

For release on delivery  
7:30 p.m. EST  
November 4, 2015

Central Bank Independence

Remarks by

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at the

2015 Herbert Stein Memorial Lecture  
National Economists Club

Washington, D.C.

November 4, 2015

It is a pleasure to speak to you tonight and an honor to deliver the 2015 Herbert Stein Memorial Lecture.<sup>1</sup> My subject tonight is central bank independence. But before turning to that topic, I would like to explain why this is a special occasion for me.

My first real-world involvement in economic policy began late in 1983, when I was invited by Secretary of State George Shultz to join a small team to advise him on the stabilization of the Israeli economy, then suffering from triple-digit inflation and other ills. Herb Stein, formerly chairman of the Council of Economic Advisers under Richard Nixon and Gerald Ford, was also on that team. Herb was 67, wise, witty, and experienced, and I was 40 years old, with a lot still to learn. By mid-1984, the advisory team consisted of only Herb and me.

The experience of working for George Shultz, in partnership with Herb, was not only wonderful, but it also changed my life, for after that I had the policy bug. I believe our team made a real contribution to the success of the Israeli stabilization program that began in mid-1985 and which is now recognized as a critical turning point in Israel's economic history. But tonight is not the occasion to retell that story.

Rather, let me tell you a bit about Herb via what should be called Herbisms. The most famous one is "If something cannot go on forever, it will stop," which comes in very handy when trying to persuade someone to stop implementing policies that are driving their economy straight into a stone wall. A second Herbism is extremely useful when discussing economic growth or interest rates: "The difference between a growth rate of 1 percent and a growth rate of 2 percent is 100 percent." I have many more but

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<sup>1</sup> The views expressed here are my own and not necessarily those of others at the Board, on the Federal Open Market Committee, or in the Federal Reserve System. I am grateful to Kurt Lewis, Ellen Meade, and Jonathan Rose for their help in preparing this speech.

will stop at three. While we were having dinner in a Washington, D.C. restaurant sometime in 1984, Herb asked me what was happening in the Israeli economy. I replied with an excellent exposition of monetary and fiscal policies, the accelerating inflation rate, all of the mistakes that were being made, who was doing what to whom, and more. If I had been a graduate student, I would certainly have received an A. Herb's response was not to congratulate me on the excellence of my analysis, but to ask gently, "Yes, but what do we want them to *do*?" That is a question one should always remember to ask when trying to advise a policymaker.

In brief, I learned an enormous amount from working with Herb and soon came to admire him as a man of strong but softly stated principles and immense decency, with whom it was a pleasure and privilege to be able to work and to talk--and, of course, to joke, for he had a great sense of humor. If you want to know more about him, go to Google, look up Herbert Stein, and find the speech that his son Ben delivered at the first Herbert Stein Memorial Lecture, in 2012. And I'm very happy indeed that Herb and Mildred's two children, Rachel and Ben, are here tonight.

### **Central Bank Independence over the Past 20 Years**

The modern academic literature on central bank independence developed largely in the late 1980s and the first half of the 1990s. The world of central banking was very different then--a fact brought home by recalling that, in the early 1990s, the interest rate in the United Kingdom was still set by the Treasury and not the Bank of England. At its tercentenary celebration in 1994, the Bank of England organized a symposium on central banking, motivated in part by its desire for independence from the Treasury and the modernization of its legal structure.

I gave a speech on monetary policy independence and modern central banking at the tercentenary celebration, in which I made the case for central bank independence and concluded with the sentence “On her 300th birthday, it is time to allow the Old Lady to take on the responsibilities of independence.”<sup>2</sup> At that time, visitors to Britain who raised the issue of independence for the Bank of England were typically treated to a lecture on why that was not possible in the British political system. Nonetheless, independence was granted to the Bank of England by a newly elected Labour government in 1997, and subsequent researchers have linked this independence to declines in both longer-term inflation risk premiums and inflation expectations.<sup>3</sup>

The literature I discussed in my 1994 speech was developed with an emphasis--based on post-World War II experience--on the problem of preventing high inflation. But we are no longer in that era. The inflation problem with which most of the leading economies are dealing is inflation that is too low, not too high. Further, now that we have had time to understand better the damage that the global financial crisis has wreaked on the world economy, and after much research on the effect of major financial crises on growth and on the dynamics of business cycles, we are focused to a much greater extent than in the past on the importance of financial stability.

