Federal Reserve Speeches and Sovereign Credit Risk

Abstract

We examine the relation between the tone of Federal Reserve speeches and sovereign credit spreads and find a negative relationship, especially for emerging economies. Exploring underlying channels, we show that positive macroeconomic speeches lower CDS risk premia during periods of large interest-rate movements. Positive speeches are also associated with increased cross-border capital flows and a weaker U.S. dollar, both of which reduce sovereign risk. Finally, Fed speeches contain information that precedes FOMC announcements, indicating they function as a distinct monetary policy communication tool with global spillovers.

Keywords: Federal Reserve Speeches; Speech Tone; Sovereign Credit Risk; Credit Default Swaps

JEL classification: G12, G14, G18, M41

1 Introduction

Sovereign credit default swap (CDS) spreads have long served as an essential financial indicator for assessing the risk associated with sovereign debt. These spreads reflect the market's perception of a sovereign's credit risk, with higher spreads indicating poorer perceived creditworthiness. As a result, understanding the factors that influence CDS spreads is crucial for policymakers, investors, and researchers alike.[1] The role of central banks in shaping financial market outcomes is of major importance and the Federal Reserve, in particular, holds a prominent position due to its significant influence on not just domestic, but also international financial markets [Fischer, 2015, Bernanke, 2017]. These range from cross-border capital flows [Bruno and Shin, 2015], bond yields [Gilchrist et al., 2014, Albagli et al., 2019], corporate bond returns [Guo et al., 2020], to financial market outcomes in general [Born et al., 2014, Aizenman et al., 2016, Ehrmann and Talmi, 2020, Swanson, 2021]. In other words, there is substantial evidence that the Federal Reserve's monetary policy decisions, interest rate changes, and public statements have far-reaching implications for various asset classes, including sovereign debt.

A substantial portion of the Federal Reserve communication literature has focused on the impact of FOMC communication. This ranges from the impact of FOMC on financial market variables [Kuttner, 2001, Gürkaynak et al., 2005, Bernanke and Kuttner, 2005, Lucca and Moench, 2015, Swanson, 2021] to using an FOMC announcement as an external instrument to examine the impact on macroeconomic variables such as inflation, unemployment and output [Cochrane and Piazzesi, 2002, Faust et al., 2003, 2004, Stock and Watson, 2012, Gertler and Karadi, 2015, Bauer and Swanson, 2023]. However, due to sample size issues (8 FOMC meetings per year) there have been questions on the efficacy of such results [Ramey, 2016]. In a notable recent study, Swanson and Jaywickrema [2023] combine the data for FOMC announcements as well as Federal Reserve Board speeches to argue that Fed speeches

[1] Carr and Wu [2007], Hilscher and Nosbusch [2010], Longstaff et al. [2011], Dieckmann and Plank [2012], Benzoni et al. [2015], Augustin [2018], Augustin et al. [2022] are some prominent studies which investigate sovereign credit spreads and their determinants.

"[...] have large effects on financial markets and are even more important than FOMC announcements for stocks and bonds." This is because the decisions of the FOMC are communicated ahead of time to the financial market through these speeches.[2] Similarly, Cieslak and McMahon [2023] argue that FOMC members reveal their forward-looking stance through public speeches above and beyond regularly scheduled policy announcements thereby significantly impacting asset prices. In other words, the impact of Fed speeches on market movements can be quite substantial. Although recent work has shown how US monetary policy transmits internationally to emerging market capital flows [Chari et al., 2021] as well as to financial intermediaries and their lending decisions [Bräuning and Ivashina, 2020, Poeschl et al., 2023], less is known about how Fed communication affects sovereign credit risk through bond and CDS markets. Our study aims to address the gap in literature by examining the impact of Federal Reserve speeches on sovereign credit spreads.

Albagli et al. [2019] is very closely related to our paper and investigates the impact of US monetary policy shocks on sovereign bond yields. However, we differ from its analysis in two ways: i) we examine the impact of the tone of the speeches delivered by the Federal Reserve Board of Governors and not monetary policy shocks per se, and ii) we examine the impact of Fed speeches on sovereign CDS spreads rather than bond yields since it is a more direct proxy for sovereign default risk and is more liquid compared to bonds, especially those of emerging countries. Another closely related paper to ours is Schmeling and Wagner [2024] which analyzes the impact of the tone of European Central Bank's president in press conferences and its impact on equity markets and credit spreads. We differ from their analysis by i) looking at the level as well as the changes in the tone of Fed speeches, ii) focusing on sovereign CDS spreads, and iii) introducing a new metric of tone quantification which relies on capturing nuances inherent in any central bank communication.

Recognizing the critical role of the US Federal Reserve in shaping expectations and yields in global financial markets we explore how the tone and content of Federal Reserve Board

[2]See also Gagnon et al. [2011], Wright [2012], Kim et al. [2020], Swanson [2023] for studies examining the impact of Fed speeches on financial market variables.

of Governors' speeches influence the pricing of sovereign risk. We quantify the tone using the financial dictionary of Loughran and McDonald [2011] along with central bank related terms and phrases as specified in Apel and Grimaldi [2014] and Apergis and Pragidis [2019]. We further complement the tonal words and phrases with the usage of "valence shifters" (adverbs, adjectives, negators and adversative conjunctions) which can modify their polarity [Schulder et al., 2018] and employ sentences as the base unit of analysis [Andreevskaia and Bergler, 2008, Apergis and Pragidis, 2019]. Incorporation of valence shifters in Fed speeches is important since Fed governors wish to guide expectations without making firm commitments regarding specific policy paths. Connotation-altering modifiers such as valence shifters (e.g, 'although', 'however', 'faintly', 'whereas', 'somewhat' etc.) are ideally suited to transmitting such nuanced communication.

To empirically investigate this relationship, we employ a comprehensive dataset encompassing 5-year CDS spread movements for a diverse set of 9 emerging and 10 developed sovereign issuers.[3] We offer detailed evidence that positive (negative) speeches from the Federal Reserve Board of Governors (BoG) correspond to significant reductions (amplification) in the 5-year sovereign CDS spreads indicating improved (worsened) market perception of creditworthiness. The results also highlight the relative importance of US-based variables—such as the tone of Federal Reserve BoG speeches—in explaining variations in global risky asset prices, such as sovereign spreads, consistent with literature which document the primacy of US variables in influencing economic outcomes worldwide [Uribe and Yue, 2006, Longstaff et al., 2011, Fischer, 2015, Bruno and Shin, 2015, Bernanke, 2017, Miranda-Agrippino and Rey, 2020, Boehm and Kroner, 2025].

Next, we examine the channels through which the impact of Fed speeches gets transmitted to sovereigns' credit spreads. The first channel we investigate pertains to the content embedded in Fed speeches: macroeconomic versus financial market-related. The primacy of either channel continues to be a matter of debate [Ang and Longstaff, 2013, Chen, 2013]. In

[3]The full list of countries used in this study are included in Table A.1. The labels 'emerging' and 'developed' are as per the MSCI classification.

line with Leombroni et al. [2021] we postulate that macroeconomic content should get transmitted via the interest rate shock and the financial market content via the equity shock. We trace changes in i) CDS spreads, and ii) CDS risk premiums, around dates on which speeches are delivered in the presence of interest rate shocks and find that the tone of speeches with macroeconomic content correlate with substantial reductions in both spreads and risk premiums. In other words, positive content embedded in macro-oriented speeches during extreme interest rate movements lowers the compensation investors demand for holding sovereign debt likely due to their improved risk-taking capacity. Our result is consistent with related studies such as Longstaff et al. [2011], Leombroni et al. [2021], Schmeling and Wagner [2024], and also with the view that positive US economic news directly enhances global investors' risk-taking capacity. When Fed Board of Governors express positivity about macroeconomic conditions during uncertain times, they effectively signal that the global environment may be more supportive of sovereign debt sustainability [Bruno and Shin, 2015, Boehm and Kroner, 2025].

The second channel we examine pertains to cross border flows. We find that positive Fed speeches are associated with higher cross border flows, which in turn significantly reduce CDS spreads. Our results lend support to the idea that Fed speeches influence sovereign credit risk not just through direct market sentiment, but by impacting the flow of investment capital across borders by means of the risk-taking channel where easier monetary conditions in the US encourage capital flows to higher-yielding emerging markets [Bruno and Shin, 2015, Avdjiev et al., 2020, Miranda-Agrippino and Rey, 2020, Boehm and Kroner, 2025].

Finally, we examine the impact of Fed speeches on sovereign CDS spreads through the currency channel. We offer evidence that the policy stance reflected in positive Fed speeches tends to weaken the USD, improves sovereign debt sustainability via balance sheet effects, raises international investors' risk appetite and lowers CDS spreads. We offer corroborating evidence by showing that when the tone of Federal Reserve speeches is more positive compared to that of the ECB, USD denominated CDS spreads tend to fall more compared

to EUR denominated CDS spreads for the same entities. Together, these results paint a comprehensive picture of how central bank communication impacts international financial markets through interconnected channels. Positive Fed speeches signal a more benign policy stance and improves risk sentiment globally [Avdjiev et al., 2020]. This in turn, tends to weaken the USD, makes yields on foreign assets—especially those of emerging markets—more attractive and aids capital flows abroad. A weakened USD improves sovereigns' debt sustainability which further lowers USD denominated sovereign spreads. Our findings mirror the results reported in Bruno and Shin [2015] and Hofmann et al. [2017] and are consistent with the global financial cycle hypothesis of Miranda-Agrippino and Rey [2020].

Cross-sectionally, the impact of Fed speeches is especially strong for emerging economies which experience CDS spread reductions of 5–35 bps corresponding to a unit standard deviation rise in the positivity of the tone of Fed speeches. We also find that the impact of Fed speeches on sovereigns' credit spreads is much stronger than the baseline during the US financial crisis and during periods of US monetary tightening. During periods of market distress, positive Fed speeches provide major reassurance to global markets, which manifests in significant narrowing of sovereign credit spreads, which suggests that central bank communication channels become more potent during uncertainty, consistent with enhanced attention and information-processing during stressed market conditions [Born et al., 2014, Hofmann et al., 2017]. This finding emphasizes the increased importance of uncertainty resolution which positive Fed speeches provide during times of distress and acute volatility. Further, we provide some evidence that the impact of Fed speeches is not transitory and is likely to persist over longer time horizons.

A final, important finding of our paper is that i) the content of Fed speeches contains up to four weeks' advance spread-relevant information over and above that contained in FOMC announcements; and ii) the economic significance of speeches exceeds that of FOMC announcements. It appears that Fed officials gradually reveal their thinking through speeches over the weeks leading up to meetings. Market participants appear to pay close attention to

these incremental revelations, incorporating them into their assessment of global credit conditions well before the official policy announcement, and by the time the official announcement arrives, much of its informational content has already been absorbed by markets through earlier speeches. Our results align with recent papers which argue in favor of Fed speeches being even more important sources of information than FOMC announcements [Swanson and Jaywickrema, 2023, Cieslak and McMahon, 2023, Swanson, 2023].

