

Independence and accountability: Congress and the Fed in a polarized era

By Sarah Binder and Mark Spindel

INTRODUCTION



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At the Federal Reserve System's centennial in 2013, then Chairman Ben Bernanke pinpointed the dilemma at the heart of Federal Reserve independence:

As an institution, the Federal Reserve must continue to be willing to make tough decisions, based on objective, empirical analysis and without regard to political pressure. But...we must also recognize that the Fed's ability to make and implement such decisions ultimately depends on the public's understanding and acceptance of our actions... Ultimately, the legitimacy of our policies rests on the understanding and support of the broader American public, whose interests we are working to serve.¹

The Fed's evolution over its first century into a powerful, more macro-economic focused and more independent policymaker and financial regulator belies the Fed's existential dependence on political support for its policy decisions. Bernanke highlighted the importance of *public* acceptance for the Fed, making Congress—the national institution that channels public discontent and holds exclusive authority to rewrite the Federal Reserve Act—the proximate audience for Fed policymakers. As Bernanke advised his successor, Janet Yellen, “Congress is our boss.”²

As the Fed's legislative overseer, Congress attempts to insulate the Federal Reserve from political pressure while holding it accountable for its monetary policy decisions. The tradeoff was particularly acute and contested in the wake of the recent global financial crisis when the central bank lowered interest rates to zero and was compelled to deploy unconventional tools designed to rescue the financial system, prevent an even more dire economic collapse, and spur an economic recovery.

¹ Ben Bernanke, “Concluding Remarks,” The Ceremony Commemorating the Centennial of the Federal Reserve Act, Federal Reserve, December 16, 2013, <http://www.federalreserve.gov/newsevents/speech/bernanke20131216b.htm> [Accessed February 18, 2016].

² Federal Reserve, “Transcript of Chairman Ben Bernanke's Press Conference, December 18,” <http://www.federalreserve.gov/monetarypolicy/fomcpresconf20131218.htm> [Accessed February 18, 2016], p. 29.

Pumping trillions of dollars into the economy, via emergency lending programs insulated from congressional oversight, raised the ire of politicians on the left and right.

In this paper, we explore the implications of the Federal Reserve's reliance on political support for effective policy. First, we define what it means for the Fed to be a *political institution*. Next, we explore why and when the Fed's performance compels lawmakers to threaten to alter the balance between independence and accountability. Finally, we examine how the rise of polarized and competitive political parties shapes the relationship between Congress and the Fed in the wake of the global financial crisis. We conclude that the Fed's pursuit of unconventional monetary policy in a polarized era has diminished political support for the Fed—weakening the nation's recovery from crisis and sowing doubt about the Fed's capacity to fight the next recession.

BALANCING ACCOUNTABILITY AND INDEPENDENCE

The Fed's power derives from and depends upon the support of elected officials precisely because the Fed is a product of the political system.

The tense relationship between Congress and the Federal Reserve in the wake of the crisis reminds us that the Fed is inevitably a political institution. Labeling the Fed as “political” does not mean that the Fed's policy choices are *politicized*. Policymaking within the Federal Open Market Committee (FOMC) is not a matter of applying partisan prescriptions to generate monetary policy, although such accusations recur often. Given internal frictions, especially during times of economic stress, the

Fed chair faces the challenge of building a coalition within (and beyond) the FOMC to support a preferred policy outcome, just as committee or party leaders in Congress or Supreme Court justices work to secure majorities for their proposals or opinions. Bernanke described a central challenge of leading the Fed in precisely this way: “...in Washington or any other political context you have to think about: how can you sell what you want to do to others who are involved in the process.”³ That said, the Fed is not a partisan body reflecting the views of presidents who appoint the Board of Governors or of boards of directors who select the reserve bank presidents who help craft monetary policy. Decision-making inside the Fed involves technocratic, macroeconomic policy expertise, even within a political institution.

We deem the Fed “political” because successive generations of politicians have made and remade the Federal Reserve System to reflect (often shifting) partisan, political and economic priorities. And as Bernanke emphasized at the Fed's centennial, the Fed's power derives from and depends upon the support of elected officials precisely because the Fed is a product of the political system. Institutions are political not because they are permeated by partisan decision-making but because politicians endow them with the power to exercise public authority on behalf of a diverse and at times polarized nation.

Politicians, however, face a dilemma in allocating power to a central bank. Given the impact on output, inflation, and employment, macroeconomic decisions made by central banks are among the most important policy choices rendered in a democracy. Monetary policy affects interest rates, which in turn shape the public's borrowing costs, the

³ Stephen Dubner, “Ben Bernanke Gives Himself a Grade: A New Freakonomics Radio Podcast,” *Freakonomics: The Hidden Side of Everything*, Dec. 3, 2015, <http://freakonomics.com/2015/12/03/ben-bernanke-gives-himself-a-grade-a-new-freakonomics-radio-podcast/> [Accessed February 27, 2016].

availability of credit, and ultimately household wealth. As public demand for goods and services expands, economic growth ensues as businesses increase production and employ more workers. The dilemma arises from politicians' electoral incentives, which lead them to want to stimulate the economy—particularly in the run up to an election. That short-term strategy, however, has long-term costs: It increases the chances of inflation and brings an inevitable economic recessionary payback.

The solution worldwide has been to try and insulate central bankers from political interference that might otherwise induce monetary policymakers to keep interest rates too low for too long. Indeed, many theorists of central bank independence suggest that lawmakers design central banks to constrain themselves from opportunistically inflating the economy for near-term electoral gain. Knowing that the economy will be better off in the future if inflation is tamed, politicians place their nation's monetary printing press out of reach. And an added bonus: Delegating monetary policy to an independent body prevents the opposition party from juicing the economy when it gains control of government.⁴ More autonomous central banks also offer convenient targets for politicians eager to avoid blame for a poor economy.

Lawmakers face a tradeoff between central bank independence and democratic accountability.

But a fully autonomous central bank is not necessarily politically optimal for legislators: Independence precludes a role for re-election-seeking lawmakers to oversee macroeconomic policy and to hold central bankers accountable for their policy choices. In short, lawmakers face a tradeoff between central bank independence and democratic accountability. Contrary to theory, lawmakers seldom sacrifice short-term interests for the longer view. The Federal Reserve Act has not been fixed in stone since its enactment in 1913: After sharp economic downturns, Congress routinely re-opens the Act to impose new responsibilities on the Fed, requires greater transparency, or clips the Fed's powers.

Why and when do lawmakers attempt to rebalance the accountability and autonomy of the Fed? Below, we show that legislators pay little attention to the Fed in robust economic times: Taking credit for a robust economy can be thorny because monetary policy does not deliver geographically concentrated benefits.⁵ Concentration of power in the hands of recent Fed chairs further undermines the credibility of legislators' efforts to claim credit for the economy. In theory, such considerations should deter David Mayhew's famous "single-minded seekers of re-election" from routinely investing time or resources in the oversight of monetary policy and the Fed.⁶ Conversely, the dimensions of monetary policy that complicate congressional credit claiming facilitate blame avoidance. With central bankers at least partially responsible for economic conditions, lawmakers can freely scapegoat the Fed for whatever ails the economy. Lawmakers might revamp the Federal Reserve Act, rebalancing independence and accountability. Or legislators might simply threaten to do so. Either strategy could lead the Fed to anticipate and possibly accommodate congressional views. In short, when the economy sours, we should expect legislators to introduce more bills targeting the powers and structure of the Fed.

⁴ See for example William Bernhard, *Banking on Reform: Political Parties and Central Bank Independence in the Industrial Democracies* (Ann Arbor, MI: University of Michigan Press, 2002).

⁵ James Alt, "'Leaning into the Wind or Ducking out of the Storm?'" in *Politics and Economics in the Eighties*, eds., Alberto Alesina and Geoffrey Carliner (Chicago: University of Chicago Press, 1991).

⁶ David R. Mayhew, *Congress: The Electoral Connection* (New Haven, CT: Yale University Press, 1974).

