

ECONOMIC COMMENTARY

The Effects of the Federal Reserve Chair's Testimony on Treasury Interest Rates

Matthew V. Gordon and Kurt G. Lunsford

Communication by the Federal Reserve is important for the conduct of monetary policy. We study how one form of Federal Reserve communication, the congressional testimony by the Chair of the Board of Governors (the Fed Chair), affects interest rates on 2-year and 10-year Treasury Notes. We study three types of Fed Chair testimony: the first day of *Monetary Policy Report* testimony, the second day of *Monetary Policy Report* testimony, and testimonies not associated with the *Monetary Policy Report* but that still relate to monetary policy. We find that the average size of interest rate changes is largest around first-day *Monetary Policy Report* testimonies and smallest around second-day *Monetary Policy Report* testimonies. We also document that the sizes of interest rate changes can vary over time and often correspond to the level of the federal funds rate.

Introduction

The Federal Reserve's Federal Open Market Committee (FOMC) sets monetary policy for the United States. An important part of setting monetary policy is the FOMC's communication with elected officials, financial markets, and the general public about the use of its monetary policy tools and its outlook for the economy. Janet Yellen, former Chair of the Board of Governors of the Federal Reserve System, has stated "that clear communication is itself a vital tool for increasing the efficacy and reliability of monetary policy."¹ Loretta J. Mester, president of the Cleveland Reserve Bank, has elaborated on this idea, saying that "how and what policymakers communicate are very important in aligning the public's expectations with policy actions, and this alignment can make these actions more effective."² Ben Bernanke, another former Fed Chair, has succinctly observed that "monetary policy is 98 percent talk and only two percent action."³ Given the importance of communication, the FOMC and the Fed Chair communicate in several ways such as through statements following FOMC meetings, press conferences

following FOMC meetings, post-FOMC-meeting minutes, speeches, and testimony before Congress.

Each of these communication types likely provides varying degrees of new information about monetary policy and the economy. One way to quantify how much of the information being conveyed is new or relevant is to examine the response of financial markets immediately following Fed communication. Financial markets likely incorporate all relevant information when trading, and so responses from financial markets immediately following Fed communication are likely a reflection of markets perceiving new relevant information from these communications. To central bankers, the response of financial markets can provide some information on the broader public's understanding of policy. To researchers, financial market responses associated with policy communications can provide measures of policy changes and the impacts of policy on the economy. Accordingly, researchers have studied how financial markets respond to some of these communication types, particularly post-meeting statements.⁴

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In this *Economic Commentary*, we focus on the responses of financial markets to the Fed Chair’s testimony before Congress that is simultaneously available to the public and that has received less research attention than some other communication types.⁵ Our intent is to measure how much new information financial markets take from the Fed Chair’s testimony. Specifically, we study three types of testimony given by the Fed Chair. The first two types are associated with the Federal Reserve’s monetary policy reports to Congress. For a particular *Monetary Policy Report*, testimony is usually given on two days: one day for each chamber of Congress. We separately study first-day testimonies and second-day testimonies. The third type of testimony that we study is not related to the *Monetary Policy Report* but still has information about monetary policy. Throughout this *Economic Commentary*, we will refer to our three types of testimony as first-day Monetary Policy Report testimony, second-day Monetary Policy Report testimony, and non-Monetary Policy Report testimony.

To assess the impact of Fed Chair testimony, we measure how interest rates on 2-year and 10-year Treasury Notes change from 15 minutes before a testimony to 15 minutes after. The interest rate changes in these windows of time likely reflect how markets interpret new or unexpected information from these testimonies. This information may be about the future level of the federal funds rate, the future direction or size of large-scale asset purchases, or the FOMC’s outlook for the economy.