Our results are quite robust generally, not just to the inclusion of relevant additional controls such as the US term premium, forecasters' estimates, FOMC and macroeconomic announcements etc. but also to popular alternate tone quantification techniques. Our valence shifter-based methodology demonstrates explanatory significance over and above i) the LM dictionary based unigram method [Loughran and McDonald, 2011], ii) FinBERT: a leading machine learning-based tone quantification technique [Huang et al., 2023] and iii) the Dove-Hawk Index [Cieslak et al., 2023]. This suggests that the presence of connotation-altering modifiers captures unique linguistic features not accounted for by existing approaches. The results imply that sovereign debt markets are sensitive to subtle communicative cues featuring qualifications, ambiguities, and tonal nuances and aligns with the view that Fed Governors want to guide market expectations without appearing to make firm commitments that might box them into specific policy paths.

The rest of the paper is organized as follows: Sections 2 and 3 specify, respectively, the methodology and data sources. Section 4 discusses the results of the impact of speech tone on CDS spreads and analyses potential mechanisms which explain the results. Section 5 presents results stratified by cross-sectional and time series characteristics. Section 6 presents additional analyses. This is followed by Section 7 which shows that the benchmark findings are robust. Finally, Section 8 offers concluding remarks.

2 Quantifying the tone of Fed's BoG speeches

We quantify the tone of the Federal Reserve speech text as introduced in the sequence of papers Loughran and McDonald [2011], Apel and Blix Grimaldi [2012], Apergis and Pragidis [2019]. This is further extended in Anand et al. [2022] which applies a sentence-based, multi-clausal, valence shifter-based approach to the speeches of the European Central Bank and the national central banks of major European countries.

Consistent with the approach outlined in the above studies, we decompose Fed BoG speeches into their constituent sentences. The tone of the speech is the average tone across sentences. We look for two categories of words in each sentence: valence shifters (adjectives, adverbs, adversative conjunctions); and polar (positive/negative) words and phrases. Polar words are taken from the LM dictionary [Loughran and McDonald, 2011] and phrases are extracted according to Apel and Blix Grimaldi [2012] and Apergis and Pragidis [2019]. Such phrases/verb-noun combinations are identified as ngram units ($2 \leq n \leq 5$) within the sentence and are categorized as either positive or negative. For example, phrases such as "larger growth", or "higher employment" are treated as positive, and others such as "increase in unemployment", "fall in output" and "decrease in growth" are classified as negative.

We augment the dictionary by assigning weights to 'valence shifters': adjectives, adverbs, and (adversative) conjunctions which modify the meaning of sentences and impart polarity to words and phrases ignored in the LM dictionary [Schulder et al., 2018]. These valence shifters come in four types: amplifiers (e.g., "absolutely", "acutely", "very"), de-amplifiers (e.g., "barely", "faintly", "few"), negators (e.g., "not", "cannot") and adversative conjunction (e.g., "despite", "but").[4]

Further, the tone quantification is done using the sentence as a baseline unit to avoid incorrect quantification of words and phrases [Andreevskaia and Bergler, 2008]. This approach can generate results quite different from standard techniques of tone quantification. For example, consider the following hypothetical sentences:

[4]The list of valence shifters is taken from Schulder et al. [2018] and presented in the Internet Appendix.

1. We expect to witness an increase in employment.

2. We expect to witness a *slight* increase in employment.

3. We expect to witness a *major* increase in employment.

4. We expect to witness *not much* increase in employment.

5. We expect to witness a *large* increase in employment *although* demand has *fallen*.

Clearly, all sentences enumerated above are quite different in their tone. For all hypothetical example sentences presented above, the unigram LM dictionary methodology assigns a score of 0. This is because valence shifters ('slight', 'major', 'not much', 'large') are ignored, and words like 'increase' are assigned zero weight since its impact on connotation is ambiguous: 'profit increase' has a positive connotation, while 'unemployment increase' has a negative connotation. However, our approach is correctly able to distinguish between the sentences owing to weights granted to valence shifters, and due to the usage of the 3-gram 'demand has fallen' in the last sentence.

For a more realistic example from one of the sample speeches, we reproduce the following extract, from the speech of Mark Olson delivered on May 25, 2006.

> *"The reports on first-quarter earnings have been quite positive, and available measures of credit quality, such as credit ratings and loan defaults, show few signs of stress."*

Based on our methodology, the sentence is divided into clusters with respect to polar words/phrases. The amplifiers, de-amplifiers, and adversative conjunctions are given a weight of 0.8: positive for an amplifier, negative for a de-amplifier, negative for the words before adversative conjunction; and positive for the words after adversative conjunction. The negators are given a value of -1.[5] Valence shifter-based tone for this sentence is calculated as follows:

[5]Weights are consistent with prior literature but we additionally verify our results by varying the weight of valence shifters from 0.5 to 0.9 and confirm that our findings continue to hold.

1. *The reports on first-quarter earnings have been* ***quite positive****,*

2. *and available measures of credit quality, such as credit ratings and loan* ***defaults****, show* ***few*** *signs of* ***stress****.*

Thus, the above sentence is divided into two clusters with ***quite*** being a valence shifter to the polar word 'positive' in the first cluster; and ***few*** being a valence shifter (de-amplifier) to the polar word 'stress' in the second cluster.

The tone is calculated is as follows:

$$\begin{aligned}
\text{Cluster 1: } & (+0.8)[=\text{quite}] + (+1)[=\text{positive}] = +1.8 \\
\text{Cluster 2: } & (-1)[=\text{default}] + (+0.8)[=\text{few}] + (-1)[=\text{stress}] = -1.2 \\
\text{Sentence: } & \frac{(+1.8)[=\text{first cluster}] + (-1.2)[=\text{second cluster}]}{17} = +0.035
\end{aligned}$$

3 Data

Speeches delivered by the Board of Governors of the US Federal Reserve are downloaded from the Federal Reserve website, spanning the duration from January 2006 to December 2020.[6] In our sample, there are a total of 757 speeches delivered by members of the Board of Governors (∼4 speeches per month) out of which, 570 speeches exhibit a negative tone and the remainder 187 display a positive tone. In fact, from the period 2007:07 (the beginning of the Great Recession) to 2011:01 (the middle of the Eurozone debt crisis), we find that almost all Fed speeches were uniformly negative in their tone.

We initiate sample selection by including those countries that cumulatively cover around 90% of the aggregate global government debt—in descending order of ordinal rank—which yields an initial sample of 30 countries. We further filter this set based on the requirement that the sample countries contain at least 10 years of continuous 5-year CDS spreads' data

[6]Link: https://www.federalreserve.gov/newsevents/speeches.htm

in the Markit database which results in a sample of 27 countries.[7] Finally, we filter on the basis of the continuous 10-year availability of countries' macroeconomic data, which leads to 8 countries being dropped, yielding a final sample of 19 countries.[8]

Control variables in our paper can be divided into the following categories: i) time-based controls, which are the day of the week and month dummies similar in line with Hayo et al. [2008] and Cieslak and Schrimpf [2019]; ii) text-related controls that capture speech characteristics; and iii) country-level macroeconomic controls. Text-related controls include 'average words per sentence' (AWPS) and 'percentage of complex words' (%CW), both of which are critical components of formula-based text readability metrics [Gunning, 1952] and have been shown to be important ingredients for the analysis of central bank communication [Binder, 2017]. The macroeconomic controls are further divided into two categories: i) US-based macro variables, and ii) individual country-based macro variables. Macroeconomic controls for the US include the US volatility index (VIX), the US 10 year bond yield, the US stock market return and the US term spread (the spread between 10 year and 3 month bond yield).[9] These variables have been shown to have a global impact in an array of studies such as Gilchrist et al. [2019], Albagli et al. [2019], Bruno and Shin [2015], Longstaff et al. [2011]. In addition, following Hilscher and Nosbusch [2010] we control for the following macroeconomic variables for each country in the sample: the debt-to-GDP ratio (monthly), inflation rate (monthly), reserves (monthly), and the market capitalization of the benchmark stock index (daily) of each country.

Table 1 presents summary statistics for the Fed BoG speech tone and other relevant text-related characteristics in Panel A and the 5-year sovereign CDS spreads in Panel B. We find that the mean and median speech tone are negative (-0.05), consistent with the fact that a

[7] Our focus on the 5-year CDS stems from the fact that they are the most liquid and highly traded. Our benchmark results are robust for 1, 3, 7, and 10 year spreads as well.

[8] Table A.1 in the Appendix details the sample selection process and presents country-level disaggregated sample.

[9] These variables are collected at the daily frequency. Control variable selection follows the criteria outlined in Longstaff et al. [2011]. Some other variables such as US corporate bond yield, variance risk premium, US term premium etc. are discussed in the section on robustness, since their inclusion leads to a large drop in sample size.

vast majority of speeches are negative in tone (570 out of 757).[10] Our result is also consistent with the findings of a related study by Hubert and Labondance [2021] which documents that the average, as well as the majority of FOMC statements are negative in tone. The tone of Fed speeches ranges from −0.36 to 0.33 with a standard deviation of 0.09 and an inter-quartile range of 0.10. Roughly, one-third of the words used in Fed's speeches are 'complex words' (words more than 2 syllabi), and the average sentence in a speech contains about 29 words, which reflects the somewhat technical and formal nature of Fed communication. In Panel B, we show that the mean 5-year sovereign CDS spread across the range of countries in our sample is 88.1 basis points. Further, there is high dispersion in spreads (standard deviation 89.09 and IQR 100.56) which indicate significant variation in sovereign credit risk across countries.

Insert table 1 around here.

Table 2 presents the correlation between all speech-related and macroeconomic control variables used in this study. This is done primarily to allay concerns regarding multicollinearity among the explanatory variables. The tone of Fed speeches has relatively low correlation with other variables and displays the highest absolute correlation with the US term spread (−0.23). The two speech-related variables: '%CW' (percentage of complex words) and 'AWPS' (average words per sentence) show very little correlation (0.01 and -0.03 respectively) indicating that standard syntactic measures have low overlap with our valence shifter-based metric of tone. Correlations among macroeconomic controls are also quite modest. The highest correlation is observed among the variables 'Debt ratio' and 'Market cap' at 0.28, while that for 'Reserves' and 'Market cap' is −0.26.

Insert table 2 around here.

[10] This result could be due to the occurrence of two major distress episodes—the Great Recession and the Eurozone debt crisis—in our sample.

4 Results and analysis

In this section, we estimate the impact of the tone of Fed's Board of Governors' speeches on non-US countries' 5-year sovereign CDS spreads. We also present analyses investigating potential mechanisms that explain our benchmark results.