Because the state of the economy shapes party fortunes at the ballot box, we expect a partisan cast to legislative proposals that target the Fed. Lower-income, Democratic voters are more often debtors than creditors, so Democratic lawmakers might be more prone to attack the Fed when unemployment is high. Conversely, higher-income, Republican voters are more likely to be creditors, and thus their representatives might be more likely to focus on the Fed when inflation rises. That said, the Fed's dual mandate from Congress requires the Fed to attend to both inflation and unemployment. So we might expect Democratic criticism of the Fed to diminish after Congress clarified the dual mandate in the 1977 amendments to the Federal Reserve Act. In contrast, Republican attention might have increased after adoption of the dual mandate. Indeed, as we explore elsewhere, when Congress clarified the Fed's dual mandate in 1977, most GOP lawmakers cared more about mandating price stability rather than maximum employment—believing that the dual mandate's growth component could put the Fed's commitment to low inflation at risk.⁷

Like most national institutions, the Federal Reserve has been caught in the crosshairs of contemporary partisan polarization.

Recent changes in the makeup of the two political parties might also affect congressional attention to monetary policy. Like most national institutions, the Federal Reserve has been caught in the crosshairs of contemporary partisan polarization. Indeed, in the wake of the 2007 financial crisis, the parties reacted differently to the Fed's crisis-era monetary policies. Democratic leaders were generally quiescent about the Fed's unconventional policies while

GOP leaders and their presidential candidates excoriated the Fed, its Republican-appointed chairman Ben Bernanke, and its three rounds of large-scale asset purchases. Polarization (which breeds legislative deadlock) may undermine the credibility of lawmakers' threats to reform the Fed. Still, as we explore below, the Fed remains vulnerable to congressional intervention on those issues on which the parties agree. In the wake of financial and economic crises starting in 2007, the two parties agreed on a fair amount—including greater accountability of the Fed.

In short, during severe economic times, we should expect both parties to revisit the Federal Reserve Act. At such junctures, legislators could easily justify limiting Fed powers or, counter-intuitively, expanding them. Sometimes lawmakers view restrictions on the Fed's authority or more oversight as sufficient. Alternatively, by granting the Fed more power after economic crises, blame-averse lawmakers establish additional reasons to attack the Fed during the next, inevitable economic downturn. Indeed, rather than retrenching central bank authority and autonomy in the wake of financial disasters, politicians often have strong incentives to expand it. That said, empowering the Fed in crisis aftermath might simply reflect the lack of other regulators with sufficient expertise, breadth or prominence to share the Fed's responsibilities.

LEGISLATIVE ATTENTION TO THE FED, 1947-2014

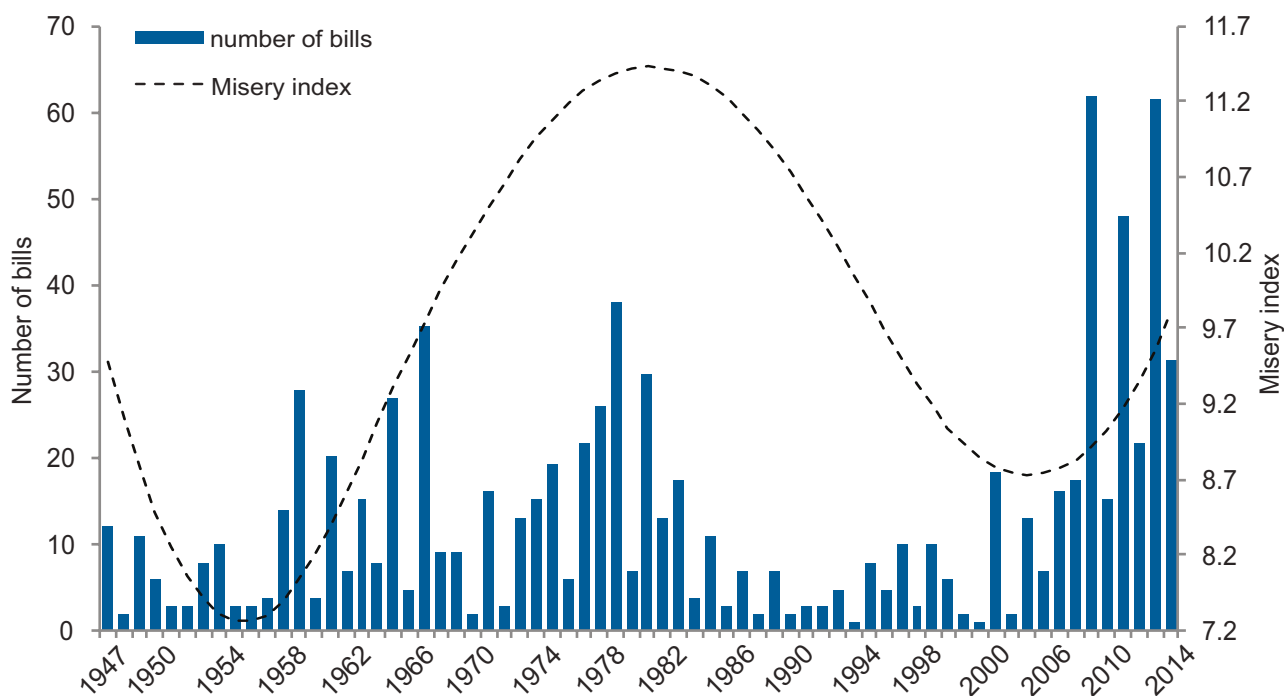
We measure lawmakers' attention to monetary policy by identifying all bills introduced in the House and Senate between 1947 and 2014 that address the power, structure, and governance of the Federal Reserve. We treat lawmakers' bill portfolios as statements of their issue agendas: Regardless of whether a bill becomes law, sponsoring a bill signals a lawmaker's policy and political priorities. We code the content of each bill along several dimensions, including whether the bill seeks to constrain or empower the Federal Reserve, increase or decrease its independence, centralize or decentralize power within the Federal Reserve System or alter the makeup of the Federal Reserve's

⁷ See Sarah Binder and Mark Spindel, "Monetary Politics: Congress and the Federal Reserve 1913-2015," Manuscript, January 2016.

Board of Governors.⁸ Overall, 879 bills were introduced in the House and Senate over these six and half decades, representing the legislative efforts of 333 lawmakers.

Bill sponsorship: We start by examining trends in bill sponsorship. Figure 1 shows the number of bills introduced each year.⁹ We overlay a smoothed “misery index”¹⁰ on the data to demonstrate the relationship between attention to the Fed and the state of the economy. The data suggest that legislative attention rises and falls coincident with economic conditions, particularly with the onset of recession in the late 1950s and early 1960s, the mid 1970s and early 1980s, and most recently during and after the Great Recession. Conversely, congressional attention drops precipitously at the onset of the so-called Great Moderation under Fed chairman Alan Greenspan in the middle of the 1980s.

Figure 1: Congressional attention to the Fed, 1947-2014



Source: See text. Figure shows number of House and Senate bills introduced each year that target the Federal Reserve, 1947-2014.

Bill sponsorships also provide a window into the two parties’ relative interest in the Fed, as shown in Figure 2 that displays of the relative annual proportion of Federal Reserve bills introduced by Democrats and Republicans. For most of the postwar period before the stagflationary 1970s, Republicans seemed disinterested in monetary policy. Granted, there were typically fewer Republicans than Democrats in the House and Senate over this long period of Democratic control of Congress. Still, Republican interest in the Fed begins to grow (as Democratic interest wanes)