I would like to use our time tonight to reflect on how the analysis of central bank independence of 20 years ago should be updated to reflect the different economic environment in which we are now living. I shall argue that, although high inflation is not the immediate concern that it was in the 1980s and 1990s, monetary policy independence

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<sup>2</sup> The lecture, titled “Modern Central Banking,” was printed in the conference volume, Capie and others (1994). A standalone version, including revisions following the discussion at that conference, is available as Fischer (1995a).

<sup>3</sup> See Joyce, Lildholdt, and Sorensen (2010).

remains of the highest importance, and that it is important that we preserve monetary policy independence to help foster desirable macroeconomic outcomes and financial stability.

### **The Case for Monetary Policy Independence**

By 1994, both theory and evidence suggested that more independent central banks deliver better outcomes, particularly lower and more stable inflation. The theoretical case for monetary policy independence focused on countering inflationary biases that were likely to exert themselves in the absence of an independent central bank. Such a bias could result from political pressure to boost output in the short run--for example, before an election--or to use a central bank's power to issue money as a means to finance government spending. Even in the absence of political interference, inflationary bias can result from the problem of dynamic inconsistency if central banks cannot credibly commit to keeping inflation low.<sup>4</sup>

On the empirical side, many scholars have studied whether monetary policy independence fosters low and stable inflation in practice. Summarizing roughly 25 years of research in his 2008 paper, Alex Cukierman observed that "the evidence is consistent with the conclusion that inflation and actual [independence] are negatively related in both developed and developing countries."<sup>5</sup> Further, monetary policy independence does not appear to be associated with adverse economic consequences. In particular, to the extent that independence of the central bank helps restrain inflation, it does not appear to result in significantly more volatile output, as some theoretical models had predicted.<sup>6</sup>

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<sup>4</sup> These theoretical results are demonstrated in the seminal work of Kydland and Prescott (1977) and Barro and Gordon (1983).

<sup>5</sup> See Cukierman (2008).

<sup>6</sup> See Rogoff (1985) for a well-known model that predicted such an outcome.

Cukierman goes on to note, however, that the causality from independence to lower inflation is not clear, and several studies over the past 10 to 15 years have found conflicting results on that front.<sup>7</sup>

Let me touch on four issues that are now an essential part of the understanding of central bank independence, but that were less prominent in the 1990s. First, there is a distinction between the terms *monetary policy independence* and *central bank independence*. In the literature that developed before the global financial crisis, central bank independence referred to independence from political influences *in the setting of monetary policy*. But many central banks have roles outside monetary policy--in particular, bank regulation and supervision. These roles are in certain cases granted their own level of independence, a subject to which I shall return later in the lecture.

Second, there is a useful distinction between *goal independence* and *instrument independence*.<sup>8</sup> A central bank's mission--its purposes and goals--are set out in its founding legislation and subsequent refinements. The purposes may be general, such as preserving the value of the currency, maintaining the stability of the financial system, and, in some countries, promoting economic growth or employment. These purposes have typically to be translated into operational goals--for instance, maintaining an inflation rate of 2 percent. The question of goal independence is whether the central bank itself establishes the operational goals or whether some other official body does so. Examples of such bodies are the finance ministry or the cabinet. If the central bank sets

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<sup>7</sup> See also Posen (1995) and Forder (1996).

<sup>8</sup> This distinction was introduced by Guy Debelle and the present author; see Debelle and Fischer (1994) and Fischer (1995a).

the operational goals, it has *goal independence*; if those operational goals are defined by some other body, the central bank does not have goal independence.