4.1 Impact of Fed speeches on sovereign CDS spreads

We examine if the tone of Fed's Board of Governors' speeches influences 5-year sovereign CDS spreads across countries. We employ panel estimation with fixed effects where the dependent variable is the 5-year sovereign CDS spread and the independent variables include the tone of Fed speeches along with relevant controls. To test this impact, we employ the following regression specification:

$$Y_{i,t} = a_0 + a_1 Tone_t + \sum_j b_j X^j_{i,t} + \lambda_i + \mu_t + u_{i,t} \tag{1}$$

This regression setup encompasses only the dates $t = \tau$ on which speeches are delivered. Here, $Y_{i,t}$ is the 5-year sovereign CDS spread at date t for country i. $Tone_t$ is the contemporaneous (real-valued) tone of the Fed speech delivered on date t, $X^j_{i,t}$ denotes control variable j for country i at date t, λ_i is the country fixed effect and μ_t is the speech-date fixed effect. The coefficient of interest in the specification above is a_1, negative (positive) values of which will indicate a reduction (amplification) in CDS spreads due to positive (negative) speeches.[11]

We also test an alternative specification in which we replace the real-valued speech tone with a binary indicator variable $\mathbb{1}_{Speech,t}$ which assumes value 1 on the dates on which

[11] We note that in this specification, the sample is based on the dates on which Fed Board of Governors delivered a speech, which amounts to 11,657 observations. A potential weakness of this specification is that it employs only a small proportion of the aggregate data, thereby reducing sample size significantly. We use this specification primarily as a benchmark to compare other models with, and to reduce potentially confounding events from non-speech-related daily market movements.

speeches are delivered and 0 otherwise.[12]

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Speech,t} + \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \tag{2}$$

Finally, we employ another variant in which we interact the binary indicator variable $\mathbb{1}_{Speech,t}$ with the real-valued $Tone_t$. For this specification, the $Tone_t$ variable is stipulated to be 0 for all non-speech dates.[13] Usage of the three different specifications can help us disentangle the impact of the tone of Fed speeches from potential speech-date effects.

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Speech,t} + a_2 \mathbb{1}_{Speech,t} \times Tone_t + \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \tag{3}$$

As remarked before, control variables are divided into three categories: i) time-based controls which are the day of the week and month dummies [Hayo et al., 2008, Cieslak and Schrimpf, 2019], ii) speech-based text controls, which are 'average words per sentence' (AWPS) and 'percentage of complex words' (%CW), and iii) macroeconomic controls. Macroeconomic controls are of two types: i) US variables, which include VIX, S&P 500 daily return, the 10-year bond yield and the US term spread;[14] and ii) individual country-level macro variables including the total debt-to-GDP ratio, the inflation rate, terms of trade volatility, reserves and the market cap of the benchmark stock index.[15] Our choice of global and local macroeconomic controls are in line with prior studies [Doshi et al., 2017, Dieckmann and Plank, 2012, Longstaff et al., 2011]. For the US variables and for the country-level control 'Market Cap', the frequency is daily. For the other controls, namely, the debt ratio, inflation, terms-of-trade volatility and reserves, the frequency is monthly. The regression is estimated on a daily frequency while keeping the values of the monthly variables fixed within the month. We

[12] Note that in this specification, the speech-date fixed effects get subsumed in the binary indicator variable $\mathbb{1}_{Speech,t}$.

[13] For regression specifications corresponding to equations (2) and (3), the sample includes non-speech dates also which amounts to a total of 64,486 observations.

[14] US 10-year bond yield − US 3-month bond yield

[15] Detailed definitions of all variables can be found in the Appendix Table B.1.

further employ clustered robust standard errors at the country and speech-date level. Table 3 presents results. Columns (1) and (2) display results based on the regression specification in equation (1), columns (3) and (4) are based on the specification in equation (2), while columns (5) and (6) employ equation (3).

The key insight is as follows: the coefficient for the tone of the Fed speeches is significantly negative across all specifications, indicating that positive (negative) Fed speeches correlate with reduced (amplified) sovereign CDS spreads. Further, as columns (3) and (4) indicate, there is a 'speech date effect' as captured by the significantly negative coefficient for the binary indicator variable $\mathbb{1}_{Speech,t}$, which implies that spreads tend to be lower on the dates speeches are delivered.[16] It has lower significance—both economically and statistically—when macroeconomic controls are introduced in Column (4) and vanishes when the interaction $\mathbb{1}_{Speech} \times Tone$ is introduced along with controls in Column (6). The significantly negative coefficient on the interaction term in columns (5) and (6) and the fact that it renders the speech date indicator insignificant in the presence of controls indicates that markets react to the tone of Fed speeches over and above any putative impact of the speech date effect. In other words, we can conclude that Fed's tone and CDS spreads are negatively related: positive speeches tend to reduce sovereign CDS spreads, while negative speeches tend to amplify them. This result is also economically meaningful, as (all else equal) a 0.1 unit rise in speeches' positivity—corresponding to a unit interquartile movement—correlates with a reduction in sovereigns' CDS spreads in the range of around 3–14 basis points. This impact is economically meaningful. For example, in the most stringent specification (Column (6)) a 0.1 unit rise in tone corresponds to a 3.2 bps fall in spreads which can represent significant dollar amounts given the typically large scale of government debt. The effect size of speeches is comparable to or larger than traditional macroeconomic variables in the model. Further, a variance decomposition exercise reveals that the tone of Fed speeches contributes to about

[16] A possible interpretation is that Fed BoG's speech-dates are information events on which markets expect to absorb news regarding key policy variables, which perhaps lowers the uncertainty premium on such dates.

13.6% of the total explained variation.[17]

Among other control variables which have significant impact, the US term spread (positive), the US 10-year bond yield (negative) and inflation (negative) are most prominent. In particular, the significant impact of US macroeconomic variables on CDS spreads of other sovereigns is consistent with well-known prior studies which document the centrality of the US on economic outcomes around the world [Longstaff et al., 2011, Fischer, 2015, Miranda-Agrippino and Rey, 2020, Boehm and Kroner, 2025]. Our paper adds the content of Federal Reserve communication, in the form of the tone of Board of Governors' speeches, as another US-based explanatory variable which influences sovereigns' CDS spreads.

Insert table 3 about here.

4.2 Potential mechanisms

We now turn our attention to explaining the negative relation between the tone of Fed BoG's speeches and sovereign spreads. We examine the content of speeches, their impact on real variables such as cross-border flows as well as possible transmission via the currency channel in explaining our benchmark results.

4.2.1 Macroeconomic versus financial content of speeches

Whether sovereign risk is rooted in financial or macroeconomic information is a matter of continued debate [Ang and Longstaff, 2013, Chen, 2013]. In their paper, Longstaff et al. [2011] analyze sovereign credit risk through CDS spreads in developed and emerging markets and find minimal or non-existent country-specific credit risk premiums. Instead, they attribute the variation in sovereign CDS to US equity and bond market-related metrics which in turn, are strongly influenced by Federal Reserve communication [Kuttner, 2001, Gürkaynak et al., 2005, Bernanke and Kuttner, 2005, Swanson, 2021]. Hence we examine if it is the macroeconomic or financial market content of Fed speeches that acts as a channel via which Fed

[17] From adjusted R^2s in Columns (1) and (2): $\frac{0.03}{0.22} \times 100 = 0.1363$.

speeches influence sovereigns' credit spreads. We postulate that the macroeconomic content should be transmitted via the interest rate shock and the financial market content via the equity channel, in line with Leombroni et al. [2021]. In particular, macroeconomic content contains forward-looking information about common factors such as growth and inflation expectations which in turn influence yield curve movements and interest rate expectations, all of which have a material impact on the debt servicing capabilities of sovereigns.

To this end, we examine the extent of forward-looking macroeconomic content in Fed speeches. Our focus on forward-looking content is due to its ability to anchor future investor expectations and the fact that it is less likely to be endogenous [Ehrmann and Fratzscher, 2007]. Further, forward-looking content can be used to emphasize signalling (as opposed to mere reporting) and can have major implications for market outcomes [Hubert and Labondance, 2021]. The list of forward-looking terms is taken from Li [2010]. To isolate macroeconomic and financial terms in speeches we create a word-frequency table and examine the list of most frequently occurring words characteristic of macroeconomic or financial discourse, as discussed in Gardner et al. [2022].

Next, we find the percentage of sentences in each Fed speech containing at least one macroeconomic term and an associated forward-looking word around that macroeconomic content. Speeches which contain macroeconomic content in the top quintile are deemed macroeconomic speeches.[18] We define a new variable 'Macro Tone' which calculates the tone of such macro speeches and assumes the value 0 for all non-macro speeches. The same procedure is used to calculate the variable 'Financial Tone'.

To ascertain the mechanism at work, in line with Leombroni et al. [2021], we construct two shock variables emanating from central bank communication: i) interest rate shock (IR), and ii) equity market shock (EQ). The IR shock is calculated using the overnight interest rate swaps (1–10 years). We consider changes in these swap rates and then take the principal component for all changes to create a measure of IR shock. Similarly, the equity market

[18] We verify that other thresholds e.g, the top quartile also produce qualitatively similar results.

shock is proxied as the change in S&P 500 mini futures around speech dates. Further, we regress the change in S&P 500 mini futures on the IR shock and identify the residuals as the EQ shock [Leombroni et al., 2021]. We define the IR and EQ shock binary indicators to be 1 when in the top or bottom quintile of the distribution and 0 otherwise. The dependent variable is the change in CDS spreads around the Fed speech dates t i.e., $CDS_{t+1} - CDS_{t-1}$. Due to the outsized impact wielded by the Chair of Fed Board of Governors, we analyze the impact of their speeches separately.[19] Further, we examine if Fed speeches change the fundamental creditworthiness of sovereigns or merely alter the compensation demanded by investors for bearing the risk. To do so, we extract sovereign credit risk premia from observed sovereign CDS spreads following the approach outlined in Friewald et al. [2014] and Cochrane and Piazzesi [2005].[20] Corresponding regression specifications are as below:

$$\begin{aligned} Y_{i,t+1} - Y_{i,t-1} =& a_0 + a_1 \text{Macro tone}_t + a_2 \mathbb{1}_{IR\_Shock_t} + a_3 \text{Macro tone}_t \times \mathbb{1}_{IR\_Shock_t} + \\ & \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \end{aligned} \tag{4}$$

$$\begin{aligned} Y_{i,t+1} - Y_{i,t-1} =& a_0 + a_1 \text{Fin tone}_t + a_2 \mathbb{1}_{EQ\_Shock_t} + a_3 \text{Fin tone}_t \times \mathbb{1}_{EQ\_Shock_t} + \\ & \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \end{aligned} \tag{5}$$

$$\begin{aligned} Y_{i,t+1} - Y_{i,t-1} =& a_0 + a_1 \text{Macro tone}_t + a_2 \mathbb{1}_{IR\_Shock_t} + a_3 \text{Macro tone}_t \times \mathbb{1}_{IR\_Shock_t} + \\ & a_4 \text{Fin tone}_t + a_5 \mathbb{1}_{EQ\_Shock_t} + a_6 \text{Fin tone}_t \times \mathbb{1}_{EQ\_Shock_t} + \\ & \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \end{aligned} \tag{6}$$

We calculate changes in spreads (and credit risk premiums) from $t-1$ to $t+1$ as $Y_{i,t+1} - Y_{i,t-1}$. Using changes in spreads helps isolate the direct impact of the speech content by i) removing the impact (if any) of trends, ii) focusing on the immediate market reaction, and iii) reducing

[19] While the Chair is legally an equal member of the board, he/she wields much more influence than other governors since: i) the Chair controls the agenda of the BoG and the FOMC; ii) the Chair acts like the public spokesperson of the BoG, testifying to the US Congress twice a year on monetary policy; and iii) the Chair is also the head of the FOMC which executes monetary policy of the US.