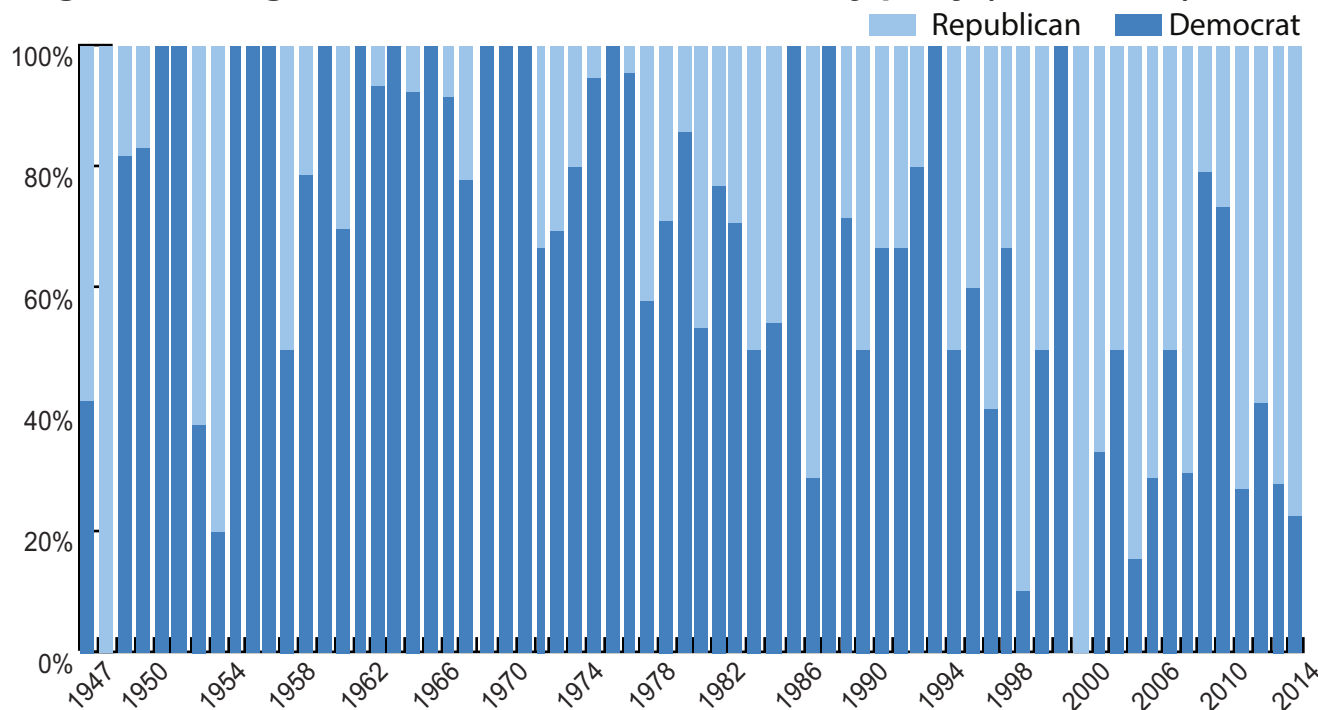
⁸ For the period 1947-2008 (80th-110th Congresses), we rely on the Congressional Bills Dataset maintained by Adler and Wilkerson (1947-2008) to identify bills that would amend the Federal Reserve Act. For the period 2009-2014, we locate relevant bills via Thomas.loc.gov. The content of each bill after 1972 can be determined from Thomas. For the period before 1973, we consult bill text available in CIS Congressional Bills, Resolutions & Laws on Microfiche (1933-2008).

⁹ Except where noted, bill counts include bills focused on both monetary and regulatory dimensions of the Federal Reserve Act.

¹⁰ The “misery index” sums up the unemployment and inflation rates. We obtain annual inflation rates (change in the CPI-U maintained by the Bureau of Labor Statistics) from McMahon (2014). Annual unemployment rates are available at Bureau of Labor Statistics (2014). http://data.bls.gov/timeseries/LNU04000000?years_option=all_years&periods_option=specific_periods&periods=Annual+Data.

after formal adoption of the dual mandate in 1977, long before the onset of GOP majorities in the 1994 elections. Once Democrats added promotion of maximum employment to the Fed's mandate, their incentives to seek further changes in the powers of the Fed diminished.

Figure 2: Congressional attention to the Fed, by party (1947–2014)



Source: See text. Figure shows relative proportion of legislative bills introduced each in House and Senate, by party, 1947-2014.

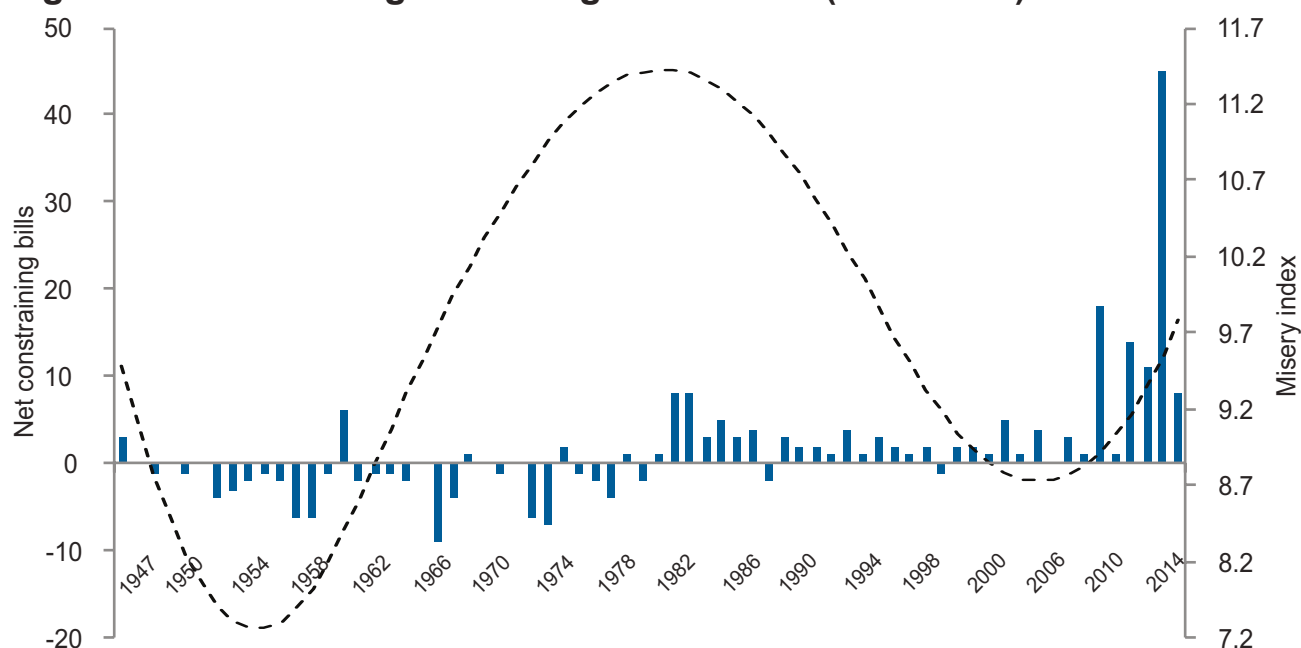
With the onset of the Great Recession and the implementation of unconventional monetary policy tools (after the Fed had lowered interest rates to effectively zero), the parties appeared to care equally about the central bank and its policies. Between 2007 and 2012, Democrats and Republicans introduced roughly the same number of bills, although Republicans' legislative activity climbed markedly in 2013 and 2014.¹¹ Partisans often differed in their prescriptions for the Fed. For example, Rep. Barney Frank of Massachusetts, as the ranking Democrat on the House Financial Services Committee in 2011, proposed stripping reserve bank presidents of their votes on the FOMC, a move that would empower presidential appointees and centralize power considerably within the Fed's D.C.-based Board of Governors. In contrast, Republican Kevin Brady of Texas in 2012 wanted all twelve reserve bank presidents to vote at each FOMC meeting (rather than the current rotating scheme that limits reserve bank presidents to five votes each meeting). As a group, district bank presidents tend to be more hawkish than the Board members, so expanding the FOMC would make it tougher on the Board to monopolize monetary policy. Still, on some issues—particularly related to transparency—coalitions sported odd bedfellows: Liberal Bernie Sanders (I-Vt.) and conservative David Vitter (R-La.) in 2010 advocated audits of the FOMC.

¹¹ After 2011, a majority of Republican-sponsored bills focused primarily on the Fed's regulatory rather than monetary policy authority, often calling for a repeal of the Dodd Frank Wall Street reform law enacted in 2010.

Substantive focus: A clear pattern also emerges when we examine the content of the bills. Below, we assess bills that would directly empower or constrain the Fed. Empowering bills provide the Federal Reserve System with new authority, for example extending the Fed's authority to purchase obligations directly from Treasury. Constraining bills limit the Fed's authority, for example by preventing the Fed from purchasing certain obligations from foreign governments or mandating new action by the Fed (such as requiring the Board of Governors to establish monthly targets for interest rates).¹² To determine net sentiment of lawmakers sponsoring bills, we subtract for each year the number of empowering bills from the number of constraining bills.

Figure 3 captures lawmakers' collective views about reining in the powers of the Fed over the postwar period (again with the smoothed misery series overlaid).¹³ Congressional attitudes about the powers of the Fed vary with the state of the economy. When the economy slips, lawmakers lean towards clipping the powers of the Fed and limiting its policymaking discretion. Granted, these are proposals, not new laws. Regardless of how lawmakers *legislate* in times of crisis, congressional sentiment leans towards new limits on Fed autonomy during economic downturns. When we isolate bills that would increase oversight of the Fed, such as bills to shorten the term of governors on the Board or to expand government audits of the FOMC, we find a similar counter-cyclical pattern.