The academic literature was developed during the early 1990s when the Federal Reserve had already been given its statutory mandate of maximum employment and price stability. After careful deliberation, the Federal Open Market Committee (FOMC) clarified that inflation of 2 percent is most consistent with the goal of price stability.

The powers and instruments the central bank has at its command are also generally specified in legislation. If the central bank has control over the policy instruments it has been assigned, it has *instrument independence*. Virtually every central bank has the authority to engage in asset market transactions, with the goal of setting a specific--typically short-term--interest rate or, closely related, of controlling the money supply. There have been proposals--for instance, by Milton Friedman--that the central bank be required to cause the money supply to grow at a constant rate, 4 percent. Such a central bank would have neither instrument nor goal independence.

Third, the power to set the short-term interest rate or the money supply is a formidable one. Well exercised, that power can support the stability of both prices and output; poorly exercised, it can create economic havoc. Any institution to which such responsibility has been delegated must be held accountable for carrying out its mission effectively and efficiently. In almost all countries, the central bank's accountability is enforced by requiring regular reporting on monetary policy actions and outcomes to the legislature, to the executive branch, and to the public. The formal centerpiece of the required reporting is generally exercised by the regular publication and presentation to the legislature of an inflation report or monetary policy report, followed by public

hearings on the report and related matters. Accountability can be further enhanced by increasing the transparency of central banks about their operations.

Accountability of the central bank helps deal with the potential conflict between the benefits of shielding the central bank from political pressures and the fact that unelected officials--albeit officials who are commonly nominated by the government and, in many cases, confirmed by the legislative branch--are determining policies critical to the country's economy.

Fourth, there is an argument in the profession about the difficulties of presenting a central bank with more than one policy goal. The argument is often put as "You need as many instruments of policy as you have policy goals," a result often attributed to Jan Tinbergen, co-winner of the first Nobel Prize in economics.<sup>9</sup> Tinbergen's result is correct if the targets have to be achieved exactly, but it is not correct if there are tradeoffs among the goals of policy, and the central bank utility or loss function includes the costs of missing each of the targets and the interactions among them.<sup>10</sup>

Based on the Tinbergen result, central banks whose mandated goals are narrow, such as having only an inflation target, are often considered to have more independence than central banks with additional targets or with multifaceted objectives. In practice, I doubt that any central bank targets inflation to the exclusion of all other outcomes. For example, the Bundesbank was generally thought to have a very strict focus on inflation in the years in which it had an independent monetary policy before the founding of the European Central Bank. But researchers who have studied the Bundesbank's policies of

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<sup>9</sup> See Tinbergen (1952).

<sup>10</sup> For further discussion of this issue, see Fischer (2010), a set of comments given as part of a panel at the Reserve Bank of Australia 50th Anniversary Symposium.

that period have concluded that it likely responded to deviations from target of both expected inflation and output growth.<sup>11</sup> I do not regard the Fed's dual mandate, which gives it both an inflation and an employment goal, as causing significant difficulties for Fed decisionmakers, and note that if the Fed had only an inflation target and found itself in the situation we find ourselves today, it would face precisely the same difficulty we currently face--how to get the inflation rate up to meet the inflation target.

### **The Fed Today**

The Federal Reserve System's current mandate of maximum employment, stable prices, and moderate long-term interest rates was established by an amendment to the Federal Reserve Act in 1977. The Congress, in effect, recognized the principle of instrument independence by requiring that the Federal Reserve Board report semiannually directly to the Congress about the Board's and the FOMC's plans to meet these objectives and by exempting monetary policy from Government Accountability Office (GAO) review as part of the Full Employment and Balanced Growth Act of 1978.