[20] Details of calculation for CDS credit risk premia are outlined in the Internet Appendix.

confounding impacts from other daily events. A negative (positive) coefficient would indicate a reduction (amplification) in sovereign spreads compared to that on the day prior to the speech. Table 4 presents the results. Panel A presents results for all speeches, Panel B for speeches delivered by the Chairperson while Panel C presents results in which the dependent variable is the change in the CDS risk premium around Fed speech dates.

In Panel A we find that there is a significant negative interaction between the macro tone and the interest rate (IR) shock indicator (-24.13, p-value < 0.01) suggesting that positive macroeconomic messaging in Fed speeches substantially reduces sovereign CDS spreads when accompanied by extreme interest rate movements. This transmission mechanism is consistent with the information effect of central bank communication. The interaction of financial content's tone with equity shocks show negative but statistically insignificant coefficients suggesting that it is not a primary transmission mechanism. In Panel B, the interaction effect for macro tone and IR shock is stronger for chairperson speeches (-31.37, p-value < 0.01) compared to the full sample, emphasizing heightened market sensitivity to the Fed Chair's communications. In other words, positive speeches by the Chair of Fed BoG on macroeconomic matters, in the presence of interest rate shocks substantially reduce CDS spreads and renders other explanatory variables insignificant. In Panel C, the interaction between macro tone and IR shock indicator displays negative significance (-7.27 p-value < 0.01) even when examining only the risk premium component of CDS spreads. This indicates that positive macro Fed speeches during extreme interest rate movements substantially reduce the risk premium demanded by sovereign CDS investors, suggesting Fed communication influences risk perceptions and compensation demanded for bearing that risk.

Insert table 4 here.

Our results provide evidence that positive cues embedded in Fed's macro-oriented speeches likely raises investors' risk appetite through interest rate shocks. Sovereign credit risk depends fundamentally on a country's ability to service debt, which directly relates to the broader interest rate environment and economic growth prospects. When Fed governors

express positivity about macroeconomic conditions during periods of extreme interest rate movements, it likely indicates that the global financial environment may be more supportive of sovereign debt sustainability. This impact has also been observed in the well-known study of Longstaff et al. [2011] which shows that sovereign credit spreads are impacted far more by US-related factors than by country-level variables. Similar results are presented by Xing et al. [2024], which examines the impact of the US macroeconomic news and its significant impact on the bond yields of Canada, Sweden and the UK. Our results are also aligned with the findings of Schmeling and Wagner [2024] which examines changes in tone of ECB president's press conferences and shows that positive tone surprises are associated with decreases in credit spreads and volatility risk premiums.

4.2.2 Cross border flows

In their paper, Bruno and Shin [2015] examine the impact of monetary policy on capital flows using the cross border flow data from the Bank of International Settlement (BIS). They show that a contractionary (expansionary) monetary policy corresponds to a fall (an increase) in cross border flows. We hypothesize that the Fed speech tone could have an impact in the same direction since it is an important mode of Fed communication with significant associations with US monetary policy cycles. To test this channel, we investigate the impact of Fed speech tone on government-related cross border flows, and then examine the impact of cross border flows on sovereign CDS spreads. Cross-border flows are proxied using the BIS International Debt Securities Statistics (IDSS) [Bruno and Shin, 2015, Avdjiev et al., 2020] and measured at the quarterly frequency. The regression is conducted at the quarterly frequency and we aggregate higher frequency data at the quarterly level by using the quarterly medians as their estimates. Results are presented in Panel A, Table 5.

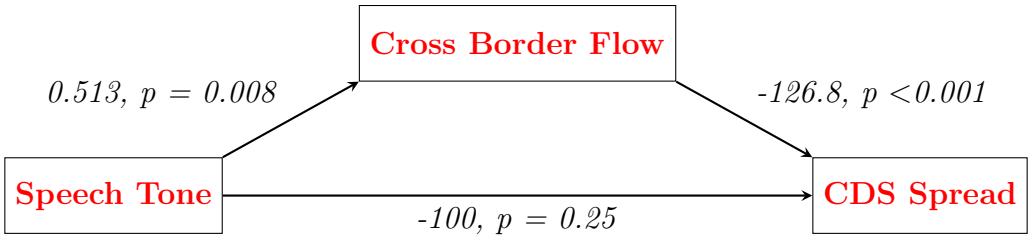
We find that a positive Fed speech tone has associations with significant increases in cross-border flows (Column (1)) which demonstrates how central bank communication influences international capital allocation decisions. Further, in Column (2) we find that higher cross-

border flows substantially reduce sovereign CDS spreads (-122.50, p-value < 0.01). The results establish a possible path from Fed speech tone to cross-border flows to CDS spreads, revealing how Fed speeches impact global credit markets. This result is consistent with Bruno and Shin [2015]'s hypothesis that US monetary policy communication influences global capital flows as well as with the global financial cycle hypothesis [Miranda-Agrippino and Rey, 2020]. Further, the high R^2 (0.59) for cross-border flows suggests Fed communication provides immediate, actionable signals to international investors before actual policy changes and supports the contention that positive US-related news (in the form of positive Fed speeches) enhances risk appetite, in line with the findings of Boehm and Kroner [2025].

Insert table 5 about here.

To validate our results further, we conduct path analysis to segregate the direct and indirect impacts of the macroeconomic content of Fed speeches on sovereign spreads via the interest rate shocks in line with Guan et al. [2023]. Path analysis decomposes the correlation between the source variable (speech tone) and an outcome variable (CDS spreads) into direct and indirect paths through mediating variables (cross border flows). In a direct path, there is only one path coefficient, whereas an indirect path comprises a path coefficient connecting the source variable to the mediating variable, followed by another path coefficient linking the mediating variable to the outcome variable. The total strength of the indirect route is quantified by the product of these two path coefficients.

We further validate our findings by means of path analysis with cross-border flows as the mediation variable. We observe significant impact of speech tone on cross-border flow $(0.513, p\text{-value} = 0.008)$ and cross border flow on CDS spread $(-126.828, p\text{-value} < 0.001)$. We perform the Sobel test, the Aroian test and the Goodman test to establish the mediation of the cross-border flow. All three tests confirm that there is a statistically significant indirect impact of cross-border flows (Sobel test statistic $-65.121, p\text{-value} < 0.015$). The result shows that a total of 39.3% of the total impact is mediated through the cross-border flow channel.



Our results lend support to the idea that Fed speeches influence sovereign credit risk not just through direct market sentiment, but by impacting the flow of investment capital across borders. This builds on established theories about how US monetary policy affects international capital allocation, particularly via the risk-taking channel where easier monetary conditions in the US encourage capital flows to higher-yielding emerging markets [Boehm and Kroner, 2025]. When Fed officials sound optimistic about economic conditions, international investors become more willing to invest in foreign government securities, which reduces the yield spreads required to hold that debt.

4.2.3 Currency channel

The dollar exchange rate is a key relative price in the world economy, whether in goods markets or in international financial markets. For example, Miranda-Agrippino and Rey [2020] shows that US monetary policy gets transmitted internationally via its effect on asset prices, risk premia, credit flows, leverage, etc. and that the Federal Reserve monetary policy explains approximately one-quarter of the variation in risky asset prices around the world. In addition, Bruno and Shin [2015] shows that a strong (weak) US dollar is associated with tighter (easier) credit conditions worldwide. Further, a large proportion of international debt securities are denominated in USD [Maggiori et al., 2020].[21] The dominance of US dollar has important implications for the transmission of US monetary policy by impacting investors' financial risk appetite and synchronization of international credit and financial cycles.

We test whether the impact of Fed speeches gets transmitted via currency exchange

[21] Bernanke [2017] provides a comprehensive review of the impact of Federal Reserve policy on international spillovers.

rates in Panel B, Table 5. In the standard regression specifications in Equations (1)–(3), we replace the dependent variable CDS spreads with forex returns.[22] Exchange rates are defined as units of US dollars per unit of foreign currency such that an increase in spot rates (denoted by $Spot_t$) denotes appreciation (depreciation) of foreign currency (USD). More formally, in line with Colacito et al. [2020], we compute the exchange rate returns for country i as the unanticipated excess returns as below:

$$RX_{i,t+1} = \frac{Spot_{i,t+1} - Forward_{i,t}}{Spot_{i,t}}$$

We find that the coefficient of the Fed speech tone is significantly positive (0.13, p-value < 0.05) indicating weakening of USD.[23] The speech indicator is indistinguishable from 0 and the interaction between the Fed tone and speech indicator is significantly positive (0.15, p-value < 0.05). Insofar as positive Fed speeches signal a more benign policy stance it indicates lower future US interest rates than previously expected, which in turn lowers expected returns on US assets and raises returns on foreign assets [Bruno and Shin, 2015]. The concerted action by international investors who sell US dollars to buy foreign currencies corresponds to capital outflows from the US and manifests in the USD's weakness.

Our results are consistent with the findings in Hofmann et al. [2017] who show that USD weakening is associated with compressed sovereign spreads. As positive Fed speeches weaken the dollar, it provides immediate relief to foreign sovereigns' debt burdens by its balance sheet effects. This forex return analysis complements the paper's main findings about sovereign CDS spreads, showing that Fed communication has broad international financial market effects that operate through multiple interconnected channels impacting both credit risk perceptions and currency valuations simultaneously.

We provide complementary evidence to validate our results by building on Avdjiev et al.

[22] Data for the forex returns for the duration and cross section of our sample are collected from Bloomberg.

[23] A positive value implies that the future spot rate was higher than that predicted by the current forward rate. Hence an investor long the foreign currency made an unexpected profit since the US dollar weakened more than expected, or equivalently, the foreign currency strengthened more than expected.

[2020] who postulate that international fund movements respond to divergences in central banks' policy. We examine if investors' response to divergence in the tone of speeches delivered by the Fed and the European Central Bank (ECB) gets captured in the spreads of USD denominated and EUR denominated CDS spreads. The regression specification is as below:

$$Y_{i,m}^{USD} - Y_{i,m}^{EUR} = a_0 + a_1(Tone_m^{Fed} - Tone_m^{ECB}) + \sum_j b_j X_{i,m}^j + \lambda_i + u_{i,t} \tag{7}$$

Here $Y_{i,m}^{USD}$ ($Y_{i,m}^{EUR}$) denotes the USD (EUR) denominated 5-year CDS spread. Since the dates on which the Fed and the ECB deliver speeches are typically quite different, we conduct the regression at the monthly frequency (denoted by the subscript m) by aggregating daily data at the monthly level using medians as their representative estimates.[24] Data for the spread between USD and EUR denominated CDS spreads are taken from Markit. Data for ECB speeches are downloaded from the ECB website.[25] The dependent variable is the difference between USD-denominated and EUR-denominated CDS spreads for the same sovereign. When this difference is positive, it implies that the USD-denominated debt is perceived as riskier than the EUR-denominated debt of the same country. The key independent variable is the tone differential between Fed and ECB speeches. Our design helps isolate the currency-denomination effect from general sovereign risk changes.