Figure 3: Constraining bias of legislative bills (1947-2014)



Source: See text. Constraining bias is calculated as the number of bills introduced each year in both chambers to constrain the Fed minus bills to empower the Fed.

¹² If a bill includes provisions to both constrain and empower the Fed, we code the provisions separately and determine whether on net, the bill constrains or empowers the Fed. The drawback of the method is that we treat each provision equally, regardless of substantive significance. The benefit of the method is that we avoid subjective determinations of the relative importance of provisions in a single bill.

¹³ When the bars rise above zero on the Y-axis, lawmakers on balance favor constraining the Fed; when the bars fall below zero, lawmakers prefer to empower the Fed.

Counter-cyclical attention: For a more precise understanding of the dynamics of legislative attention to the Fed, we model the total number of sponsored bills each year as a function of the inflation and unemployment rates.¹⁴ When each party's legislative measures are combined, we find initial evidence that lawmakers' interest in the Fed is counter-cyclical. We find no effect for the inflation rate on the number of bills introduced, but legislators sponsor more bills targeting the Fed as unemployment rises. Modeling the parties separately, we find that economic conditions help shape Democratic lawmakers' priorities: Democrats pay more attention to the Fed when the unemployment rate is high (even after controlling for the rate in the previous year). This suggests that blame avoidance for a poor economy might shape Democrats' focus on the Fed since they turn their attention elsewhere as the economy improves. That said, after a Democratic Congress gave the Fed its dual mandate in 1977, Democrats' overall interest in the Fed waned. Legally mandating that the Fed maximize employment while maintaining stable prices might have lessened Democrats' perceived need to empower or constrain the Fed through micro-managed legislative threats. In short, both electoral and policy goals seem to drive Democrats' attention to the Fed.

Democratic House incumbents with narrow electoral margins are more likely to sponsor bills: The Fed offers an attractive target for vulnerable members seeking to deflect blame for a struggling economy.

In contrast, the state of the economy seems to matter less in generating Republican proposals. We find that GOP activism rises markedly after the dual mandate was created in the 1970s, and we see spikes in GOP bills in the late 1970s (in response to runaway inflation during the Carter administration) and again just before and after the Great Recession. Perhaps GOP misperceptions—for example, worrying recently about inflation in the absence of evidence—weaken any relationship between economic conditions and their party's activism more broadly. Low

levels of GOP attention to the Fed before the late 1970s might also explain the broken link, shortening the period over which we can detect the impact of economic misery. Finally, we observe that the recent rise in GOP attention to the Fed largely reflects the party's effort to repeal Dodd-Frank. Republicans' recent legislative activism might, per Occam's Razor, simply be political—driven more by GOP desire to reverse Democrats' regulatory gains than by concern about the state of the economy.

We can also test for the relevance of lawmakers' electoral incentives by modeling variation in sponsorship behavior at the individual level. We isolate bills introduced in a recent Congress (2011-12) and find that Democratic House incumbents with narrow electoral margins are more likely to sponsor bills: The Fed offers an attractive target for vulnerable members seeking to deflect blame for a struggling economy.¹⁵ Members of the House Financial Services panel are also more likely to address the Federal Reserve, as are more liberal Democrats. In contrast, Republican attention to the Fed seems divorced from electoral circumstance; only GOP members of the House financial services panel are disproportionately more likely to single out the Fed in their legislative agendas. Such attention could reflect panel members' stronger interests in monetary policy or their districts' greater reliance on the financial industry. If the latter, sponsoring measures addressing the Fed might still be electorally driven, as attention to district interests

¹⁴ We estimate a negative binomial regression given the count nature of the data, including lagged versions of both economic indicators. We reject the alternative Poisson model, given that the over-dispersion parameter (alpha) is significantly greater than zero. We also control for the creation of the dual mandate, since requiring the Fed to pursue both maximum employment and stable prices might reduce at least Democrats' attention to the Fed's conduct of monetary policy. The data include bills that address both the Fed's monetary and regulatory policy authority. Model results available in Binder and Spindel, "Monetary Politics."

¹⁵ We estimate three logit models to determine which lawmakers are more likely to introduce bills that target the Fed. We model House Democrats and Republicans in separate models and all senators in a single model. We control for political forces (electoral margin, ideology, freshman status) and institutional position (member of the relevant banking committee and whether or not the Fed has a reserve bank within the member's state). For model results, see Binder and Spindel, "Monetary Politics."

could be electorally valuable for committee members. In the Senate, we also find that electoral considerations matter: Senators who were due to face voters in 2012 were slightly more likely to introduce bills affecting the Fed compared to their colleagues not up for re-election. Institutional position also matters: Senators serving on the chamber's banking panel were disproportionately more likely to sponsor bills targeting the Fed.

In sum, electoral, partisan, and economic considerations drive legislators' attention to the Fed in distinct ways—contrary to accounts that dismiss lawmakers' interests in monetary policy or suggest lawmakers only care about limiting inflation. At the individual level, we find strong evidence that the timing and competitiveness of elections—as well as legislators' policy interests—mold lawmakers' activism regarding the Fed. Perceptions of Fed independence do not constrain lawmakers from signaling the need to hold the Fed more accountable for its policy choices. Economic conditions also matter. When the economy is sound, lawmakers propose fewer changes to the Federal Reserve Act; when the economy falters, lawmakers renew calls for reform of the Fed. Politicians' counter-cyclical attention to the Fed signals lawmakers' instinct for avoiding blame: Congress focuses on the Fed typically only after the horse has been let out of the barn.

CONGRESS AND THE FED IN A POLARIZED ERA

Today's political parties have reached century high levels of electoral competition and ideological polarization. The intersection of polarization and financial crisis allows us to evaluate congressional oversight of the Fed when the parties hold conflicting views about fiscal and monetary policy. In assessing oversight during and after the crisis, we note that lawmakers' interactions with the Fed took place in an environment of near zero interest rates. This “zero lower bound” was consequential politically because once rates hit zero, the Fed could no longer use conventional tools to stimulate the economy by lowering rates. Instead, the Fed innovated with new, largely untested unconventional monetary policies to rescue and restore the economy. As we explore below, such policies proved controversial on Capitol Hill and far beyond.

For example, the Fed's attempts to lower long-term borrowing rates through large-scale asset purchases (also known as QE, or quantitative easing) entailed the purchase of both Treasuries and mortgage-backed securities, assets underwritten by the housing finance giants Fannie Mae and Freddie Mac. QE supporters argued that because housing finance was at the heart of the financial crisis, bolstering housing markets by reducing long-term rates was essential. Critics, including the president of the Federal Reserve Bank of Richmond, Jeffrey Lacker, countered that “when the central bank buys private assets, it can tilt the playing field toward some borrowers at the expense of others, affecting the allocation of credit.”¹⁶ Unconventional monetary policies blurred the line between monetary and fiscal policy and put the Fed in the politically fraught position of choosing economic winners and losers. Many argued that distributional issues were better left to politicians. Indeed, many conservative critics viewed QE as outright debt monetization, leading Republicans to object that the Fed was simply financing the federal deficit by printing money.¹⁷

The Fed's unconventional policies also included a series of programs to inject short-term liquidity into frozen credit markets. Programs targeting the Fed's traditional borrowers—banks and other depository institutions—were conducted via the regional reserve banks' discount windows. Such programs included the opening of “currency swap lines” with foreign central banks, programs intended to inject U.S. dollars into foreign banks to discourage them from

¹⁶ Jeffrey M. Lacker and John A. Weinberg, “The Fed's Mortgage Favoritism,” *Wall Street Journal*, October 7, 2014, <http://www.wsj.com/articles/jeffrey-lacker-and-john-weinberg-the-feds-mortgage-favoritism-1412721776> [Accessed February 27, 2016].

¹⁷ Binyamin Appelbaum, “In Republican Attacks on the Fed, Experts See a Shift,” *New York Times*, April 7, 2015, B1, <http://www.nytimes.com/2015/04/08/business/economy/in-republican-attacks-on-the-fed-experts-see-a-shift.html> [Accessed February 27, 2016].

dumping their holdings of U.S. mortgages (which in turn would have increased the cost of credit for U.S. borrowers). These programs allowed the Fed and its regional reserve banks to provide loans to a broader range of counterparties than under non-crisis conditions and on the basis of a broader range of collateral than the Fed would typically allow.

