GPT Deciphering Fedspeak: Quantifying Dissent Among Hawks and Doves

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Abstract

Markets and policymakers around the world hang on the consequential monetary policy decisions made by the Federal Open Market Committee (FOMC). Publicly available textual documentation of their meetings provides insight into members' attitudes about the economy. We use GPT-4 to quantify dissent among members on the topic of inflation. We find that transcripts and minutes reflect the diversity of member views about the macroeconomic outlook in a way that is lost or omitted from the public statements. In fact, diverging opinions that shed light upon the committee's "true" attitudes are almost entirely omitted from the final statements. Hence, we argue that forecasting FOMC sentiment based solely on statements will not sufficiently reflect dissent among the hawks and doves.

Figure 1: The transcripts (left) contains opinions and disagreements but statements (right) are concise. We analyze both datasets using GPT-4 prompting.

one page statements are released immediately after each FOMC meeting, followed about three weeks later by lengthier minutes, and finally five years later by full, verbatim transcripts. Subsequently this triplet is referred to as documents. We find minutes closely reflect the content of transcripts

Can Large Language Models

…be used with domain knowledge

…to quickly process and understand

…decades of technical Fedspeak?

A historical perspective:

- Federal Reserve Act of 1913
- Monetary Policy was largely dictated by Congress until 1951 (Metzler)
- Volcker chairman in 1979 –
- Greenspan chairman in 1987 – Fed should speak "rarely and cryptically"

Large enough for a rate hike?

Formalizing communication:

1989 - Greenspan told House committee member that an immediate announcement of the FOMC's interest rate decisions "would be ill-advised" and "could impede timely and appropriate adjustments to policy."

In 1996 and 1997, the FOMC had issued **exactly one** statement. Then **three** in 1998. Not until 1999 that the FOMC began to issue a statement after **every** meeting.

An effective tool of monetary policy:

"**transparency** in monetary policy … makes policy **more effective**" and "**communication** about policy is likely to remain a **central** element of the Federal Reserve's efforts to achieve its policy goals."

-Bernanke 2013

*"I think monetary policy is **98% talk** and 2% action, and communication is a big part"*

-Bernanke 2021

Who is the Fed communicating with?

Historically, sophisticated financial market participants

The language the Fed uses is extremely technical and specific e.g., "*accommodative*" vs "*highly accommodative*"

This carries enormous significance to bond traders but might be lost on general language models trained on broader corpora

How can Natural Language Processing (NLP) Help?

A word is known by the company it keeps.

-J.R Firth

Can Large Language Models Transform Computational Social Science?

Caleb Ziems, William Held, Omar Shaikh, Jiaao Chen, Zhehao Zhang, Diyi Yang

Large Language Models (LLMs) are capable of successfully performing many language processing tasks zero-shot (without training data).

Press Release

January 31, 2024

Federal Reserve issues FOMC statement

For release at 2:00 p.m. EST

Share ➤

Recent indicators suggest that economic activity has been expanding at a solid pace. Job gains have moderated since early last year but remain strong, and the unemployment rate has remained low. Inflation has eased over the past year but remains elevated.

The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. The Committee judges that the risks to achieving its employment and inflation goals are moving into better balance. The economic outlook is uncertain, and the Committee remains highly attentive to inflation risks.

plans. The Committee is strongly committed to returning inflation to its 2 percent objective.

In assessing the appropriate stance of monetary policy, the Committee will continue to monitor the implications of incoming information for the economic outlook. The Committee would be prepared to adjust the stance of monetary policy as appropriate if risks emerge that could impede the attainment of the Committee's goals. The Committee's assessments will take into account a wide range of information, including readings on labor market conditions, inflation pressures and inflation expectations, and financial and international developments."

Voting for this action: Jerome H. Powell, John C. Williams, Thomas I. Barkin, Michael S. Barr, Raphael W. Bostic, Michelle W. Bowman, Lisa D. Cook, Mary C. Daly, Philip N. Jefferson, Adriana D. Kugler, Loretta J. Mester, and Christopher J. Waller.

Voting against this action: None.

But FOMC Members Are Individuals

**Transcript of the Federal Open Market Committee Meeting on
January 31–February 1, 2017**

January 31 Session

CHAIR YELLEN. Let me call our proceedings to order. Welcome, everyone. As usual, today's meeting will be a joint meeting of the FOMC and the Board of Governors, and I need a motion to close the Board meeting.

MR. FISCHER. So moved.

CHAIR YELLEN. Thank you. And without objection.