We provide results in Panel C of Table 5. We find a significantly negative coefficient ($-0.0028, p\text{-value} < 0.05$) indicating that when the Fed sounds more positive relative to the ECB, USD-denominated sovereign CDS spreads fall relative to EUR-denominated spreads. Results from Panels B and C together imply that when the Fed sounds optimistic, it essentially signals that the global dollar liquidity environment will remain benign. This has dual effects: i) it reduces returns on the currency (USD weakens), and ii) USD denominated debt is easier to service (USD denominated CDS spreads fall). Our finding that positive Fed tone

[24] Fed and ECB typically deliver several speeches each month, which implies that there are no missing values for $Tone_m^{Fed} - Tone_m^{ECB}$.

[25] Link: https://www.ecb.europa.eu/press/key/html/downloads.en.html

both weakens the dollar and narrows CDS spreads, particularly for USD-denominated debt relative to EUR-denominated debt, provides plausible evidence of this integrated mechanism at work.

5 Cross-sectional and time series variation

There is significant heterogeneity in the impact of Fed speeches on sovereign CDS spreads. In this section, we examine whether the impact of speeches is higher for emerging countries' sovereign spreads. We also evaluate if Fed speeches influence CDS spreads more during times of market distress and during periods of US tightening.

5.1 Emerging versus developed economies

We employ the MSCI classification to divide our sample into developed and emerging economies in order to estimate the differential impact of Fed speeches on their sovereign spreads. We introduce a binary indicator $\mathbb{1}_{Emerging}$ which assumes the value 1 for emerging economies and 0 otherwise.[26] We modify our baseline model by interacting the emerging economy indicator variable with the tone of Fed speeches in Equation (8) and with the binary indicator variable $\mathbb{1}_{Speech,t}$ in Equation (9) as below:

$$Y_{i,t} = a_0 + a_1 \text{Tone}_t + a_2 \text{Tone}_t \times \mathbb{1}_{Emerging} + \sum_j b_j X^j_{i,t} + \mu_t + u_{i,t} \tag{8}$$

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Speech,t} + a_2 \mathbb{1}_{Speech,t} \times \mathbb{1}_{Emerging} + \sum_j b_j X^j_{i,t} + u_{i,t} \tag{9}$$

Table 6 presents results. The key insight is that the impact of Fed speeches on sovereign spreads is especially strong for emerging countries. In the fully specified model (Column (2)), the coefficient on $Tone \times \mathbb{1}_{Emerging}$ is significantly negative (-123.25, p-value < 0.01). As

[26] Panel B in the sample selection Table A.1 in the Appendix stratifies our sample of 19 countries into 9 emerging and 10 developed economies using the classification scheme provided by MSCI.

Fed speeches rise in positivity by 0.09 units—corresponding to one standard deviation—the emerging countries' CDS spreads drop by about 11 bps compared to virtually no impact for developed markets. The base effect (representing the impact on developed economies) loses significance once macroeconomic controls are included. This suggests that for developed economies, Fed speech effects are largely captured by other macroeconomic variables. However, the emerging market interaction remains robustly significant, indicating that this differential effect operates through channels distinct from standard macroeconomic transmission mechanisms. The asymmetric response supports Bruno and Shin [2015]'s risk-taking channel hypothesis. When Fed Board of Governors sound optimistic, global investors become more willing to take risks, and this effect is magnified for higher-yielding emerging market debt. The relatively low R^2 in the sparse specifications without macroeconomic controls in Columns (1) and (3) (0.04 and 0.01 respectively) rise to much higher values with controls in Columns (2) and (4) (0.23 and 0.20 respectively), which implies that the Fed speech tone operates alongside other important determinants of sovereign credit risk.

Insert table 6 about here.

Further, we estimate the impact of Fed speeches on individual countries' CDS spreads. Table 7 disaggregates the impact of Federal Reserve speech tone on individual countries in our sample by means of country-specific categorical variables ($\{\mathbb{1}_i\}_{i=1}^{18}$) and their interaction with the Federal Reserve speech tone and with the binary indicator variable $\mathbb{1}_{Speech,t}$ in columns (1) and (2) respectively. Corresponding regression specifications are presented below:

$$Y_{i,t} = a_0 + a_1 \text{Tone}_t + \sum_i a_i \text{Tone}_t \times \mathbb{1}_i + \sum_j b_j X_{i,t}^j + \mu_t + u_{i,t} \tag{10}$$

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Speech,t} + \sum_i a_i \mathbb{1}_{Speech,t} \times \mathbb{1}_i + \sum_j b_j X_{i,t}^j + u_{i,t} \tag{11}$$

In the above equations, the reference country ('Base') is Canada. The total impact for each country i equals a_1 ('Base' coefficient) plus a_i (the country interaction term).

Prior results emphasized the especially strong impact of Fed speeches on emerging countries. Results for individual countries indicate that the emerging market response to Fed speeches is not driven by a small group of sovereigns. We find that except for Canada, for which there is a positive relationship between Fed speeches and sovereign spreads, all other countries' spreads show either a negligible (Czech, Norway, Switzerland), or a negative interaction term. The aggregate impact is significantly negative especially for Hungary, Indonesia, Poland and Thailand.[27] The economic significance of the results are substantial, and much higher than benchmarks. For example, a 0.1 unit increase in positivity of Fed speeches lowers Hungarian CDS spreads by 37.6 bps, 14.5 bps for Indonesia and 9.9 bps for Poland. The least sensitive group includes developed economies like Switzerland, Norway, UK and Germany. In other words, emerging markets seem to be more sensitive to Fed communication than developed economies, consistent with results in the previous Table 6. These results are mirrored in Column (2) which captures the speech-date effect, though with much lower economic significance. Higher adjusted R^2 (0.248 vs 0.209) for the tone specification over the speech-date ($\mathbb{1}_{Speech}$) specification suggests that content embedded in Fed speeches matters more than mere communication events, supporting the information channel hypothesis.

Insert table 7 about here.

5.2 The US financial crisis

Does the impact of Fed speeches intensify during crisis episodes? If so, during the US financial crisis (FC) in our sample, we should expect to see significant increases in the magnitude of the coefficients corresponding to the Federal Reserve speech tone. Schmeling and Wagner [2024], for example, show that the ECB speech tone reached its minimum during the US financial crisis. To examine the role of the FC in moderating the influence of Fed speeches,

[27] Colombia, Italy, France, South Africa, Mexico and Chile also show significantly negative sensitivity to Fed speeches.

we define the binary indicator variable '$\mathbb{1}_{FC}$' which assumes the value 1 during the FC and 0 otherwise.[28] The corresponding regression specifications are as below.

$$Y_{i,t} = a_0 + a_1 \text{Tone}_t + a_2 \mathbb{1}_{FC,t} + a_3 \text{Tone}_t \times \mathbb{1}_{FC,t} + \sum_j b_j X^j_{i,t} + \lambda_i + \mu_t + u_{i,t} \tag{12}$$

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Speech,t} + a_2 \mathbb{1}_{FC,t} + a_3 \mathbb{1}_{Speech,t} \times \mathbb{1}_{FC,t} + \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \tag{13}$$

Columns (1) and (2) of Table 8 presents relevant results. The interaction term in Column (1) (Tone$\times\mathbb{1}_{FC}$) shows that a positive Fed speech tone during the crisis substantially reduced sovereign credit spreads compared to non-crisis times (-96.12, p-value < 0.05). A 0.1 unit increase in the positivity of Fed speeches—equivalent to a unit interquartile range—during the FC corresponds to a 9.6 basis point reduction in sovereign CDS spreads, which is approximately 2.5 times the baseline effect. In Column (2), we find that during the FC, sovereign CDS spreads increased significantly (38.75, p-value < 0.05) indicating heightened risk perception during those turbulent times. The interaction term in Column (2) ($\mathbb{1}_{Speech} \times \mathbb{1}_{FC}$) reveals that on days when Fed delivered speeches during the crisis, sovereign spreads showed a significant reduction regardless of tone. In other words, Fed communication becomes significantly more influential during a crisis episode like the FC. The significant negative coefficients on interaction terms suggest that during periods of market distress, positive Fed speeches provide major reassurance to global markets, which manifests in significant narrowing of sovereign credit spreads. These results support the view that central bank communication channels become more potent during uncertain times, consistent with enhanced attention and information processing during stressed market conditions [Born et al., 2014, Schmeling and Wagner, 2024].

Insert table 8 about here.

[28] The period for the US financial crisis: 2007Q2 to 2009Q2, is taken from Bekaert et al. [2014].

5.3 The monetary policy stance of the Fed

Since Fed communication impacts sovereign credit spreads, presumably the US monetary policy stance could also have a role in explaining movements in CDS spreads. For example, Gilchrist et al. [2019] shows that tightening (easing) of the Fed monetary policy stance can widen (narrow) sovereigns' credit spreads. To examine this matter in more detail, we define a '$\mathbb{1}_{Tight}$' which assumes value 1 during monetary tightening by the Fed and 0 otherwise.[29] The corresponding regression specifications are as below.

$$Y_{i,t} = a_0 + a_1 \text{Tone}_t + a_2 \mathbb{1}_{Tight,t} + a_3 \text{Tone}_t \times \mathbb{1}_{Tight,t} + \sum_j b_j X^j_{i,t} + \lambda_i + \mu_t + u_{i,t} \tag{14}$$

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Speech,t} + a_2 \mathbb{1}_{Tight,t} + a_3 \mathbb{1}_{Speech,t} \times \mathbb{1}_{Tight,t} + \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \tag{15}$$

Columns (3) and (4) of Table 8 present relevant results. By itself, the '$\mathbb{1}_{Tight}$' is not significant, indicating no impact of US tightening or easing on spreads. However, the significantly negative interaction term in column (3) 'Tone$\times\mathbb{1}_{Tight}$' implies that positive (negative) Fed speeches during episodes of US monetary policy tightening (loosening) narrowed (amplified) sovereign credit spreads strongly (-59.05, p-value < 0.05). Further, as column (4) shows, speeches—regardless of their tone—during episodes of US monetary tightening reduced sovereign spreads significantly, though with much lower effect size.