By passing these two pieces of legislation, the Congress put in place a mechanism for holding the Fed accountable for meeting its statutory mandate. A key venue for reviewing the Fed's approach to pursuing its mandated goals remains the semiannual testimony of the Chair, along with the associated *Monetary Policy Report*. In general, the provision of such an accountability structure is important, since, as previously noted, accountability to elected officials and the public is an essential complement to central bank independence.<sup>12</sup>

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<sup>11</sup> See Gerberding, Worms, and Seitz (2004); and Clarida and Gertler (1997).

<sup>12</sup> Not only do the principles of democracy demand such accountability, but economic theory also points to accountability as one way of addressing an inflationary bias that might otherwise take hold. I have in mind here the principal-agent model of Walsh (1995).

The Federal Reserve's accountability structure has been largely stable since the 1970s reforms. At the same time, the Federal Reserve has greatly augmented its public communications about its economic outlook and its policy strategy. Over the past 20 years, this augmentation includes the release, beginning in 1994, of postmeeting statements explaining policy decisions.<sup>13</sup> Other changes include the inclusion of roll call votes in the postmeeting statements in 2002; the release of the FOMC minutes three weeks after the meeting rather than following the subsequent meeting, beginning in 2005; the introduction of the Summary of Economic Projections in 2007 and the inclusion in 2012 of the "dot plot" showing FOMC participants' federal funds rate projections; the Chair's quarterly postmeeting press conferences in 2011; and the issuance in 2012 of the FOMC's Statement on Longer-Run Goals and Monetary Policy Strategy, which is reaffirmed every January.<sup>14</sup>

This increased transparency has been a key complement to the Fed's independence and accountability by regularly demonstrating that the Fed has been appropriately pursuing its mandated goals. Transparency can also make monetary policy more effective by helping to guide the public's expectations and clarify the Committee's policy intentions.<sup>15</sup>

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<sup>13</sup> Prior to 1999, the FOMC released statements only after meetings at which the federal funds rate was changed. Over time, the statements released by the FOMC have become more informative about the Committee's views of the economy and policy.

<sup>14</sup> There are a number of additional transparency improvements that are less directly related to monetary policy communication, including detailed reports on liquidity facility and lending programs during the financial crisis, which can be found on the Board's website at [www.federalreserve.gov/monetarypolicy/bst\\_reports.htm](http://www.federalreserve.gov/monetarypolicy/bst_reports.htm). In addition, a full list of securities held in the System Open Market Account portfolio is available on the Federal Reserve Bank of New York's website at [www.newyorkfed.org/markets/soma/sysopen\\_accholdings.html](http://www.newyorkfed.org/markets/soma/sysopen_accholdings.html).

<sup>15</sup> Given the benefits of transparency, central banks around the world have also greatly augmented their public communications over the past 20 years. Recent papers measuring transparency across central banks include Crowe and Meade (2008) and Dincer and Eichengreen (2014). Dincer and Eichengreen (2014) conclude that almost all of the central banks around the world had greater transparency in 2010 than they

The Fed, like other central banks, does appropriately retain some matters for private discussions. These discussions often contain market-sensitive information and may, by necessity, involve frank assessments of market- or even firm-specific conditions as well as outside-the-box ideas needed to deal with evolving economic situations. These exceptions reflect the view that transparency should preserve the ability of policymakers to think out of the box and should not inhibit free give-and-take and the testing of ideas that is essential to reaching good decisions. Transcripts of the FOMC's meetings are made available with a five-year lag, allowing researchers to study the closed-door discussions after an appropriate time has elapsed.

### **Central Bank Independence and New Challenges**

#### *Low inflation*

The basic governance structure set up in the late 1970s was envisioned as a means to monitor and encourage the Federal Reserve to pursue its mandates, and an aggressive and successful campaign to bring down inflation followed. Indeed, the high inflation of the 1970s and early 1980s was one of the primary motivations for the broadening and deepening of monetary policy independence worldwide.