We document that the sizes of interest rate changes are different, on average, for the three types of testimony. Larger changes in rates imply that financial markets interpreted more new information from these testimonies than smaller rate changes. The average size of interest rate changes is largest around first-day *Monetary Policy Report* testimonies and smallest around second-day *Monetary Policy Report* testimonies. The average size of interest rate changes around non-*Monetary Policy Report* testimonies falls in the middle. The findings suggest that first-day *Monetary Policy Report* testimonies typically reveal more new information than the other types of testimony, while second-day *Monetary Policy Report* testimonies typically reveal less new information. Given the timing of these two testimonies, it is likely the case that first-day testimony covers most of the information in the *Monetary Policy Report*, relevant discussion of this report, and information on recent events (particularly during the question and answer section). This first-day *Monetary Policy Report* testimony likely leaves little new information for second-day testimony.

We also document that the sizes of interest rate changes can vary over time. In particular, 2-year Treasury rates had very small changes from 2009 through 2014 and from 2020 through 2021, regardless of testimony type. This result is likely due to the zero lower bound on the federal funds rate, a scenario when the federal funds rate is near zero and cannot go lower. As a result, the Fed Chair had little information to communicate about future changes to the federal funds rate because it was stuck at zero, leading to little movement in the 2-year Treasury rate. The sizes of 2-year Treasury changes were also low from 2015 through 2019, when the federal funds rate was above zero but still low by historical standards. In 2022 and 2023, the FOMC made large changes to the federal funds rate, and relatively large changes in 2-year Treasury rates occurred around both first-day and second-day *Monetary Policy Report* testimonies.

Our findings of significant responses of interest rates around Fed Chair testimony suggest that financial markets, and perhaps the broader public, obtain relevant information on future policy and the economy through this communication vehicle. Researchers may be interested in using these changes in rates associated with a testimony as an indicator of policy changes that could be used to assess policy’s impacts on the economy.

Background on the Fed Chair Testimony That We Study

The *Monetary Policy Report* is a written report that the Board of Governors of the Federal Reserve is required by law to provide to the US Congress twice per year.⁶ This report discusses “the conduct of monetary policy and economic developments and prospects for the future, taking into account past and prospective developments in employment, unemployment, production, investment, real income, productivity, exchange rates, international trade and payments, and prices.” Along with each report, the Fed Chair is required by law to appear before at least one chamber of Congress regarding “the efforts, activities, objectives and plans of the Board and the Federal Open Market Committee” and “economic developments and prospects for the future” described in the report.^{7,8}

In practice, the Fed Chair usually testifies before both chambers of Congress for each *Monetary Policy Report*. Within a given year, the Fed Chair alternates which chamber of Congress he or she testifies to first. These testimonies are often on subsequent days but are sometimes a week or two apart. We separately study the first day and the second day of *Monetary Policy Report* testimony. The Fed Chair usually gives identical prepared remarks on both days, suggesting that the second day of testimony may have no new information for financial markets. However, members of Congress are able to ask questions during the testimony, and these questions and the associated answers may differ across the days and thus may prompt new information on the second day.

The Fed Chair also gives testimony that is not associated with the *Monetary Policy Report*. These other testimonies can be on a wide range of topics, but many include discussions of monetary policy that are similar to the testimonies associated with the *Monetary Policy Report*. For example, on May 22, 2013, then-Chair Ben Bernanke testified about potential changes to the pace of the Fed’s asset purchases by saying, “If we see continued improvement [in the labor market] and we have confidence that that is going to be sustained, then we could in the next few meetings, take a step down in our pace of purchases.”⁹ On January 11, 2022, Chair Jerome Powell said, “if we see inflation persisting at high levels longer than expected, then if we have to raise interest rates more over time we will.”¹⁰ We study these types of testimony that are relevant for monetary policy.¹¹

In total, we study 181 testimonies from July 1991 through June 2023. We study 65 first-day *Monetary Policy Report* testimonies, 62 second-day *Monetary Policy Report* testimonies, and 54 non-*Monetary Policy Report* testimonies.¹²

Motivation for Using Treasury Note Interest Rates to Measure the Impact of Testimony

To measure the degree of new information provided during testimony, we use changes in the interest rates on 2-year and 10-year Treasury Notes in windows from 15 minutes before the start of each testimony to 15 minutes after the end of each testimony.¹³ We now elaborate on our choices to use these interest rates to measure new information.