5.3.1 Impact of positive speeches during the financial crisis and US monetary tightening

In a recent study, Gorodnichenko et al. [2023] present evidence that non-verbal communication, specifically positive vocal cues from central bank chairs during FOMC press conferences can convey information that raises share prices. In this spirit, we examine whether positive speeches of the Federal Reserve Board of Governors have an especially strong impact on

[29] In our sample, based on Bernanke [2020] this corresponds to the periods 2006Q1–2007Q4 and 2016Q1–2019Q4.

sovereign spreads, we define a binary variable '$\mathbb{1}_{Pos\_Speech}$' which assumes values 1 for positively toned speeches and 0 otherwise. Corresponding regression specifications are as follows:

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Pos\_Speech,t} + a_2 \mathbb{1}_{FC,t} + a_3 \mathbb{1}_{Pos\_Speech,t} \times \mathbb{1}_{FC,t} + \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \tag{16}$$

$$Y_{i,t} = a_0 + a_1 \mathbb{1}_{Pos\_Speech,t} + a_2 \mathbb{1}_{Tight,t} + a_3 \mathbb{1}_{Pos\_Speech,t} \times \mathbb{1}_{Tight,t} + \sum_j b_j X^j_{i,t} + \lambda_i + u_{i,t} \tag{17}$$

Column (1) of Table 9 displays results for the impact of positively toned Fed speeches during the US financial crisis. Consistent with our prior result in Table 8, the FC dummy is positive and significant (31.47, p-value < 0.05), indicating widening sovereign credit spread during the distressed episode. However, the interaction with the binary indicator variable encoding positive speeches is significantly negative (-31.37, p-value < 0.01) such that the aggregate impact is almost nullified. In other words, credit spreads during the FC had increased significantly but a positive speech during that distressed period undid most of the amplification in the sovereign spread. It is noteworthy that the coefficient on the '$\mathbb{1}_{Pos\_Speech}$' is indistinguishable from 0 which indicates that positive speeches by themselves do not move credit spreads. Their impact registers only during distressed periods wherein their delivery carries more weight by assuaging investors' concerns regarding the extent of the downturn [Born et al., 2014]. Similarly column (2) shows that by itself, monetary tightening in the US does not move sovereign credit spreads. However, the interaction term ('$\mathbb{1}_{Pos\_Speech} \times \mathbb{1}_{Tight}$') displays significant negative coefficient (-8.95, p-value < 0.05) which indicates that positive speeches during Federal Reserve rate hikes narrow CDS spreads. In other words, positive Fed messaging during monetary policy tightening injects confidence and provides strategic complementarity in which hawkish policy concerns are offset by positive communication.

Insert table 9 about here.

In short, we find that the impact of Federal Reserve speeches is state-dependent and nonlinear, with particularly pronounced values during the US financial crisis and periods of monetary tightening. A positive speech during acute market distress goes a long way to assuage investors' anxiety and improves credit sentiment. Further, positive speeches during periods of rate hikes inject confidence and optimism among international debt investors which in turn manifests in narrowed sovereign credit spreads.

6 Additional results

In this section we present additional results examining the long term impact of Fed speeches and advance spread-relevant information embedded therein.

6.1 Long term impact

Is the impact of Fed speeches transitory or more long term? This question is relevant because in a related paper, Cieslak and Vissing-Jorgensen [2021] show that Fed communication can predict changes in asset prices up to one week in the future. To examine if the impact of Fed speeches on sovereign spreads is lasting, we estimate a variant of our prior regression specification as below:

$$Y_{i,t+5n} - Y_{i,t} = a_0 + a_1 \text{Tone}_t + \sum_j b_j \times (X^j_{i,t+5n} - X^j_{i,t}) + \lambda_i + \mu_t + u_{i,t} \tag{18}$$

Here $Y_{i,t}$ refers to the 5-year CDS spread for country i at date t. The speech is delivered at time t. Changes in spreads are calculated over four different intervals: $[t, t+5n]^4_{n=1}$ with lengths of 5, 10, 15, and 20 days respectively. We take a special subset of the speeches for estimating long term impact. Only those speeches are admissible which are delivered at time t but are not followed up by any other speech up to 20 days in the future, i.e., $t+20$, which reduces our sample substantially. We argue that this selection is necessary if we intend to

capture the impact of the speech given at time t over the coming days, since for an interval, say $[t, t+10]$ other Fed speeches could reinforce, contradict, or muddy the impact of the original message.[30]

With this caveat in mind, we interpret results presented in Table 10. We find that for isolated speeches delivered at time t, the sovereign spreads at times $t+5, t+10, t+15$ and $t+20$ are significantly lower than that at time t. The statistical significance is the strongest for the interval $[t, t+5]$ (p-value < 0.05) and reduces for longer intervals. In other words, there is evidence that the impact of relatively isolated Fed speeches is significant and long lasting. Among other variables, the change in US term spread and the change in the individual countries' stock market returns have a significant negative relationship with sovereigns spread, while the change in US 10-year bond yield and the US stock market returns display a significant positive relation.

However, we advocate caution in interpreting our results for two main reasons. First, selection bias: relatively isolated speeches could be fundamentally different from regular speeches. Second, even though we strive to include only isolated speeches in estimating long term impacts, there could be other communication events, such as FOMC meetings or Congressional testimonies etc. which could have material implications for sovereign spreads. In other words, we cannot perfectly disentangle the impact of Fed speeches from other information events and hence our results on long term impact must be interpreted with these caveats in mind.

Insert table 10 here.

We provide an alternative validation for our results on long term impact by employing the local projection method [Jordà, 2005] to study the dynamic response of sovereign CDS spreads to the US Fed speech tone along the lines of Accominotti et al. [2024]. The local-projection framework is ideally suited to our context as it eliminates the requirement to

[30] On average, there are about 4 Fed speeches in a month and hence the pool of relatively isolated speeches is small.

invert a potentially misspecified VAR, provides consistent estimates with minimal dynamic assumptions, and facilitates inference at each horizon robust to potential heteroskedasticity and autocorrelation. For each future period $s \in \{0, \ldots, 20\}$, we estimate the following equation using daily panel data:

$$\begin{aligned} Y_{i,t+s} =& a_{1,s} \mathbb{1}_{Speech,t} + a_{2,s} Tone_t \times \mathbb{1}_{Speech,t} \\ &+ \sum_{j,n=0}^{n=2} b_j^s X_{i,t-n}^j + \sum_{j,n=1}^{n=2} c_j^s Z_{i,t-n}^j + \lambda_{i,s} + u_{i,t}^s \end{aligned} \tag{19}$$

where X_{t-n}^j denotes the complete set of control variables as included in Equation (3), and $Z_{i,t-n}^j$ includes CDS spreads and Fed tone. The model specification also incorporates a country-fixed effect $\lambda_{i,s}$, in addition to including indicators for the weekday and the month of speech. The impulse response is computed over a period of twenty days by examining the trajectory of the coefficient $a_{2,s}$, with confidence interval based on robust standard errors. The findings are presented in the Figure 1. The results indicate a dynamic and prolonged impact of the Fed Board of Governors' speech tone on the movements in sovereign CDS spreads.

Insert figure 1 here.

6.2 Advance information embedded in Fed speeches

Prior research has demonstrated the significant impact of FOMC announcements and shocks on credit spreads [Javadi et al., 2018, Walz, 2024]. However, another line of recent research has argued that the speeches delivered by the Federal Reserve are even more important than announcements made during FOMC meetings since they disseminate major FOMC decisions well ahead of time [Swanson, 2023, Swanson and Jaywickrema, 2023, Cieslak et al., 2023]. Hence we investigate if Fed speeches prior to FOMC meetings have any influence on CDS spreads across countries over and above the content of FOMC announcements. We regress

CDS spreads on FOMC announcements' tone, and on the median tone of Fed speeches delivered 1–4 weeks prior to the FOMC meetings in the presence of speech text controls (speech % CW, speech AWPS) and FOMC announcements' text controls (FOMC % CW, FOMC AWPS). The results are presented in Table 11 where the Fed speech tone 1-4 weeks prior to FOMC announcements continues to manifest its significant negative association with the CDS spreads for all countries. The coefficients for Fed speech tone range from -123 to -138 (p-values < 0.05), while FOMC announcement effects range from -84 to -107 (p-values < 0.05). This means that informal communications actually have larger impacts on global credit markets than the formal policy announcements. This persistence of results beyond one week suggests we are not just capturing last-minute policy hints, but genuine advance strategic communication. We also note that the adjusted R^2 values remain quite high (23–25%) across all specifications, suggesting that this model explains a substantial portion of CDS spread variation.

Insert table 11 about here.

Insofar as sovereign CDS spreads are concerned, instead of formal FOMC announcements being the primary source of new information, it appears that Fed officials gradually reveal their thinking through speeches over the weeks leading up to meetings. Market participants apparently pay close attention to these incremental revelations, incorporating them into their assessment of global credit conditions well before the official policy announcement. The larger magnitude of speech effects compared to FOMC effects suggests that by the time the official announcement arrives, a part of its informational content has already been absorbed by markets through earlier speeches. The formal announcement might actually be less surprising precisely because Fed officials have been preparing markets through their speeches. Our results align with recent paper which argue in favor of Fed speeches being more important sources of information than FOMC announcements [Swanson and Jaywickrema, 2023, Cieslak and McMahon, 2023, Swanson, 2023]. Rather than simply announcing decisions

after they are made, Fed officials appear to use speeches as a way to gradually guide market expectations over time.

7 Robustness

In the following discussion, we include tests which confirm that our results are robust to the inclusion of alternative tone quantification schemes, other relevant information releases and to other relevant control variables.

7.1 Inclusion of alternative tone metrics

In our study, we rely on the concept of valence shifters which can modify the tone of sentences and hence add nuance and qualification to the connotation of the text. However, there are several other ways by which one could quantify the tone of texts associated with Federal Reserve speeches. For example, i) the Loughran and McDonald [2011] (LM) unigram approach compiles a dictionary and assigns positive and negative weights to commonly used financial terms; ii) FinBERT [Huang et al., 2023] is a well-known pre-trained natural language processing (NLP) model for analyzing the sentiment of financial text, built by training the BERT language model in the finance domain, using a large corpus of financial terms;[31] and iii) the 'Dove-Hawk' (DH) index introduced in Cieslak and McMahon [2023] is calculated as the difference between the number of 'Dovish' and 'Hawkish' words and phrases in speeches delivered by FOMC committee members. Table 1 provides results on descriptive statistics of the three alternate metrics. LM tone ranges from -0.09 to 0.10 with a standard deviation of 0.02, FinBERT ranges from -0.34 to 0.83 (SD $= 0.17$) while the Dove-Hawk index has a range of -1 to 1 with standard deviation 0.47.

Table 12 presents results: Panel A displays the impact of alternative tone quantification

[31] FinBERT classifies words as positive, neutral, or negative based on computing the probability of words belonging to each category and employs a discretization technique to quantify tone. Huang et al. [2023] show that FinBERT outperforms several leading machine learning algorithms in capturing the tone of financial texts.

metrics on sovereign spreads; and Panel B presents results in which the valence shifter tone is first regressed on alternate metrics to yield the orthogonalized complement of the valence shifter tone (denoted as 'residual') which is then used in conjunction with the other metrics—both individually and jointly—to estimate the impact on the sovereign spreads. The adjusted R^2s when valence shifter tone is regressed on alternative metrics ranges from 0.01 (DH index) to 0.79 (all metrics jointly), which indicates that our approach is able to capture features distinct from other tone quantification schemes.

Panel A reveals significant heterogeneity across tone measurement approaches. The Dove-Hawk Index shows no explanatory power for sovereign CDS spreads, while both FinBERT and Loughran-McDonald dictionary demonstrate significant negative relationships, which provides validation for our benchmark finding. The interaction specifications (columns 4–6) show that only the LM tone maintains significance when interacted with speech indicator variables. Panel B provides crucial evidence on the incremental information content of the valence shifter approach. The orthogonalized valence shifter tone remains consistently significant across all specifications (-37.35 to -60.26 p-value < 0.05), even after controlling for alternative metrics—both individually and jointly. This suggests the valence shifter methodology captures unique linguistic nuances ignored by existing approaches. The persistence of valence shifter tone significance in residual analysis indicates that accounting for grammatical modifiers (amplifiers, de-amplifiers, negators, adversative conjunctions) provides economically meaningful information beyond simple word counting or machine learning sentiment classification. The results suggest sovereign debt markets are sensitive to subtle communication nuances that currently popular tone measures tend to ignore, supporting theories of sophisticated market participants who parse central bank language carefully. The fact that our orthogonalized valence shifter-based tone captures features over and above other metrics stems from the fact that Fed speeches are strategic communications. Fed officials want to guide market expectations without appearing to make firm commitments that might box them into specific policy paths. Connotation-altering modifiers such as valence shifters (e.g,

'although', 'however', 'faintly', 'whereas', 'somewhat' etc.) are ideally suited to transmitting such nuanced communication.