Today consumer price inflation remains *below* the FOMC's objective of 2 percent. According to the personal consumption expenditures index, the 12-month change in core prices (prices excluding the food and energy categories) has been around 1-1/4 to 1-1/2 percent since the beginning of 2013. At the September 2015 FOMC

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did in 1998. See for example Figure 1 in that paper. These measures of transparency cover a variety of factors, including the openness about policy objectives and economic data, disclosures about the procedures used in deliberations, the speed of such disclosures, and transparency about the operational aspects of meeting targets.

meeting, participants saw inflation as very low this year but expected it to pick up notably next year and rise further in 2017.<sup>16</sup>

Although the presence of low inflation makes the traditional inflationary bias less of an immediate concern, actions that would compromise monetary policy independence would still be dangerous. The anchoring of inflation expectations has been a hard-fought product of the disinflation of the 1980s and subsequent Federal Reserve policy. Today, even with low inflation, the balance of evidence suggests that survey-based measures of longer-term inflation expectations have likely remained fairly steady and consistent with our objective. The anchoring of these expectations is due in great part, I suspect, to the continued credibility of the Fed's independence from political interference, along with the adoption of the explicit inflation target of 2 percent.

To put this point clearly, the concern over the effects of political interference in monetary policy remains as valid in practice when inflation is too low as when inflation is too high. That is primarily because political horizons are typically shorter than those that need to be taken into account in making monetary policy decisions.

Recently, there have been proposals to restrict monetary policy independence. One proposal, labeled "Audit the Fed," would subject the Federal Reserve's conduct of monetary policy to unlimited congressional *policy* audits.<sup>17</sup> (Financial audits are already conducted regularly.)<sup>18</sup>

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<sup>16</sup> See the Summary of Economic Projections submitted in conjunction with the September 2015 FOMC meeting, an addendum to Board of Governors (2015).

<sup>17</sup> See Federal Reserve Transparency Act of 2015, H.R. 24, 114 Cong. (2015); and Federal Reserve Transparency Act of 2015, S. 264, 114 Cong. (2015).

<sup>18</sup> Audited financial statements for the Federal Reserve System can be found on the Board's website at [www.federalreserve.gov/monetarypolicy/bst\\_fedfinancials.htm](http://www.federalreserve.gov/monetarypolicy/bst_fedfinancials.htm).

Another proposal would require the FOMC to adopt and follow a specific equation in setting monetary policy and to face immediate congressional hearings and investigation by the GAO whenever the FOMC deviates from the policy dictated by that equation.<sup>19</sup> In the terminology I have used in this speech, these proposals could accurately be described more as restrictions on the Federal Reserve's instrument independence than as measures that would increase transparency or accountability. They would thus represent a departure from the modern governance structure that has come to characterize the Fed and leading central banks around the world. Since the Federal Reserve is already very transparent about its monetary policy decisions, review by the GAO would not meaningfully augment communications with the public but would instead reflect an effort by the Congress to influence the Fed's policy decisions.

We should recognize that if a GAO review and, likely, a congressional hearing were held every time a monetary policy decision deviated from a simple equation, as has been proposed, the Fed would be subjected to the very sort of political pressure from which experience suggests central banks should be independent. Instead, a modern governance framework calls for the political system to give the central bank a mandate along with the operational freedom to pursue that mandate, supported by transparency and accountability.<sup>20</sup>

In addition, using a central bank as a source of revenue to cover the cost of a fiscal program is dangerous to its independence. For example, recently some have proposed that the Fed be used to provide revenue to fund specific government initiatives,

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<sup>19</sup> See the Fed Oversight Reform and Modernization Act of 2015, H.R. 3189, 114 Cong. (2015).