Over our sample, the Federal Reserve's main policy tool has been the federal funds rate. While the target federal funds rate does not get changed during Fed Chair testimony, the Fed Chair may communicate the FOMC's intentions for changing the target federal funds rate in the future. The Fed Chair may also communicate the FOMC's outlook for the economy, something which could allow financial markets to deduce how the federal funds rate may be changed in the future. We use changes in the 2-year Treasury rate to measure how much financial markets change their expectations for the near-term path of the federal funds rate around a testimony.

Beginning in December 2008, the FOMC lowered the federal funds rate to the zero lower bound, preventing further short-term interest rate cuts. Because of this limitation, the FOMC sought to reduce long-term interest rates by buying longer-term Treasury securities and mortgage-backed securities. We will refer to this buying as "large-scale asset purchases," and Ben Bernanke stated that these purchases likely "reduced the yields" on the securities purchased by the Federal Reserve.¹⁴ Hence, we use changes in the 10-year rate to measure how much financial markets change their expectations for future large-scale asset purchases of longer-run securities. Changes in these 10-year rates may also reflect more general changes to expectations about monetary policy or the economic environment.

The Average Sizes of Interest Rate Movements

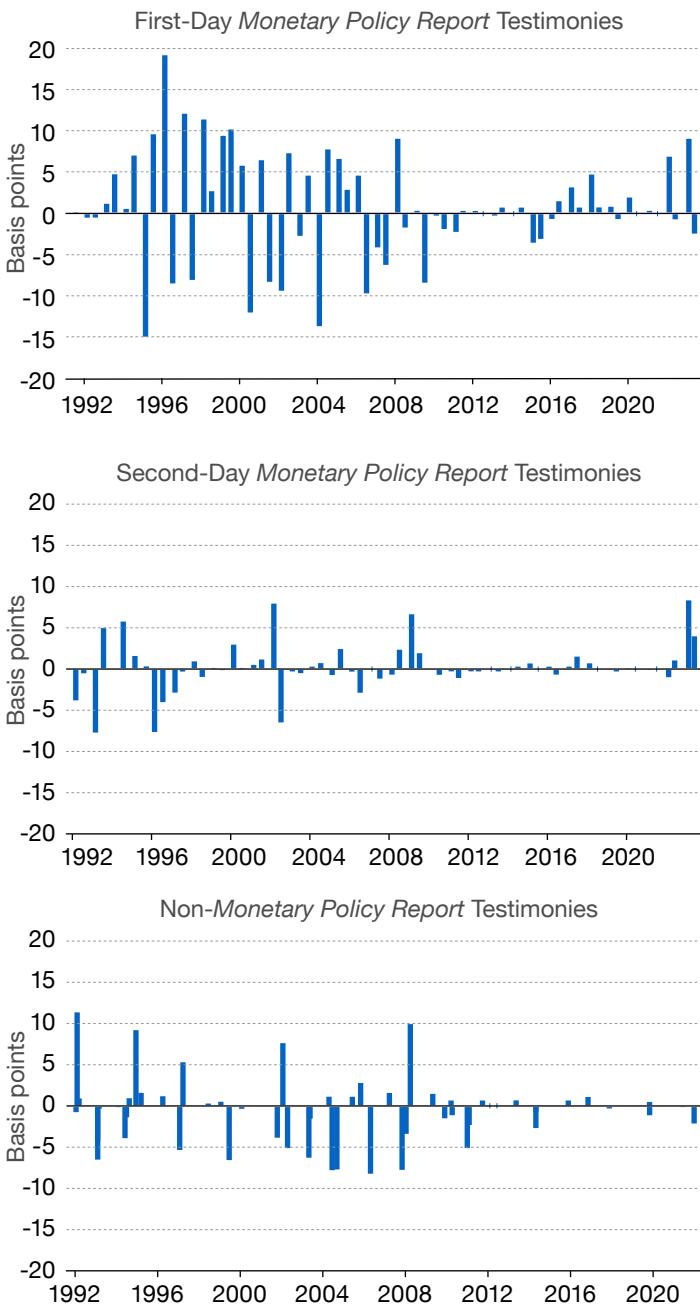
We now study how much each testimony type moves interest rates. Figure 1 shows the changes in the interest rate on the 2-year Treasury Note for each testimony in our sample. Figure 2 shows the changes in the interest rate on the 10-year Treasury Note for each testimony in our sample. We discuss three features of these figures. First, on average, the size or absolute value of interest rate changes is largest around the first day of testimony associated with a *Monetary Policy Report*. The average absolute interest rate changes for 2-year and 10-year Treasury Notes are each 4.7 basis points for first-day *Monetary Policy Report* testimony. Second, on average, the size of interest rate changes is smallest around the second-day *Monetary Policy Report* testimony. The average absolute interest rate changes for 2-year and 10-year Treasury Notes for second-day testimony are 1.8 basis points and 2.2 basis points, respectively, less than half the size of the values generated by the first day of testimony. Third, on average, the size of interest rate changes around non-*Monetary Policy Report* testimony falls between the sizes of first-day and second-day *Monetary Policy Report* testimony. The average absolute interest rate changes for 2-year and 10-year Treasury Notes are 3.1 and 3.0 basis points, respectively, for non-*Monetary Policy Report* testimony.