Insert table 12 about here.

7.2 Accounting for FOMC communication

Do Fed BoG speeches contain information over and above that contained in FOMC communication? To account for this possibility, we remove speeches which are delivered one week before as well as one week after the FOMC meetings to ensure that our results are not driven by FOMC communications and present results in Panel A Table 13. The estimated results are similar to the baseline results in Table 3, namely, that an increase in positivity in the tone of Fed speeches is associated with a significant fall in countries' sovereign CDS spreads. Excluding speeches within one week of FOMC meetings addresses endogeneity concerns that Fed speech effects merely reflect scheduled policy announcements. The stronger coefficients (-46.48, p-value < 0.01) indicate that Fed speeches provide independent information beyond formal monetary policy communications. This supports the hypothesis that Board of Governors' speeches serve as distinct communication channels.

7.3 Accounting for macroeconomic announcements

Further, are our results driven by countries' domestic macroeconomic announcements and not due to Fed speeches? To assuage such concerns, we remove all dates which coincide with the announcement of domestic macro variables. For each country in our sample, we remove all dates on which inflation, unemployment, and GDP announcements have taken place for our sample duration, which leads to 480 speeches (out of 757).[32] We present results in Panel B, Table 13. We find that the benchmark estimates continue to retain their inference and

[32]The list of macroeconomic variables, the announcement dates of which we account for, in line with Adrian et al. [2013], is specified in the Internet Appendix.

validity. Removing speeches coinciding with macroeconomic releases eliminates potential spurious correlation from information-rich periods.

7.4 Inclusion of other relevant controls

Further, we ensure that our results are robust to the inclusion of the US and Euro GDP and inflation growth rate expectations as per the 'Survey of Professional Forecasters' (SPF) in Panel C and the US term premium, corporate bond spread and variance risk premium in Panel D.[33]

Panel C presents results with the expectations of US and Eurozone GDP and inflation growth from the Survey of Professional Forecasters (SPF). We find that the coefficients corresponding to survey forecasts are quite significant in explaining the CDS spreads of sovereigns. For the Federal Reserve speech tone, the results retain their significance (-39.20 p-value < 0.05, -31.75, p-value < 0.05) with unchanged explanatory power, which offers evidence that Fed speeches contain incremental information beyond standard forecasting inputs.

Finally, in Panel D, we find that the US term premium's coefficient is positive and significant suggesting that rises in the US term premia correspond to significantly increased sovereign CDS spreads. Further, the US corporate bond spread also shows some positive significance on speech dates but we find the impact of the variance risk premium to be indistinguishable from zero. The Fed tone retains its negative significance with CDS spreads (-26.46 p-value < 0.05) while the explanatory power (adjusted R^2) increases to 0.27, indicating that Fed speeches operate beyond standard risk premium channels. This suggests direct communication effects rather than indirect transmission through US yield curve dynamics.

Insert table 13 about here.

[33]Data for the US term premium are downloaded from the New York Federal Reserve website: https://www.newyorkfed.org/research/data_indicators/term-premia-tabs#/overview. Data for the US corporate bond spread are taken from Bloomberg, while that for the variance risk premium is taken from https://sites.google.com/site/haozhouspersonalhomepage/

8 Concluding remarks

This study provides comprehensive evidence that Federal Reserve Board of Governors' speeches have significant negative association with sovereign CDS spreads. Our analysis reveals that positive Fed speeches depress sovereign CDS spreads—especially for emerging economies—with economically meaningful magnitudes ranging from 5–35 bps. The impact of Fed speeches intensifies during the US financial crisis and during periods of Federal Reserve tightening. We also show that Fed speeches contain advance spread-relevant information over and above that contained in FOMC announcements and that the Board of Governors use official speeches to guide market expectations. By the time of the FOMC meetings, a large component of the information content of the Fed speeches gets priced.

We make the following important contributions to the literature on central bank communication and international financial spillovers. First, our valence shifter-based tone quantification captures nuances that conventional sentiment analysis methods miss, demonstrating explanatory power over and above widely-used alternatives such as the Loughran-McDonald dictionary, FinBERT, and Dove-Hawk indices. The methodological innovation helps explain why previous studies may have found limited or inconsistent relationships between central bank communication and asset prices. Second, we contribute towards the understanding of the transmission mechanisms through which Fed speeches influence sovereign spreads by providing evidence in favor of the following channels: i) positive Fed speeches on macroeconomic matters reduce sovereign credit risk premiums during periods of extreme interest rate movements which in turn, manifest in lower CDS spreads; and ii) positive Fed speeches tend to weaken the US dollar which in turn, raises government-related cross border flows, improves investors' risk appetite and results in lower sovereign CDS spreads.

To conclude, our findings argue that Federal Reserve speeches serve as a powerful channel for international policy transmission, with systematic and economically significant relationships to sovereign credit risk perceptions worldwide. The novel methodology we introduce and the transmission mechanisms we identify provide a foundation for understanding how

central bank communication influences global credit markets.

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Appendix A Sample selection

Table A.1: Sample selection

Panel A: Country selection

	Dropped	Count
Countries with 90% of global government debt as on 2020 Dec in descending order		30
Countries with at least 10 years of continuous CDS data post-2006	3	27
Countries for which at least 10 years of macroeconomic data are available	8	19

Panel B: Final sample

Country	Classification	Sample Period	Observations
Colombia	Emerging	Jan 2006 - Nov 2019	3,282
Hungary	Emerging	Jan 2006 - Dec 2020	3,609
Indonesia	Emerging	Jan 2006 - Dec 2020	3,527
Mexico	Emerging	Jan 2006 - Dec 2020	3,639
Poland	Emerging	Jan 2006 - Dec 2020	3,625
South Africa	Emerging	Jan 2006 - Dec 2020	3,623
Czech Republic	Emerging	Jan 2006 - Dec 2020	3,501
Thailand	Emerging	Jan 2008 - Dec 2020	3,023
Chile	Emerging	Jan 2009 - Dec 2020	2,768
France	Developed	Jan 2006 - Dec 2020	3,709
Germany	Developed	Jan 2006 - Dec 2020	3,914
New Zealand	Developed	Jan 2006 - Dec 2020	3,679
Norway	Developed	Jan 2006 - Dec 2020	3,438
Sweden	Developed	Jan 2006 - Dec 2020	3,628
UK	Developed	Jan 2006 - Dec 2020	3,592
Italy	Developed	July 2007 - Dec 2020	3,320
Canada	Developed	Jan 2008 - Dec 2020	2,865
Israel	Developed	July 2008 - Dec 2020	2,335
Switzerland	Developed	Jan 2009 - Dec 2020	2,891

Note: This table presents the sample selection and final sample time period for each country used in this study. The countries are classified as 'Emerging' or 'Developed' based on MSCI.

Appendix B Variable definitions

Table B.1: Definitions of the variables used in this study

Variable	Definition
Speech Text Measures:	
Fed Tone	The tone of each Fed BoG speech calculated at the sentence level using polar words from Loughran and McDonald dictionary [Loughran and McDonald, 2011], ngram phrases [Apel and Blix Grimaldi, 2012, Apergis and Pragidis, 2019] and valence shifters [Anand et al., 2022]. The tone of the whole speech is the average over all sentences. The speeches are downloaded from the Federal Reserve website: https://www.federalreserve.gov/
Average words per sentence (AWPS)	The number of words in the speeches divided by the total number of sentence termination characters after removing those associated with headings and abbreviations.
Percent complex words (% CW)	The percentage of words with more than two syllables.
Dependent variables:	
CDS spread	The 5-year CDS spreads as downloaded from the **Markit** database.
CDS risk premium	Calculated as per Friewald et al. [2014]. Details on its computation are in the Internet Appendix.
Control variables:	
Debt Ratio	The total Debt to GDP ratio for each country in the sample as downloaded from Bloomberg.
Inflation	The benchmark inflation index for each country in the sample as downloaded from Bloomberg.
VIX	The benchmark volatility index for US in the sample as downloaded from Bloomberg.
Bond10Y	The yield of the 10-year bond of the US as downloaded from Bloomberg.
US Term Spread	The difference between the yields of the 10-year and 3-month bond of the US as downloaded from Bloomberg.
US Return	Daily return for the S&P 500 Index. Downloaded from Bloomberg
ToT Volatility	The 18-month rolling volatility of terms of trade (exports/imports) as in Hilscher and Nosbusch [2010]. The exports and import data are downloaded from Bloomberg.
Reserves	The exchange rate reserves without gold (in USD) as downloaded from Bloomberg.
Log(Market Cap)	The market cap of the benchmark index for each country. Downloaded from Bloomberg.

Variable	Definition
Corporate Bond Spread	US changes in investment grade yield spread [Longstaff et al., 2011] as downloaded from Bloomberg.
Variance Risk Premium	US Variance risk premium as per Londono and Zhou [2017]. Source: https://sites.google.com/site/haozhouspersonalhomepage/

Figures

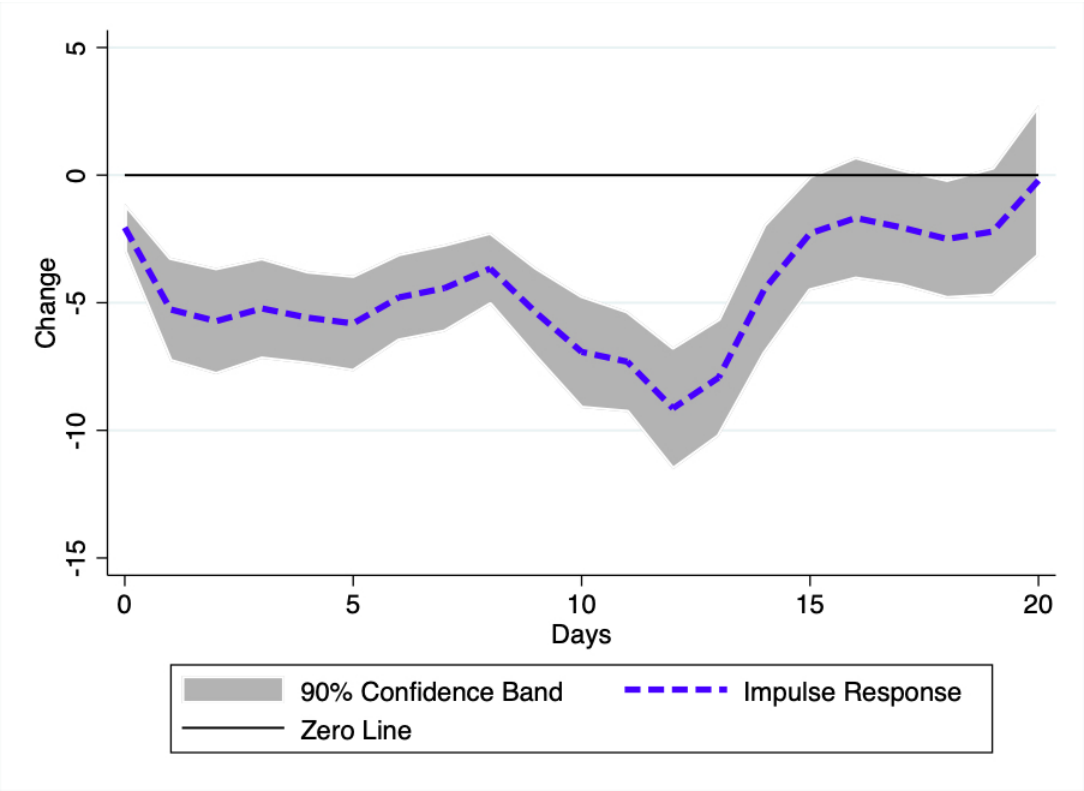

Figure 1: The figure shows the cumulative impact of Fed speech tone on CDS spreads. $t = 0$ is the day of the shock.