Additional lending facilities were created by the Board of Governors to address liquidity problems beyond the conventional banking system. These programs relied on the Fed's "13(3)" statutory authority under the Federal Reserve Act (named for the section of the Act in which the authority is granted), empowering the Fed to be the lender of last resort in "unusual and exigent circumstances." Put simply, these programs provided loans to borrowers and investors in credit markets. The Commercial Paper Funding facility was typical of such lending plans: The New York Fed financed the purchase of commercial paper (e.g. very short-term corporate promissory notes) thereby pushing liquidity into corporate credit markets that depended on commercial paper. These programs reached well beyond the banking sector, providing liquidity for the "shadow" banking system—mutual funds, hedge funds, investment banks and other non-bank financial institutions.

The Fed's response to the crisis followed the advice of Walter Bagehot, who in 1873 wrote "Lombard Street: A Description of the Money Market," a treatise on how the Bank of England responded to a credit crisis in the late 1860s. Bagehot's "dictum" as it is known is typically summarized: "To avert panic, central banks should lend early and freely (i.e. without limit), to solvent firms, against good collateral, and at 'high rates.'"¹⁸ Assuming that recipients of the Fed's lending were solvent, the Fed responded predictably to the crisis: Finding innovative ways to inject liquidity into frozen credit markets within both traditional and shadow banking systems. The solvency requirement was essential, and later contested.¹⁹ If major institutions lacked capital and acceptable collateral, then additional fiscal—not monetary—intervention would have been required and was assumed by 2009 to be politically beyond congressional reach.

In lending to a broad range of bank and non-bank institutions—including traditional depository institutions, investment firms, insurance companies, industrial companies, and foreign central banks—the Fed sparked outrage. Critics demanded public disclosure of the recipients of the Fed's loans. It took legal and ultimately congressional action in 2010 to force the Fed to disclose recipients of its emergency loans, a move that revealed a who's who of corporate America and global finance. One account totaled the lending at \$1.2 trillion, including loans to Ford Motor Company, Toyota, Morgan Stanley and Citigroup, as well as to major banks in Europe and the Gulf States.²⁰ Lawmakers from both sides of the partisan aisle in 2011 objected to the imbalance of loans between Wall Street and Main Street. Asked one Republican from North Carolina at a June 2011 congressional hearing:

Why in hell does the Federal Reserve seem to be able to find the way to help these entities that are gigantic? They get help when the average businessperson down in eastern North Carolina, and probably across America, they can't even go to a bank they've been banking with for 15 or 20 years and get a loan.²¹

¹⁸ Bagehot, as summarized by Paul Tucker, "The Repertoire of Official Sector Interventions in the Financial System: Last Resort Lending, Market-Making, and Capital." Remarks at the Bank of Japan 2009 International Conference on the Financial System and Monetary Policy Implementation, Bank of Japan, Tokyo, May 27-28, 2009, p. 3.

¹⁹ On legality and legitimacy of unconventional monetary policy, see Philip A. Wallach, *To the Edge: Legality, Legitimacy, and the Responses to the 2008 Financial Crisis* (Washington, D.C.: Brookings Institution Press, 2015).

²⁰ Bradley Keoun and Phil Kuntz, "Wall Street Aristocracy Got \$1.2 Trillion in Secret Loans," *Bloomberg Business*, August 21, 2011, <http://www.bloomberg.com/news/articles/2011-08-21/wall-street-aristocracy-got-1-2-trillion-in-fed-s-secret-loans> [Accessed February 27, 2016].

²¹ Rep. Walter Jones (R-North Carolina) as cited in Keoun and Kuntz.

Critics charged that the Fed—operating under a cloak of secrecy with no expectation that its lending would be made public—cared only about saving Wall Street and global financial giants, with little concern about resolving the credit crisis more broadly in the American economy.

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In writing the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010, Democrats exploited their congressional majority to curtail the Fed's authority. Congress both gave the Fed new supervisory powers to regulate systemically important financial institutions, and imposed new limits on its monetary policy authority. Lawmakers blunted populist pressure to subject the FOMC to annual audits, but still imposed greater transparency on the Fed's lending programs and limited the scope of future emergency lending and the Fed's autonomy to conduct it. Congress also attempted to reduce conflicts of interest in the selection of reserve bank presidents by tweaking selection procedures for the heads of the reserve banks. Near uniform party lines prevailed in passing the final conference report, with only three GOP defectors joining most House and Senate Democrats in support of the bill.

Republican opposition to Dodd Frank reflected a broader, party-line effort to oppose most major Democratic initiatives while Democrats held the White House. As then Senate Minority Leader Mitch McConnell (R-Ky.) dubbed the strategy, Republicans sought to make Obama a one-term president. Sheer partisanship in other words shaped Republicans' views about the Fed, its leader, and its conduct of monetary policy. After the crisis, Republicans (occasionally joined by Democrats skittish about re-election) lobbed sharp attacks on the Fed. Senate Republicans, for example, repeatedly blocked confirmation of President Barack Obama's selection of Peter Diamond, a Nobel-Prize-winning economist for a seat on the Fed's Board of Governors. And nearly two dozen Republican economists, money managers and former GOP officials penned an unprecedented letter to Bernanke criticizing the FOMC's plan for large-scale asset purchases, arguing that the Fed's proposal risked debasing the dollar and stoking inflation. (Years later, their fears appear to have been unfounded.) One Republican presidential hopeful even threatened Bernanke should he step foot in Texas, while other Republicans spearheaded efforts to impose new audits on the Fed or to end the Fed altogether.

In contrast, most Democrats supported the Fed's unconventional policies after the crisis. As Senator Charles Schumer (D-N.Y.) put it in 2012, the Fed was the "only game in town" to restore the economy, given GOP opposition to more aggressive fiscal policy. To be sure, some Democrats argued that given its mandate, the Fed could do more to address the needs of American workers in the wake of the recession, including prominent economist and *New York Times* columnist Paul Krugman. Moreover, protesting both the Fed's role in precipitating the financial crisis as well as its subsequent policy choices, eleven Democrats joined eighteen Republican senators to oppose Bernanke's confirmation for a second term as chair of the Federal Reserve Board of Governors. Lawmakers on the left (such as Senator Bernie Sanders of Vermont) agreed with more conservative Republicans (such as Senator Richard Shelby of Alabama) that the Fed before and after the financial crisis catered too strongly to Wall Street interests at the expense of Main Street. Even as Democrats largely refrained from criticizing the Bernanke Fed, populist fringes of both parties found common ground in opposing the Fed's strategy of aiding Wall Street first.

Although partisans disagreed about the efficacy of QE and how to reform the Fed, congressional efforts by both parties to hold the Fed accountable likely limited Fed independence. Bernanke often reminded his audiences that

Party polarization in the wake of the crisis made clear to the Fed that its precarious political standing required greater responsiveness to the (often conflicting) demands of its congressional overseers.

policy independence was critical for making the right decisions for the economy, and that the Fed always made its decisions immune from short-term political influence. Still, Congress's aggressive oversight of the Fed sent strong signals to the Fed that it would have to become more transparent about its policies and more responsive to its critics to forestall stronger limitations on its powers. Bernanke heard the message clearly, noting in an interview with us in June 2014: "I learned in the crisis that transparency served broader purposes,

including maintaining the right relationship with Congress and explaining the Fed's policy choices to the public."²² Indeed, Bernanke reached out repeatedly to Main Street: He explained and defended monetary policy choices in college lectures, town hall meetings, and national televised interviews. A truly autonomous central bank might have felt little compulsion to explain itself to the public. Party polarization in the wake of the crisis made clear to the Fed that its precarious political standing required greater responsiveness to the (often conflicting) demands of its congressional overseers.

AUDIT POLITICS ON CAPITOL HILL

The Republican-led "Audit the Fed" campaign illustrates how partisan and electoral forces shape legislators' interventions in monetary policy over the postwar period. At issue is the authority of the Government Accountability Office (GAO) to annually review FOMC deliberations, decisions, or actions on monetary policy. By law, Congress empowers GAO to audit non-monetary policy functions.²³ But since 1978, Congress has exempted monetary policy from GAO's purview. Fed officials and their defenders oppose any new audits: They argue that GAO scrutiny of monetary policy would facilitate congressional meddling in monetary policy with adverse economic effects—undermining a key justification for central bank autonomy. In contrast, supporters of expanded audits suggest that GAO review of monetary policy would enhance congressional oversight of an often opaque Fed.