I think as everyone recalls, President Lockhart will be stepping down from his position at the end of February. Consistent with tradition, he's elected not to attend this Committee meeting. But we will have the opportunity to honor him and express our best wishes at a

Our Prompt

prompt_template = """ <statement> INPUT </statement>
<labels>

Dovish: Strongly expresses a belief that the economy may be growing too slowly and may need stimulus through monetary policy.

Mostly dovish: Overall message expresses a belief that the economy may be growing too slowly and may need stimulus through monetary policy.

Neutral: Expresses neither a hawkish nor dovish view and is mostly objective.

Mostly hawkish: Overall message expresses a belief that the economy is growing too quickly and may need to be slowed down through monetary policy.

Hawkish: Strongly expresses a belief that the economy is growing too quickly and may need to be slowed down through monetary policy.

</labels>
Which label best applies to the statement
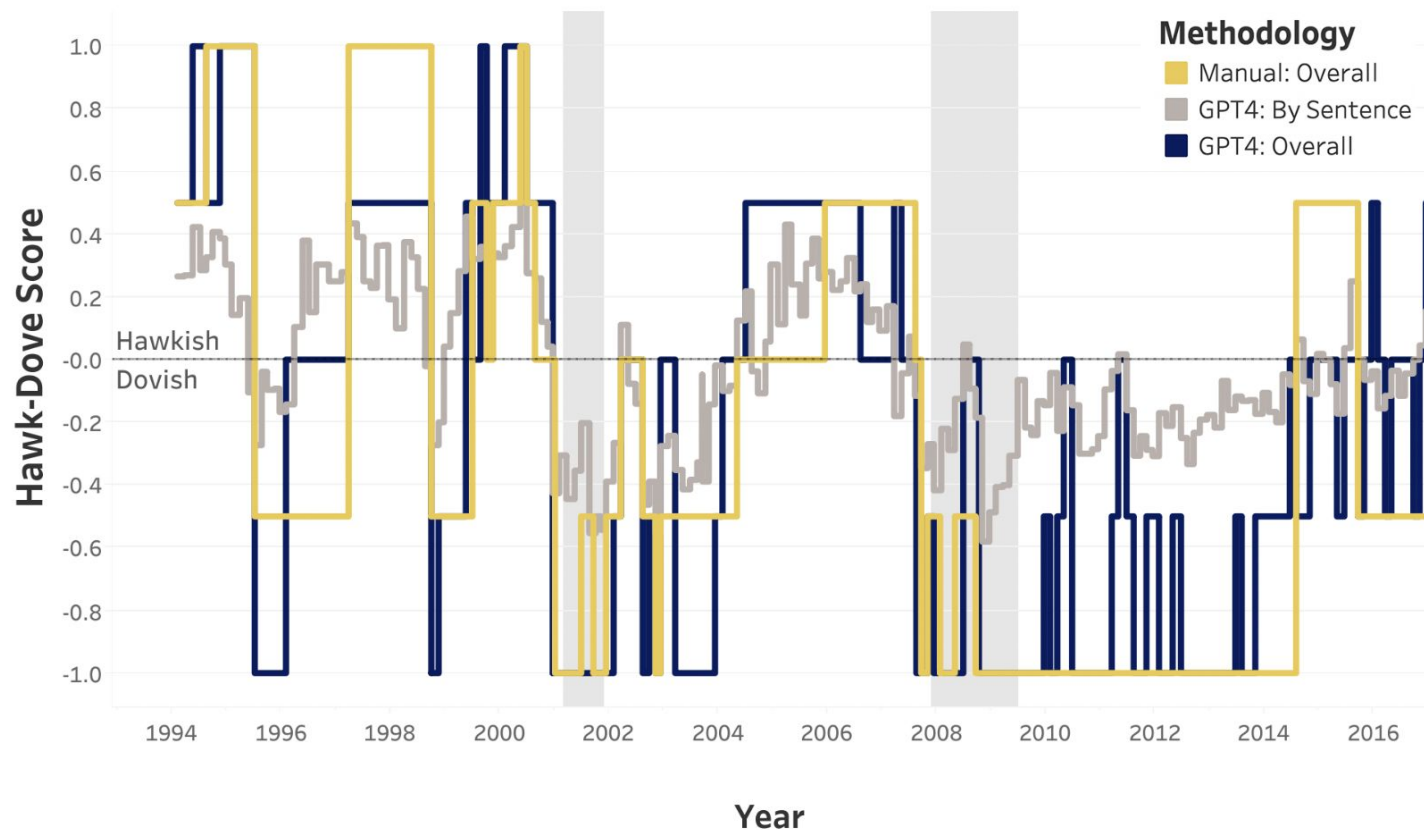(**Dovish, Mostly Dovish, Neutral, Mostly Hawkish, Hawkish**)?