Since the average absolute interest rate changes are largest for first-day *Monetary Policy Report* testimonies, our results suggest that first-day *Monetary Policy Report* testimonies typically reveal more new information than other types of testimony, while second-day *Monetary Policy Report* testimonies typically reveal less. Of note is that the opening statements made by the Fed Chair during each day of testimony tend to be the same across both days. Given the timing of these two testimonies and the fact that interest rate changes are largest for the first day, it is likely the case that most of the new information in the *Monetary Policy Report* is conveyed in the first-day testimony, leaving limited new information for second-day testimony or second-day questions and answers. Our results also suggest that testimony not associated with the *Monetary Policy Report* can contain information that affects interest rates, albeit typically less information than first-day *Monetary Policy Report* testimony.

The Sizes of Interest Rate Movements and the Level of the Federal funds Rate

In addition to the average sizes of interest rate movements being different across testimonies, Figure 1 shows that the sizes of changes in 2-year Treasury rates may be different over time. To highlight this point, Table 1 shows average absolute interest rate changes for our whole 1991 through 2023 sample and several subsamples. For each subsample, Table 1 also shows the average level of the effective federal funds rate.

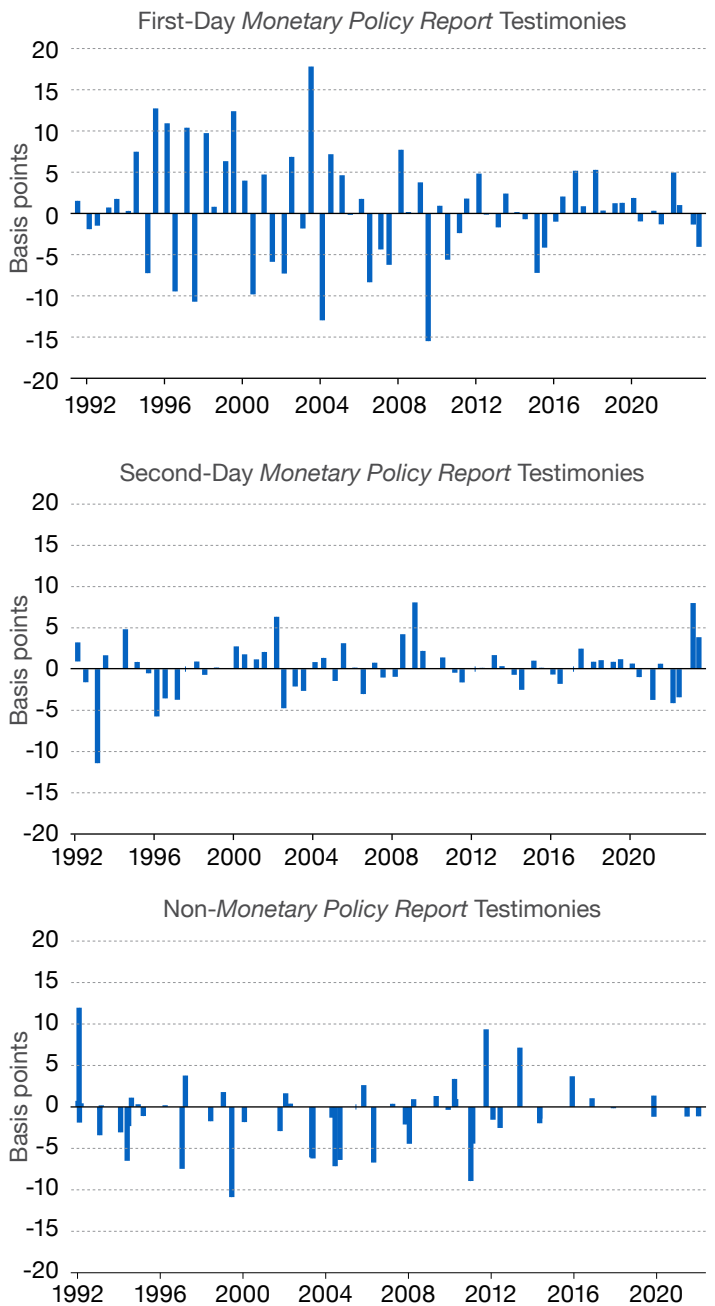
Figure 1: Changes in Interest Rates on the 2-Year Treasury Note



Sources: GovPX and BrokerTec, provided by the Federal Reserve Bank of New York, and authors' calculations