<sup>20</sup> For additional discussion of these proposals, see Powell (2015).

which amounts to quasi-fiscal policy, with manifold implications for central bank independence as well as for the quality of fiscal policy decisions.<sup>21</sup>

*The Great Recession and the use of unconventional central bank instruments*

The basic delegated-authority governance framework I have described--mandated goals, instrument independence, and accountability--has allowed the Federal Reserve to respond to dramatic changes in the economic environment over the past 20 years. In particular, during the Great Recession, instrument independence afforded the FOMC the flexibility needed to develop new tools that could address the large and extraordinary challenges it faced in pursuing its dual mandate. The legislative proposals just discussed appear to be motivated by the belief that the Fed's response during the crisis was somehow ineffective or inappropriate. In fact, the Fed's response was a carefully considered exercise of instrument independence that was effective, appropriate, and necessary in light of the congressional mandate to which it is held accountable. Indeed, without those operations, the U.S. economy would have suffered a significantly deeper and longer recession than the very substantial recession we did suffer.

*Financial stability*

The research on monetary policy independence at the end of the 20th century was conducted on the assumption that the central bank was focused on its direct macroeconomic mandates such as inflation and employment. After the global financial crisis, we cannot ignore the fact that central banks are typically tasked with multiple responsibilities, often among them, preserving or contributing to financial stability.

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<sup>21</sup> Discussions and descriptions of issues related to central banking remittances to fiscal authorities and the challenges involved are discussed in Bank for International Settlements (2003), particularly the chapter "Central Bank Balance Sheets and Fiscal Operations."

These responsibilities do not represent a new mandate--they were the impetus behind the 1913 legislation setting up the Federal Reserve System and, in a somewhat subordinate role, behind the legislation setting up both the independent Bank of England and the European Central Bank as well as many other central banks whose legal framework has changed in the past two decades.<sup>22</sup> But these responsibilities have received far more emphasis following the financial crisis. As has long been known, a central bank must take into account risks to financial stability if it is to help achieve good macroeconomic performance.<sup>23</sup>

Could central bank involvement in dealing with potential financial instability present a challenge to central bank independence? In answering this question, we need to consider an important difference between the use of traditional monetary policy and the use of macroprudential policies. Macroprudential policies are typically aimed at a specific sector. Often the housing sector is disproportionately involved in financial crises.

In the face of an incipient bubble growing in the housing sector at a time when inflation and unemployment are at their target levels, the first instinct of regulators and others--the central bank among them--is to turn to macroprudential instruments, such as constraints on the loan-to-value ratio or the debt-service-to-income ratio of borrowers. However, doing so would affect particular sectors of the population. This difficulty can, to some extent, be dealt with by tailoring the macroprudential measures in ways that

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<sup>22</sup> Recall that the Federal Reserve was itself created in response to a severe financial panic, the Panic of 1907. This panic led to the creation of the National Monetary Commission, whose 1911 report was a major factor in the creation of the Federal Reserve Act, signed into law in 1913.

<sup>23</sup> See, for example, Tarullo (2014).

soften their effect on groups of particular concern.<sup>24</sup> Nonetheless, the housing issue is often politically important, and it could be argued that the political authorities should have some representation in discussing measures taken to deal with it.

This representation can be done as in the British case by having a separate committee to make financial stability decisions, the Financial Policy Committee (FPC), located in the Bank of England, whose membership is different from that of the Monetary Policy Committee and on which also sits a nonvoting member from the U.K. Treasury.<sup>25</sup> In the U.S. case, the Financial Stability Oversight Council is a coordinating committee, with all of the principal regulators as members and the Secretary of the Treasury as chairman. Because the member regulatory agencies are independent, coordination among them--the function of the FSOC--is critical to the financial regulatory system's success in addressing risks to financial stability.

There are many other models for the governance of the responsibility for financial stability. For instance, in Australia, there is a single integrated prudential regulator, the Australian Prudential Regulation Authority, as well as the Council of Financial Regulators, whose chair is the governor of the Reserve Bank of Australia and whose members are drawn from the central bank, the prudential authority, the Australian Securities and Investments Commission, and the Treasury. These various approaches

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<sup>24</sup> The use of the federal funds rate also affects particular sectors more than others--but that effect is softened by being spread over the entire economy.