"Audit the Fed" is most often associated today with Senator Rand Paul (R-Ky.) and his father, former House member Ron Paul (R-Texas). But the Pauls are newcomers to the campaign. In Figure 4, we compile all legislative proposals introduced in the House or Senate between 1947 and 2014 that authorized audits of the Federal Reserve. We plot the year of each bill's introduction against its sponsor's ideology (as measured by Poole and Rosenthal's first dimension Common Space scores).²⁴ Three patterns stand out.

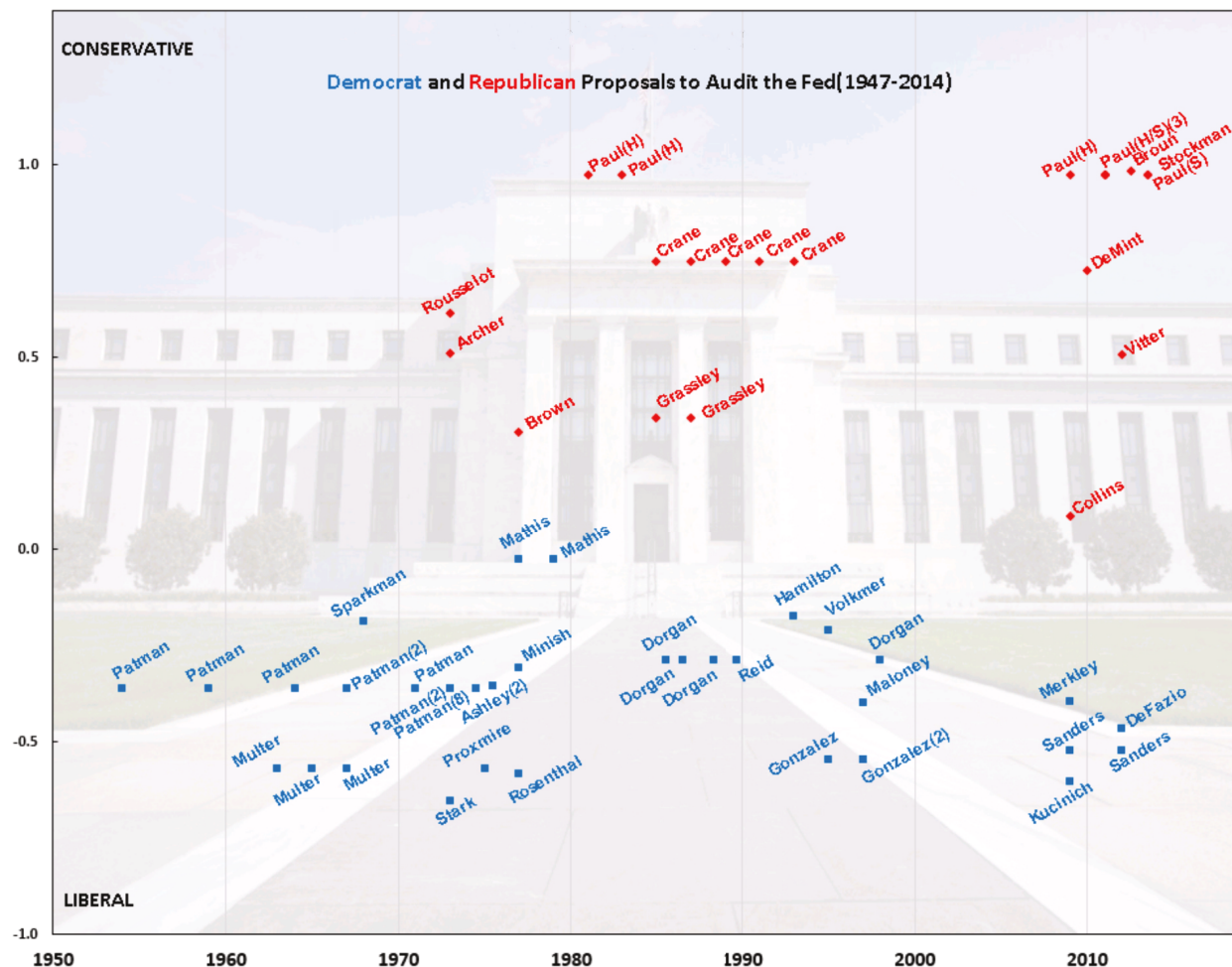
First, Democrat Rep. Wright Patman (D-Texas) introduced the original post-war audit measure more than sixty years ago. Patman was a longtime populist critic of the Fed who wanted to end Fed's independence, placing it back under the thumb of the Treasury Department and the White House and subjecting it to annual appropriations like every other government agency. Patman eventually bowed to the political reality that the Fed's budgetary autonomy was untouchable. Instead, he pushed to restore the power of GAO to audit the Fed's operations—a power GAO had

²² Ben Bernanke, Interview with authors, June 13, 2014, The Brookings Institution, Washington, D.C.

²³ In 2015, GAO conducted twelve non-monetary policy audits of the Federal Reserve System, as detailed in http://www.federalreserve.gov/newsevents/reform_audit_gao.htm [Accessed February 24, 2016].

²⁴ Common Space ideological scores locate House and Senate lawmakers along a left-right spectrum. Scores are available and explained here: <http://voteview.com/basic.htm> [Accessed February 29, 2016].

Figure 4: Who's the boss?



Source: See text. Proposals to audit the Fed are arrayed here by the ideology of their legislative sponsor (using Poole and Rosenthal's Common Space NOMINATE score to locate lawmakers along a left-right spectrum. <http://voteview.com/basic.htm> [Accessed February 29, 2016].

held from 1921 until 1933.²⁵ Over the years, Patman offered sixteen audit proposals, eight of them in 1975 alone. Congress in 1978 finally empowered GAO to audit the Fed after lawmakers reached a compromise to carve out the monetary policy exemption. More generally, over the broader postwar period, Democrats, not Republicans, have been the biggest boosters of Fed audits, sponsoring twice as many measures to audit the Fed as the Republicans.

Second, no one wants to audit the Fed in good economic times. The Great Moderation—in place from the mid-1980s through 2006—dampened congressional distrust of the Fed. Congress's counter-cyclical attention—heeding the Fed's performance only when the economy sours—gave the Fed a respite from most audit proposals starting in the economically robust 1990s and lasting until the onset of the most recent financial crisis.

Third, with the exception of a measure by moderate Sen. Susan Collins (R-Maine) to audit the Fed's emergency lending programs in 2009, recent audit proposals come exclusively from party fringes. Senator Paul—one of the most conservative members of the Senate GOP conference—is the standard bearer for the Fed's far-right critics

²⁵ Donald Kettl, *Leadership at the Fed* (New Haven: Yale University Press, 1986, 154).

today. Granted, the political center has all but disappeared in Congress. But the absence of centrist critics of the Fed today is still striking given that prominent moderates of the past—for example, Lee Hamilton (D-Ind.) —offered versions of audit proposals decades ago.

Partisanship—tempered by electoral circumstance—conditions lawmakers’ willingness to rebalance Fed autonomy and accountability.

These trends illustrate how politics and economics interact to drive lawmakers’ prescriptions for the Fed. Partisanship and ideology—tempered by the state of the economy—shape the likelihood that lawmakers will vote to rebalance the Fed’s autonomy against legislative demand for greater accountability. We see this conditionality in congressional votes to audit the Fed after the financial crisis. When the Senate considered its version of the

measure that would eventually be enacted as Dodd-Frank, back-to-back votes were taken on amendments offered by Senators Bernie Sanders (I-Vt.) and David Vitter (R-La.) to impose greater transparency on the Fed. The Vitter amendment would have added a tough audit-the-Fed program, removing the 1978 monetary policy exemption. But the Sanders amendment was voted on first. Instead of allowing the GAO to audit FOMC monetary policy decisions, Sanders proposed a compromise that mandated a one-time disclosure of the Fed’s emergency lending programs beginning in December 2007. The amendment was adopted 96-0.²⁶