Note: Changes are shown in basis points and measured from 15 minutes before a testimony starts to 15 minutes after a testimony ends.

Figure 2: Changes in Interest Rates on the 10-Year Treasury Note



Sources: GovPX and BrokerTec, provided by the Federal Reserve Bank of New York, and authors' calculations

Note: Changes are shown in basis points and measured from 15 minutes before a testimony starts to 15 minutes after a testimony ends.

Table 1: Average Absolute Interest Rate Changes in Different Sample Periods

	1991–2023	1991–2008	2009–2014	2015–2019	2020–2021	2022–2023
Absolute changes around first-day <i>Monetary Policy Report</i> testimonies:						
2-year Treasury	4.7	7.1	1.4	2.1	0.6	4.9
10-year Treasury	4.7	6.2	3.3	2.9	1.1	2.9
Absolute changes around second-day <i>Monetary Policy Report</i> testimonies:						
2-year Treasury	1.8	2.3	1.2	0.5	0.1	3.7
10-year Treasury	2.2	2.4	1.8	1.0	1.5	4.9
Absolute changes around non- <i>Monetary Policy Report</i> testimonies:						
2-year Treasury	3.1	4.0	1.5	0.9	0.2	2.2
10-year Treasury	3.0	3.2	3.6	1.5	1.2	1.2
Addendum – average effective federal funds rate:						
	2.6	4.0	0.1	1.1	0.2	2.7

Sources: GovPX and BrokerTec, 2-year Treasury rate and 10-year Treasury rate, provided by the Federal Reserve Bank of New York and authors' calculations; Board of Governors of the Federal Reserve System, effective federal funds rate, retrieved from FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/FEDFUNDS>

Notes: Average absolute interest rate changes are shown in basis points. The sample for the 2022–2023 column in January 2022 through June 2023. All other columns use samples from January of the first year to December of the second year. The average federal funds rate in each column is the average rate level over each corresponding sample period.