Figure 3: Our analysis of statements finds that averaging at the sentence-level (gray) loses information since the average sentence is Neutral. Ingesting the overall statement (blue) better mirrors the manual gold label (gold).
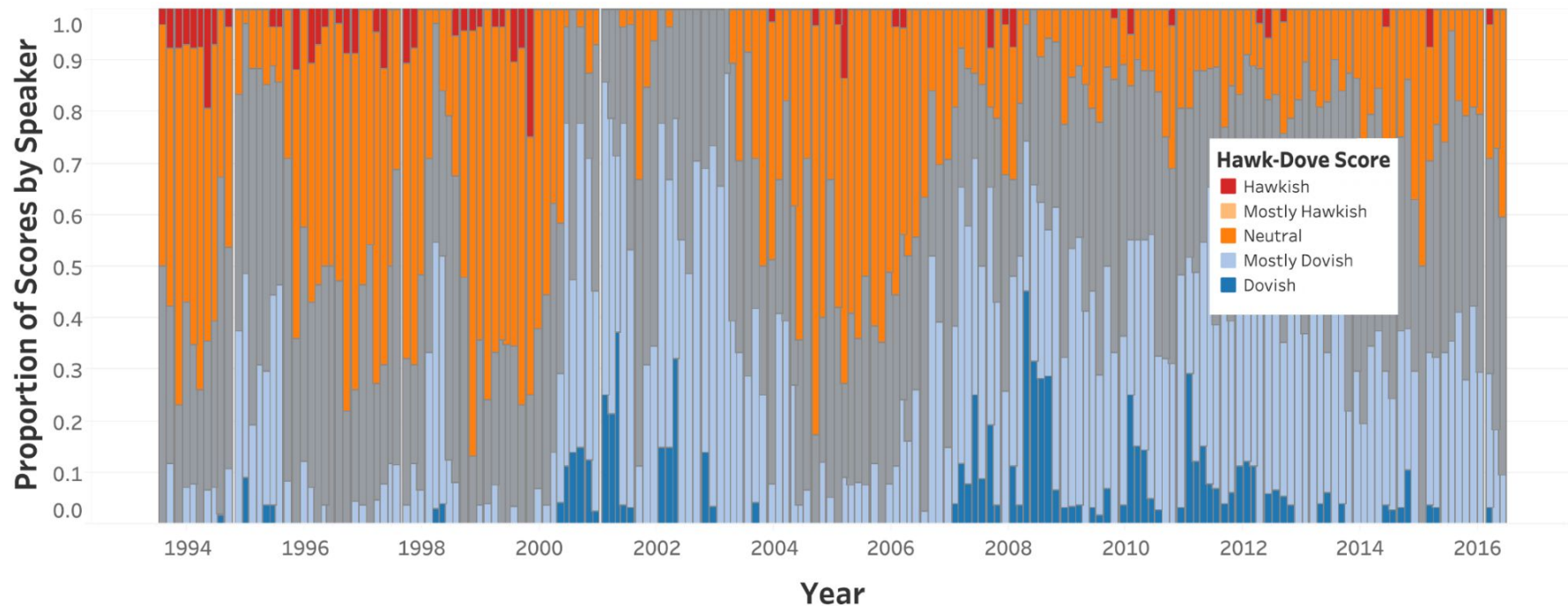
Figure 4: Our analysis of transcripts with GPT-4 at the speaker level shows that meetings consistently have dissenting opinions. Similarly to the previous figure, 2001 to 2004 is dovish (blue), while 2004 to 2006 is hawkish (orange).

I'm a Professor of Law at Yale and do some work on what we call "Law and Macroeconomics". I'm doing some work with ChatGPT classifications of Fed transcripts and read your co-authored paper on the subject with great interest. The paper states that "we create a gold label for statements..." Would you be willing to share these gold labels with me

Lisa D. Cook

Lisa D. Cook took office as a member of the Board of Governors of the Federal Reserve System on May 23, 2022, to fill an unexpired term ending January 31, 2024. She was reappointed to the Board on September 8, 2023, and sworn in on September 13, 2023, for a term ending January 31, 2038.

William C. Dudley

William C. Dudley became the 10th president and chief executive officer of the Federal Reserve Bank of New York on January 27, 2009. In that capacity, he served as the vice chairman and a permanent member of the Federal Open Market Committee (FOMC), the group responsible for formulating the nation's monetary policy.

Previously, Mr. Dudley served as executive vice president of the Markets Group at the New York Fed

What else can be done with LLMs and Economics?