of the banking system, could fuel an unanticipated, excessive surge in lending.

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Predicting the conversion of excess reserves into credit is more difficult to judge due to the changes in the credit channel.\(^7\)

Financial market developments bear especially careful watching. They may impart a more forward-looking sign of growth and inflation prospects than arithmetic readings of stimulus-induced GDP or lagged composite readings of inflation.

The rapid, global revaluation of asset prices – in both directions – has served as a hallmark of the past two years. Monitoring this trend, and gauging its durability, will demand keen judgment. If asset prices find a new and enduring equilibrium, market participants and policymakers alike may well gain additional comfort that the real economy is poised for sustainable recovery. However, if asset prices retrace their recent gains, the real economy would be adversely affected.

Understanding risk premiums embedded in asset prices will be critical to this task. In general, risk premiums across asset classes fell significantly in the past six months, but remain elevated, roughly consistent with prior recession periods. Some portion of the decline in premiums and the concomitant run-up in equity prices, for example, can be fairly ascribed to the abatement of tail risk that became apparent during the panic. Option prices across broad equity market indexes show a substantial markdown in the likelihood of a substantial market correction.

But, the broad and continued ascent in equities appears increasingly to reflect a new judgment about the modal outcome for economic growth and corporate earnings. If it turns out that equity risk premiums continue their recent trajectory, real economic performance would be bolstered further by sturdier household, business and financial firm balance sheets.

It is not just the trend or level of asset prices that should inform policymakers. Correlations of asset prices across markets also provide important insights. In times of panic, historic correlations break down and commonality predominates. Those firms and individuals with purportedly "well-diversified portfolios" going into the panic bore painful witness to this truth. During extreme conditions, sharp swings in investor sentiment often dominate changes in relative valuations and, for a time, limit the degree to which financial markets effectively allocate credit.

This breakdown in historic correlations is not unique to the onset of panics. It may predominate when panic conditions are in retreat. For instance, in the past couple of months, U.S. stock market indexes and corporate bond prices both moved meaningfully higher, while Treasury yields and the foreign exchange value of the dollar fell. These movements are difficult to reconcile with historical experience or by ascribing them to changes in the modal growth path for the economy. Rather, this odd constellation of movements in asset prices may indicate changes in investor preferences and in the distributions of outlooks for inflation and growth. It would be more reassuring to growth and inflation prospects in the coming months if asset prices were to signal a clearer, more reliable message.

**Second, how might the policy response evolve?**

Many of the programs created during the panic were designed to atrophy – due to their changing relative attractiveness in price and other terms – as market conditions improved. This natural unwinding has proven largely successful. As a result, the Federal Reserve’s balance sheet composition has changed in recent months, even while the overall balance sheet size has remained relatively constant.

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Several of the Fed's non-traditional programs to provide monetary stimulus were established under section 13(3) of the Federal Reserve Act, the Fed's governing statute. The Congress authorized the Federal Reserve to lend to non-depository institutions, as the programs do, only under "unusual and exigent circumstances." The judgment that the 13(3) standard is no longer satisfied would cause an unwinding of nontraditional policy tools by the Fed, and presage a normalization of policy.8

Ultimately, when the decision is made to remove policy accommodation further, prudent risk management may prescribe that it be accomplished with greater swiftness than is modern central bank custom. The Federal Reserve acted preemptively in providing monetary stimulus, especially in early 2008 when the economy appeared on an uneven, uncertain trajectory. If the economy were to turn up smartly and durably, policy might need to be unwound with the resolve equal to that in the accommodation phase. That is, the speed and force of the action ahead may bear some corresponding symmetry to the path that preceded it. Of course, if the economy remains mired in weak economic conditions, and inflation and inflation expectation measures are firmly anchored, then policy could remain highly accommodative.

"Whatever it takes" is said by some to be the maxim that marked the battle of the last year. But, it cannot be an asymmetric mantra, trotted out only during times of deep economic and financial distress, and discarded when the cycle turns. If "whatever it takes" was appropriate to arrest the panic, the refrain might turn out to be equally necessary at a stage during the recovery to ensure the Fed’s institutional credibility. The asymmetric application of policy ultimately could cause the innovative policy approaches introduced in the past couple of years to lose their standing as valuable additions in the arsenal of central bankers.

Third, how might U.S. monetary policy be affected by other macroeconomic policies?

Monetary policy is not conducted in a vacuum. The Federal Reserve, and other monetary policymakers, will be keen observers to the judgments made by the fiscal authorities around the world. Central bankers will necessarily take account of these judgments.

Financial markets' affection for decoupling – that is the disassociation of U.S. economic prospects from the rest of the world – tends to wax and wane. My own views on the subject are less ephemeral. Our prospects for economic growth are highly correlated with the prospects of our large trading partners. And if fiscal, regulatory and trade policies diverge or deteriorate, economic prospects globally could suffer. But if the better path prevails – that born of the past couple of generations of economic dynamism, positive-sum trade flows, fiscal sustainability and regulatory best practices – we will emerge from this crisis with a stronger, more integrated global economy and more resilient financial markets.

Monetary policy convergence has proven remarkable, and remarkably constructive, throughout the crisis. When the removal of accommodation begins in earnest, we should be alert to see if this trend continues.

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8 This standard represents a prudent framework from which responsibility is delegated to the central bank. The grant of authority from the Congress is standards-based with clear limits and bounds. It might serve as a useful model worthy of broader application in the ongoing debate about regulatory reform.