In Table 1, we first use the 1991 through 2008 subsample to measure the average size of interest rate changes before the federal funds rate hit the zero lower bound. As shown in Table 1, the average level of the federal funds was higher in this subsample than in the other subsamples. Second, 2009 through 2014 is the zero lower bound period in which the federal funds rate averaged 0.1 percent; 2015 through 2019 is the period when the federal funds rate was above the zero lower bound but still low compared to the whole sample average; 2020 through 2021 covers the COVID-19 pandemic, which was a period when the federal funds rate was cut back to the zero lower bound; finally, 2022 through 2023 covers the time period after the COVID-19 pandemic when inflation was high and the federal funds rate increased rapidly.

For 2-year Treasury rates, larger changes generally occurred in 1991 through 2008 and 2022 through 2023, when the federal funds rate was relatively high. Smaller changes in the 2-year Treasury rate generally occurred in 2009 through 2014, 2015 through 2019, and 2020 through 2021. For 2009 through 2014 and 2020 through 2021, the changes in 2-year Treasury rates were both small and similar across testimony types.

These results are consistent with the 2-year Treasury rate's measuring expectations for the future path of the federal funds rate. From 2009 through 2014 and 2020 through 2021, the federal funds rate was essentially stuck at zero, and testimonies were focused on reiterating a belief that this was likely to be the case for some time. As a result, there was little new relevant information to communicate regarding changes in the federal funds rate in testimonies. From 2015 through 2019, the federal funds rate was above zero but changing slowly, and financial markets interpreted testimonies as revealing additional but limited new information. In 2022 and 2023, the FOMC raised the federal funds rate quickly, and Figure 1 shows that relatively large changes in 2-year Treasury rates occurred at both first-day and second-day *Monetary Policy Report* testimonies.

For 10-year Treasury rates, changes around testimony were generally smaller after 2008 than during 1991 through 2008, with the exception of the 2009 through 2014 sample for non-*Monetary Policy Report* testimony. However, 10-year rates were less affected by the zero lower bound episode than 2-year rates. From 2009 through 2021, changes in 10-year rates became larger on average than changes in 2-year rates. The increased relative size of changes in 10-year Treasury rates likely reflects the use of large-scale asset purchases as a monetary policy tool beginning in 2009. It may also reflect changes in FOMC communication during the zero lower bound period that committed the FOMC to low levels of the federal funds rate for multiple years.¹⁵ This commitment likely constrained 2-year Treasury rates more than 10-year Treasury rates.¹⁶

Conclusion

In this *Economic Commentary*, we study one form of Federal Reserve communication: Fed Chair testimony before Congress. We separately study three types of testimony: first-day *Monetary Policy Report* testimony, second-day *Monetary Policy Report* testimony, and non-*Monetary Policy Report* testimony. We document that the sizes of interest rate changes are different on average for the three types of testimony. The average size of interest rate changes is largest around first-day *Monetary Policy Report* testimonies and smallest for second-day *Monetary Policy Report* testimonies. We also document that the sizes of interest rate changes can vary over time and often correspond to the level of the federal funds rate. Two-year Treasury rates had very small changes from 2009 through 2014 and from 2020 through 2021 regardless of testimony type. As interest rates have gone up in 2022 and 2023, larger changes in 2-year Treasury rates have occurred around both first-day and second-day *Monetary Policy Report* testimonies.