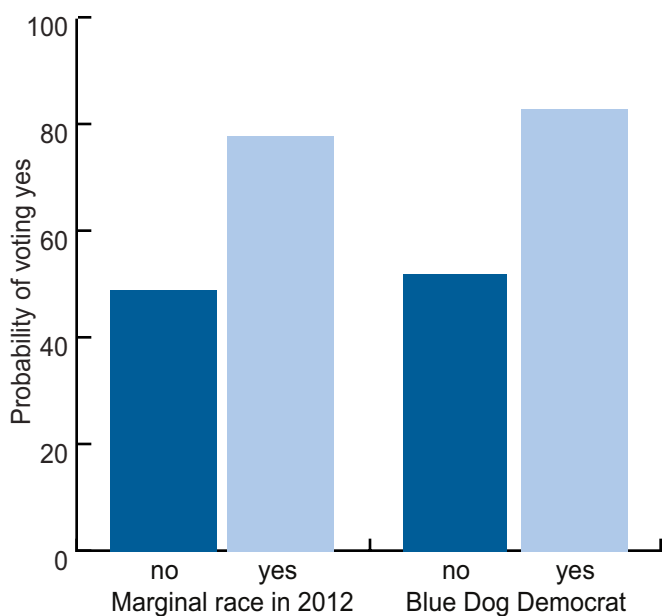
Unanimous adoption of Sanders’ amendment took the wind out of Vitter’s sails, and his amendment failed, 37-62. Republicans split 30-10 in favor; Democrats, 51-7 against. Partisan and electoral motivations shaped votes on Vitter’s amendment.²⁷ Republicans generally supported Vitter’s call for greater transparency. Of the ten Republican senators who opposed the bill, roughly half hailed from the moderate end of the GOP conference. And none of them—save Robert Bennett of Utah—faced voters in 2010. But just three days prior, Bennett had lost the nomination of Utah Republicans to run for re-election in November—eliminating the electoral cost of siding with the Fed to oppose a full audit. The seven Democrats who broke party lines were generally moderates, with two (Russ Feingold of Wisconsin and Blanche Lincoln of Arkansas) anticipating a close election that fall. (Despite voting for a right-wing, populist challenge to the Fed’s autonomy, both lost their races in November to conservative challengers.) Considered in tandem, the two votes suggest a range of political motives shaped lawmakers’ willingness to curtail Fed independence. Both parties strongly supported clearer Fed transparency, but only more conservative senators and those at risk of losing their seats favored a more intrusive audit of the Fed’s monetary policy decision making.

We find similar dynamics in the House. Janet Yellen was confirmed early in 2014 to succeed Bernanke. By fall, interest rates remained near zero, with inflation below the Fed’s formal two percent target rate. Still, Republicans continued to warn that the Fed’s unconventional policies would unleash runaway inflation, and thus urged the Fed to hike rates. Signaling the GOP’s continued dissatisfaction with the Fed’s performance, GOP leaders called up the audit bill for a floor vote that September. All but one Republican voted in favor of the bill, joined by 106 Democrats. Thirteen moderate Democrat members of the Blue Dog Caucus voted yea, yielding a thirty-percentage point gap in the likelihood that Blue Dogs (the House’s moderate Democrats) would vote aye compared to their more liberal colleagues

²⁶ Victoria McGrane and Michael Crittenden, “Senate Passes Amendment for One-Time Audit of Fed,” *Wall Street Journal*, May 11, 2010, <http://www.wsj.com/articles/SB10001424052748704250104575238130707230588?alg=y> [Accessed February 28, 2016].

²⁷ We model the vote on Vitter’s amendment as a function of senators’ home state interests (state unemployment rate and the percentage of the state employed in the finance industry), institutional position (a seat on the Senate Banking Committee) and electoral situation (whether or not they were running for re-election in 2010). Estimates available from authors.

Figure 5: Democratic support for auditing the Fed (Sept. 2014)



Source: See text. Probabilities generated from regression model discussed in footnote 28.

(see Figure 5).²⁸ Lawmakers in tight November races also disproportionately supported the bill: They were nearly thirty-points more likely to vote in favor compared to electorally safe Democrats. Still, despite strong Democratic support for the measure, it stood little chance of being enacted so long as the parties split control of the branches. The bill's dim prospects for enactment might help explain why so many Democrats broke ranks with their party leaders: Better to take the popular position with conservative constituencies than risk being caught on the wrong side of a vote. Partisanship—tempered by electoral circumstance—conditions lawmakers' willingness to rebalance Fed autonomy and accountability.

THE POWER OF LEGISLATIVE THREATS

Judging from Bernanke's reflections after leaving the Fed and from FOMC transcripts throughout the period, Fed officials in the wake of the crisis and recession

remained sensitive to criticism from the Hill. Bernanke's decade-long effort to build consensus within and outside the Fed for adoption of a formal, numerical inflation target provides a window into the Fed's relationship with Congress and its dependence on their political support. Bernanke in his memoir notes that a key goal when he first joined the Board in 2002 was to encourage his colleagues to consider a numerical inflation target—a benchmark that would anchor both monetary policy and inflation expectations in the medium term.²⁹ Under inflation targeting, a central bank compares its forecast for the future path of inflation against a pre-established inflation goal and adjusts monetary policy accordingly. In Bernanke's words at that time, inflation targeting allowed for “constrained discretion” by the central bank.³⁰ The Fed in January 2012 finally adopted a two-percent inflation target, a decade after Bernanke had first broached the subject with Board colleagues.

Why did it take so long for the Fed to adopt a target? Economists often distinguish between central bank *goal* and *instrument* independence. Because Congress writes the Fed's mandate into law, the Fed lacks goal independence. But central bankers typically argue that the Fed has instrument independence: The Fed should be “free to choose the means by which it seeks to achieve its goals.”³¹ To the extent that an inflation target is an instrument to achieve price stability, an independent Fed should have been able to adopt a target with little concern about congressional

²⁸ 113th Congress, House vote #504, September 17, 2014. We model the audit the Fed vote as a function of ideology and electoral forces, controlling for a lawmaker's representation of a regional reserve bank. Specifically, we control for whether a member represents the city or state in which a reserve bank is located, whether the member is retiring, won with less than or equal to 55 percent of the vote in 2012, or belonged to the Blue Dog Coalition. Blue Dog membership for 113th Congress available at http://ballotpedia.org/Blue_Dog_Coalition#113th_Congress_2 [Accessed February 25, 2016].

²⁹ Ben S. Bernanke, *The Courage to Act: A Memoir of a Crisis and its Aftermath* (New York: W.W. Norton & Company, 2015), p. 526.

³⁰ Ben S. Bernanke, “A Perspective on Inflation Targeting,” Washington Policy Conference on the National Association of Business Economists, March 25, 2003, Washington, D.C. <http://www.federalreserve.gov/Boarddocs/Speeches/2003/20030325/default.htm> [Accessed February 28, 2016].

³¹ Guy Debelle and Stanley Fischer, “How Independent Should A Central Bank Be?” Center for Economic Policy Research, Stanford University, 1994, <http://www.bostonfed.org/economic/conf/conf38/conf38f.pdf> [Accessed February 28, 2016], p. 197.

reaction. And yet during several years of debating adoption of a target, FOMC officials showed acute sensitivity to whether pivotal legislators would support the Fed's adoption of a target.

Adoption of an inflation target proceeded only with the concurrence of the Fed's congressional boss.

FOMC transcripts reveal the political dynamics and degree to which the committee felt beholden to their congressional "bosses." Consider, for example, concerns noted in October 2006 by then president of the Federal Reserve Bank of Chicago, Michael Moskow, when members of the FOMC discussed whether to adopt a numerical inflation target: "For me the biggest issue is the dual mandate responsibility and our relationship to the Congress.

Clearly, a persuasive case must be made that we will continue to fulfill our dual mandate responsibilities."³² Governor Frederic Mishkin echoed Moskow's concerns, warning FOMC colleagues not "to get too far ahead of the Congress on this."³³ As then Boston Fed President Cathy Minehan, put it, "we do need to consider the likely interaction with the Congress as we set a target for one of our goals but not another. ... What else might that interaction with the Congress provoke? The possibility for unintended consequences is clear."³⁴ Two years later, Fed Vice Chair Don Kohn voiced a similar concern about adopting an inflation target without consulting first with Congress: "Having an inflation target won't have any effect if it is repudiated by the Congress. As soon as we make it, it could have a negative effect."³⁵

Bernanke explains in his memoir why it took the Fed a decade to adopt an inflation target.³⁶ He recalls consulting in January 2009 with the chair of the House Financial Services Committee (Democrat Barney Frank of Massachusetts) about the matter. Rep. Frank declared that he would oppose the change. According to Bernanke, Frank understood the policy logic favoring an inflation target, but he also recognized the poor political optics of adopting a target for only half of the Fed's statutory mandate in the midst of recession: "He [Frank] thought that the middle of a recession was the wrong time to risk giving the impression, by setting a target for inflation but not employment, that the Fed didn't care about jobs." Frank's opposition helped to convince Bernanke to defer formal adoption of an inflation target until unemployment had dropped significantly.