<sup>25</sup> A few of the members--namely, the governor and deputy governors of the Bank of England--are on both the Monetary Policy Committee and the FPC, but the remaining members do not overlap. The FPC members are the governor, three of the deputy governors, the chief executive of the Financial Conduct Authority, the bank's executive director for financial stability strategy and risk, four external members appointed by the chancellor, and a nonvoting representative of the Treasury. The current membership of the FPC is available on the Bank of England's website at [www.bankofengland.co.uk/about/Pages/people/fpc.aspx](http://www.bankofengland.co.uk/about/Pages/people/fpc.aspx).

each have their own merits, but the ultimate stress test for any particular institutional structure will, of course, come as these new governance structures face the challenges of dealing with financial stress and potential financial crises.

The structure of the FPC ensures that the Bank of England is nearly fully independent with regard to financial stability.<sup>26</sup> The Fed does not have that independence, even though it has been assigned the responsibility of helping to ensure financial stability.

I have heard foreign central bankers argue, “You can’t be independent in one function (monetary policy) and not independent in another (financial stability), without the nonindependence with respect to financial stability seeping over to weaken the independence of monetary policy.” I do not believe this is correct--as proof, I think each of us feels and is more independent in some of the decisions we make about our lives than in others. Thus, I think the Fed retains its monetary policy independence despite its nonindependence with respect to financial stability policy.

No doubt economists will long debate the appropriate institutional structure for financial stability authority. Because financial markets and political institutions differ widely across economies and because historical accident affects the current situation in each, it seems unlikely that any single set of arrangements will be optimal in all cases.<sup>27</sup> In any event, as time and future potential crises go by--and may they be few and far

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<sup>26</sup> The macroprudential tools that the FPC may use were granted to it by specific acts of the U.K. Parliament. In addition, each year, the chancellor remits a letter to the FPC on issues that are of particular relevance to the government.

<sup>27</sup> This is an instance of a general point made by Avinash Dixit (1996).

between--there will be far more experience on which to base the choice of regulatory system, and changes will quite likely be made.<sup>28</sup>

Finally, as I mentioned at the Federal Reserve Bank of Boston last month, as a result of the currently limited nature of the macroprudential toolkit, there could be times when adjustments in monetary policy itself should be discussed as a means to curb emerging risks to financial stability. Alternatively, financial stability considerations can sometimes point to the need for accommodative monetary policy. For example, the accommodative U.S. monetary policy since 2008 has helped repair the balance sheets of households, nonfinancial firms, and the financial sector. The challenge to monetary policy independence then derives from the use of a single tool to achieve multiple outcomes across different time horizons. I do not regard this challenge as a serious constraint on monetary policy independence, but rather as an inherent aspect of the fact that monetary policy works in the first instance through financial markets and financial institutions.

The multifaceted nature of macroprudential policy and its interactions with the governance of monetary policy have important consequences that are not yet fully understood. The interaction between financial stability and monetary policy, its implications for central bank independence, and the resulting effects on macroeconomic outcomes deserve extensive study that is already well under way but probably still in its infancy.

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<sup>28</sup> In the U.K. case, all responsibility for supervision of the financial sector was taken away from the Bank of England shortly after it was given its monetary policy independence; it was returned to the bank in the reforms implemented after the outbreak of the global financial crisis.

## **Conclusion**

The economic environment has changed considerably in the quarter-century since economists began the careful study of the theory and evidence on the potential benefits of monetary policy independence. Over that time, central bankers have had to make use of their tools--some of them not used previously--to meet unprecedented challenges.

Without the independence to pursue their mandates, this work would have been impossible. But following the global financial crisis, we are living in a different world, one in which issues of financial stability have moved out of the shadows and into the center of our concerns. The resulting challenges are only beginning to be understood--and they need to be understood and taken seriously if we are to reduce the probability of future financial crises.

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