Endnotes

1. Yellen (2012).
2. Mester (2023).
3. See Ben Bernanke's blog, written after his tenure as Fed Chair: <https://www.brookings.edu/articles/inaugurating-a-new-blog/>.
4. Gürkaynak, Sack, and Swanson (2005) highlight that the statements that follow FOMC meetings affect financial markets over and above the changes to the federal funds rate. Lunsford (2020) provides evidence that changes to FOMC statement language can change how financial markets react to the FOMC.
5. However, some research has highlighted the importance of Fed Chair testimony for Federal Reserve communication. Kohn and Sack (2003) find that testimony by then-Chair Alan Greenspan significantly affected interest rates. More recently, Swanson (2023) and Swanson and Jayawickrema (2023) have highlighted the importance of testimony and speeches across Fed Chairs. Alexopoulos et al. (2023) provide evidence that the Fed Chair's emotions during testimony can affect the stock market.
6. Recent installments of the *Monetary Policy Report* are available at https://www.federalreserve.gov/monetarypolicy/publications/mpr_default.htm.
7. The exact timing between the *Monetary Policy Report* and the testimony has changed over time. For example, the February 2013 report was released at the start of the first-day testimony, while the February 2023 report was released the Friday before the first-day testimony. Our focus is not necessarily on the reports themselves, but, rather, on perceived new information conveyed during the testimony.
8. Section 2B of the Federal Reserve Act specifies appearances before and reports to Congress: <https://www.federalreserve.gov/aboutthefed/section2b.htm>.
9. The transcript of the May 22, 2013, testimony is available at <https://www.govinfo.gov/content/pkg/CHRG-113jhr81472/pdf/CHRG-113jhr81472.pdf>.
10. The transcript of the January 11, 2022, testimony is available at <https://www.govinfo.gov/content/pkg/CHRG-117shr48289/pdf/CHRG-117shr48289.pdf>.
11. In selecting non-*Monetary Policy Report* testimonies, our intent is to best measure the effects of communication about monetary policy tools. So, for example, we do not include then-Chair Janet Yellen's September 28, 2016, testimony titled "Supervision and Regulation," referring to the supervision and regulation of financial institutions. While supervision and regulation are important responsibilities of the Federal Reserve, this testimony is not about communication of monetary policy tools. We also do not include testimony about specific legislation, such as the Dodd-Frank Act; testimony about the Federal Reserve's involvement with specific companies, such as Bear Stearns or AIG; testimony that is joint with other government officials, such as then-Chair Ben Bernanke's testimony with Treasury Secretary Henry Paulson on July 10, 2008; and testimony that, in our judgment, relates more to fiscal policy, such as then-Chair Bernanke's June 9, 2010, testimony titled "Economic and Financial Conditions and the Federal Budget." Finally, we do not include the testimonies on November 13, 2002, and February 10, 2009, because they were likely confounded by other news. On November 13, 2002, there was news about weapons inspections in Iraq that broke during the testimony. On February 10, 2009, the Treasury Secretary announced a plan for stabilizing financial markets in the morning and testified before Congress in the afternoon.
12. We only found testimony associated with first-day *Monetary Policy Report* installments in July 1991, February 1994, and February 2010. All other installments of the *Monetary Policy Report* have two days of associated testimony.
13. We are grateful to Michael Fleming and Isabel Krogh at the Federal Reserve Bank of New York for computing the Treasury yields and sharing the minute-by-minute data with us. Data are from the GovPX database and the BrokerTec electronic trading platform. Adrian, Fleming, and Vogt (2023) provide additional details on GovPX and BrokerTec. In Gordon and Lunsford (2023), we discuss how we collect start times and end times for testimonies, and we provide additional details on financial market measurement.
14. Bernanke (2010).
15. In its statement after its August 2011 meeting, the FOMC stated that exceptionally low levels of the federal funds rate would be likely through mid-2013. See <https://www.federalreserve.gov/newsevents/pressreleases/monetary20110809a.htm>.
16. Swanson and Williams (2014) provide evidence that 2-year rates became constrained by the zero lower bound in 2011, while 10-year rates were never constrained by the zero lower bound.

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