In short, concern about how a program would be viewed contributed to a nearly decade-long pause within the FOMC. We recognize that it is hard to generalize from a single case. Still, as we show elsewhere, FOMC transcripts over the postwar period often show a heightened attention to the political costs of policy choices.³⁷ The furor against the Fed in the wake of the financial crisis and Congress's subsequent move to require greater transparency suggests that the Fed pays a cost for failing to anticipate congressional views. Bernanke's multi-year effort to build political support for an inflation target is perhaps an exception that proves the rule. Regardless, adoption of an inflation target proceeded only with the concurrence of the Fed's congressional boss.

³² Federal Open Market Committee: Transcripts and Other Historical Materials, October 24-25, 2006, p. 131, <http://www.federalreserve.gov/monetarypolicy/fomchistorical2006.htm> [Accessed February 28, 2016].

³³ Ibid, p. 138.

³⁴ Ibid, p. 153.

³⁵ Federal Open Market Committee: Transcripts and Other Historical Materials, December 15-16, 2008, p. 68, <http://www.federalreserve.gov/monetarypolicy/fomchistorical2008.htm> [Accessed February 28, 2016].

³⁶ Ben S. Bernanke, *The Courage to Act*, pp. 526-7.

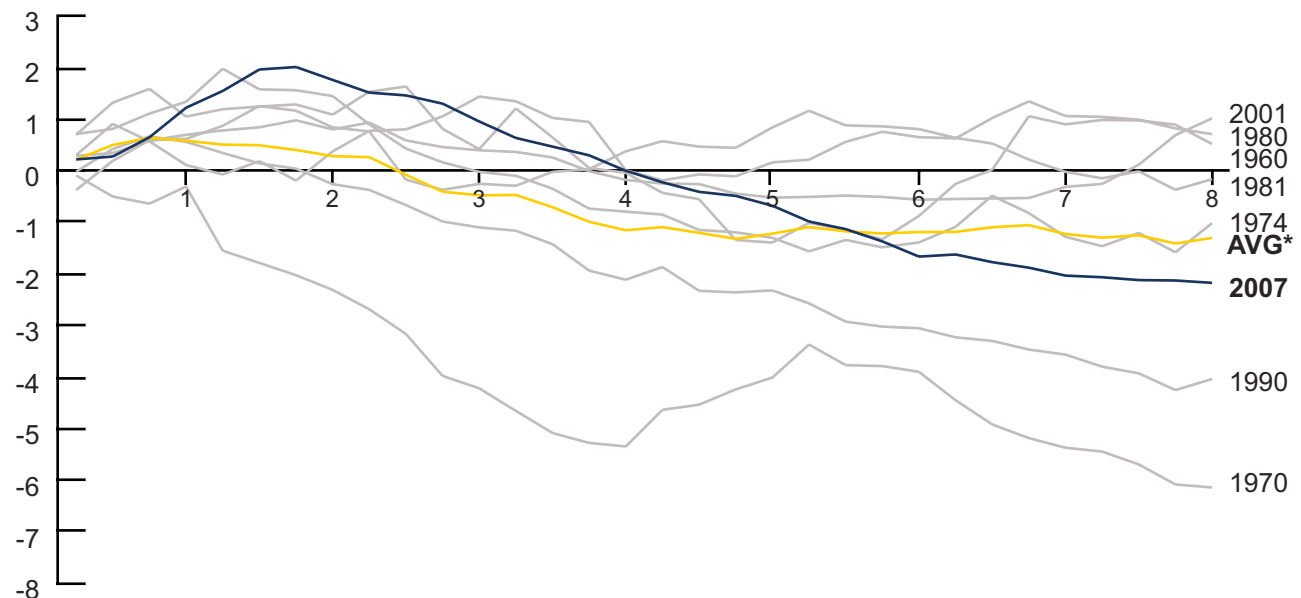
³⁷ See Binder and Spindel, "Monetary Politics."

CONCLUSION

In times of economic and financial crisis when monetary policy plays a critical role in rebooting the economy, electoral incentives compel lawmakers to revisit the Fed's authority. Tougher congressional oversight, greater transparency, and limits on operational tools such as emergency lending remain reliable targets for lawmakers dissatisfied with the Fed's steerage of the economy. We suspect the Fed's rocky relationship with Congress (dubbed "a cold war" by one reporter) will continue.³⁸ Persistent low inflation, growth and interest rates confound Fed policy makers and their congressional overseers, raising doubts about the efficacy of the Fed's unconventional (and unprecedented) monetary policy innovations. At the same time, many lawmakers remain skeptical of the Fed's policy objectives. Liberals argue the Fed is moving too fast to raise rates; Conservatives, too slowly. And unhappy lawmakers threaten to enact additional limits on the Fed and even to take away a key monetary tool that Congress gave the Fed before the crisis.³⁹

Figure 6: Cumulative change in government spending as percent of GDP, by year since recession began

(inflation adjusted, seasonally adjusted)



Source: Bloomberg and Bureau of Economic Analysis (US GDP Government Purchases and Investment Total Chained 2009 SSAE, series GPGSTOTC).

*Average cumulative change for all recessions before 2007.

The Federal Reserve shoulders the burden of restoring its political capital and reputation in the long shadow of the global financial crisis. Unfortunately, the Fed really has been the only game in town since the Democrats lost control of the House in 2010. In Figure 6, we show the cumulative change in federal, state, and local spending (as a share of the total economy) in the wake of each post-war recession. Following the Democrats' 2008 electoral bonanza and an initial burst of stimulus, fiscal policy has been stymied— particularly in comparison to robust government spending in the wake of most postwar recessions. And while Bernanke argued throughout this period that monetary policy

³⁸ Craig Torres, "How the Fed's Cold War With Congress Could Harm the U.S. Economy," *Bloomberg Business*, February 26. <http://www.bloomberg.com/news/articles/2016-02-26/how-the-fed-s-cold-war-with-congress-could-harm-the-u-s-economy> [Accessed February 27, 2016].

³⁹ Ibid. The policy tool in question is the authority of the Fed to pay interest on excess reserves.

was “not a panacea,” a divided Congress failed to heed the call for significantly more stimulus.⁴⁰ Janet Yellen continues to encourage a healthier mix of fiscal and monetary policy, arguing recently that “it certainly would be helpful to see fiscal policy play a larger role.”⁴¹ Absent additional tax cuts or spending measures, it is hard to see how the Fed can engineer a normal economic recovery given the macroeconomic challenges of low inflation, demand and productivity. Indeed, monetary policy nihilists worry that the Fed may be “out of ammunition.”⁴² Another recession would be particularly hard for the Fed to fight without more political support.

The approaching November elections compound uncertainty for the Fed. Some Fed officials may worry about the legislative consequences of electoral change in 2016. In our June 2014 interview, Bernanke reflected on the threat posed by aggressive measures to limit Fed independence. He acknowledged the limited chance that GOP critics could secure their legislative goals while government remained divided. But he raised the prospect of future legislative efforts that could limit the capacity of the Fed:

The last three presidents—Clinton, Bush, and Obama—have all been proponents of Fed independence. Absent the support of some future White House, although it might be difficult to get passed and signed legislation that poses a serious challenge to the basic powers of the Fed, it unfortunately would not be impossible.

As Bernanke’s reflection suggests, Congress retains the power to remake the nation’s monetary regime. Central bankers have to remain alert to the possibility—however remote—of existential threats to the institution. We doubt the path forward will be easy for even the best intentioned and expert of central bankers.

⁴⁰ See, for example, Ben S. Bernanke, “U.S. Monetary Policy and International Implications,” address delivered at the “Challenges of the Global Financial System: Risks and Governance under Evolving Globalization,” A High-Level Seminar sponsored by Bank of Japan-International Monetary Fund, Tokyo, Japan, October 14, 2012 <http://www.federalreserve.gov/newsevents/speech/bernanke20121014a.htm> [Accessed February 29, 2016].

⁴¹ “Transcript: Janet Yellen at the Economic Club of New York,” Wall Street Journal Pro, March 29, 2016. <http://www.wsj.com/articles/transcript-janet-yellen-at-the-economic-club-of-new-york-1459289831> [Accessed March 30, 2016].

⁴² Constraints on monetary and fiscal policy responses are explored in Jon Hilsenrath, “U.S. Lacks Ammo for Next Economic Crisis,” *Wall Street Journal*, August 17, 2015, <http://www.wsj.com/articles/u-s-lacks-ammo-for-next-economic-crisis-1439865442> [Accessed February 28, 2016].

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