Tables

Table 1: Descriptive statistics

	Min	Mean	Median	SD	IQR	Max
Panel A: Text characteristics of Fed BoG speeches						
Tone	-0.36	-0.05	-0.05	0.09	0.10	0.33
% CW	10.01	29.92	29.67	8.22	11.67	59.10
AWPS	11.50	29.03	28.00	7.75	9.00	66.00
LM Tone	-0.09	-0.02	-0.03	0.02	0.02	0.10
FinBERT Tone	-0.34	0.09	0.05	0.17	0.19	0.83
Dove-Hawk Index	-1.00	0.13	0.02	0.47	0.33	1.00
Panel B: Sovereign five year CDS spreads (basis points)						
CDS spread	1.20	88.12	63.90	89.09	100.56	1246.75

Note: Summary statistics for text characteristics of the Fed speeches (Panel A) and for the 5-year CDS spreads (Panel B). 'SD' and 'IQR' refer to the standard deviation and inter-quartile range respectively. '%CW' and 'AWPS' refer to 'Percentage of Complex Words' and 'Average Words Per Sentence' respectively. 'LM Tone' refers to the unigram dictionary-based tone calculated according to Loughran and McDonald [2011]. 'FinBERT Tone' refers to the tone of the BERT Natural Language Processing Model trained on text in the financial domain [Huang et al., 2023]. The 'Dove-Hawk Index' is calculated as the difference between the number of 'Dovish' and 'Hawkish' words and phrases in speeches delivered by FOMC committee members [Cieslak et al., 2023]. Detailed variable definitions can be found in the Appendix in Table B.1.

Table 2: Correlation Table

	Tone	% CW	AWPS	Debt Ratio	Inflation	US VIX	US Bond 10Y	US Term Spread	US Return	ToT Vol	Reserves	Market Cap
Tone	**1**											
% CW	0.01	**1**										
AWPS	**-0.03**	**-0.04**	**1**									
Debt Ratio	**-0.04**	0.01	0.01	**1**								
Inflation	0.01	0.01	**0.03**	**-0.04**	**1**							
US VIX	0.01	**0.06**	**-0.05**	-0.01	0.01	**1**						
US Bond 10Y	**0.12**	**0.05**	**-0.17**	**-0.11**	**0.05**	**0.04**	**1**					
US Term Spread	**-0.23**	0.01	**-0.05**	**0.13**	**-0.06**	0.01	**-0.25**	**1**				
US Return	**0.03**	**-0.02**	**0.04**	0.01	0.01	**-0.75**	**-0.04**	**-0.05**	**1**			
ToT Vol	0.01	0.01	-0.02	**-0.16**	**-0.10**	**0.04**	0.01	0.03	**-0.02**	**1**		
Reserves	**0.03**	0.01	-0.01	**-0.23**	-0.01	-0.01	**0.06**	**-0.09**	**0.01**	**0.09**	**1**	
Market Cap	**-0.03**	0.01	-0.03	**0.28**	0.01	-0.02	**0.05**	**0.05**	**0.01**	**0.09**	**-0.26**	**1**

Note: Correlation table for the speech-related and macroeconomic control variables in this study. Bold entries represent significance at the 5% significance level. '%CW', 'AWPS' and 'ToT Vol' refer to 'Percentage of Complex Words', 'Average Words Per Sentence' and 'Terms of Trade Volatility respectively. Detailed variable definitions can be found in the Appendix in Table B.1.

Table 3: Impact of Fed speech tone on 5-year CDS spreads

	(1)	(2)	(3)	(4)	(5)	(6)
Tone	−138.06***	−39.66**				
	(29.16)	(16.37)				
$\mathbb{1}_{Speech}$			−5.88***	−1.94*	−13.64***	0.54
			(1.97)	(1.17)	(2.82)	(4.90)
$\mathbb{1}_{Speech}$×Tone					−138.18***	−32.13**
					(29.21)	(15.03)
% CW		0.13				0.84
		(15.19)				(14.30)
AWPS		−0.17				−0.15
		(0.18)				(0.16)
US Term Spread		20.28***		21.36***		21.17***
		(4.63)		(5.25)		(5.18)
US Bond10Y		−18.22***		−21.84***		−21.79***
		(5.52)		(5.78)		(5.77)
US Return		−252.35		−111.78		−106.71
		(371.55)		(116.55)		(116.55)
US VIX		−28.27		−13.06		−12.73
		(36.23)		(11.62)		(11.60)
Debt Ratio		22.13		19.61		19.77
		(17.95)		(19.32)		(19.33)
Inflation		−0.59***		−0.60***		−0.60***
		(0.16)		(0.22)		(0.22)
ToT Vol		−0.38		−0.21		−0.21
		(1.85)		(1.91)		(1.91)
Reserves		−34.52		−45.47**		−45.21*
		(22.08)		(23.17)		(23.25)
Market Cap		−10.42		−11.41		−11.43
		(8.35)		(8.36)		(8.36)
Time-based controls	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Speech-date fixed effects	Yes	Yes	No	No	No	No
Adj. R^2	0.03	0.22	0.01	0.20	0.01	0.20
# Obs	11657	11657	63486	63486	63486	63486

Note: This table presents results from the panel regression of 5-year sovereign CDS spreads on Fed BoG's speech tone for all countries in the sample in line with the regression specification in equations (1) (columns 1 and 2), (2) (columns 3 and 4) and (3) (columns 5 and 6) respectively. Time-based controls include day-of-the-week and month dummies. Speech-date fixed effects operate on the date the speech is delivered (e.g., 2006-10-23). Standard errors are robust and clustered at the country and speech-date level ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively. All control variables and their sources are described in detail in the Appendix Table B.1.

Table 4: Impact of the macroeconomic and financial content of Fed speech tone on CDS spreads in line with regression specifications (4), (5) and (6) respectively. Standard errors are robust and clustered at the country and speech-date level. Speeches which contain macroeconomic (financial) content in the top quintile are deemed macroeconomic (financial) speeches. 'Macro Tone' ('Fin tone') is the tone of macro (financial) speeches and assumes the value 0 for all non-macro (non-financial) speeches. IR and EQ shocks are calculated as per Leombroni et al. [2021] and the indicators assume value 1 if the variable is in the top or bottom quintile. The Fed speech is delivered at date t and the changes in spreads (and credit risk premiums) are computed from $t-1$ to $t+1$. All variables and their sources are described in detail in the Appendix Table B.1. The calculation of CDS risk premiums is based on Friewald et al. [2014] and is described in the Internet Appendix.

Dependent variable: $CDS_{t+1} - CDS_{t-1}$			
Panel A: All speeches			
Macro Tone	1.90		1.02
	(2.30)		(2.36)
$\mathbb{1}_{IR\_Shock}$	0.13		0.16
	(0.14)		(0.14)
Fin Tone		0.32	2.95
		(1.85)	(2.12)
$\mathbb{1}_{EQ\_Shock}$		−0.17	−0.21
		(0.13)	(0.13)
Macro Tone×$\mathbb{1}_{IR\_Shock}$	−24.15***		−24.13***
	(7.26)		(7.34)
Fin Tone×$\mathbb{1}_{EQ\_Shock}$		−2.85	−1.87
		(6.93)	(6.12)
All Controls	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Speech-date fixed effects	No	No	No
Adj. R^2	0.16	0.16	0.16
# Obs	63486	63486	63486
Panel B: Chairperson speeches			
Macro Tone	3.35		2.59
	(2.27)		(2.82)
$\mathbb{1}_{IR\_Shock}$	0.35		0.42
	(0.47)		(0.49)
Fin Tone		−10.29**	−1.28
		(4.83)	(6.16)
$\mathbb{1}_{EQ\_Shock}$		−0.20	−0.55
		(0.50)	(0.51)
Macro Tone×$\mathbb{1}_{IR\_Shock}$	−31.83***		−31.37***
	(11.39)		(11.31)
Fin Tone×$\mathbb{1}_{EQ\_Shock}$		5.27	−0.00
		(16.07)	(15.58)
All Controls	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Speech-date fixed effects	Yes	Yes	Yes
Adj. R^2	0.21	0.20	0.21
# Obs	3341	3341	3341

Continued on next page

Table 4 continued from previous page

Dependent variable: $RP_{CDS_{t+1}} - RP_{CDS_{t-1}}$ **(CDS risk premium)**			
Panel C: All speeches			
Macro Tone	0.66		0.49
	(0.56)		(0.61)
$\mathbb{1}_{IR\_Shock}$	0.10		0.10
	(0.11)		(0.11)
Fin Tone		0.46	1.15
		(0.77)	(0.91)
$\mathbb{1}_{EQ\_Shock}$		0.03	−0.01
		(0.06)	(0.06)
Macro Tone×$\mathbb{1}_{IR\_Shock}$	−7.27***		−7.32***
	(1.71)		(1.69)
Fin Tone×$\mathbb{1}_{EQ\_Shock}$		−0.83	−0.82
		(2.33)	(2.19)
All Controls	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Speech-date fixed effects	No	No	No
Adj. R^2	0.06	0.06	0.06
# Obs	59496	59496	59496

Table 5: Impact of Fed speech tone on CDS spreads via cross border flows and the currency channel.

Panel A: Cross border flows			
	Cross Border Flows	CDS Spreads	
Tone	0.84^{*}		
	(0.43)		
Cross border flows		-122.50^{***}	
		(38.80)	
Speech-based controls	Yes	Yes	
Time-based controls	Yes	Yes	
Country fixed effects	Yes	Yes	
Speech-date fixed effects	No	No	
Other Controls	Yes	Yes	
Adj. R^2	0.59	0.38	
# Obs	725	725	
Panel B: Forex return			
Tone	0.13^{**}		
	(0.05)		
$\mathbb{1}_{Speech}$		-0.002	0.005
		(0.004)	(0.005)
$\mathbb{1}_{Speech} \times$Tone			0.15^{**}
			(0.06)
Speech-based controls	Yes	Yes	Yes
Time-based controls	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Speech-date fixed effects	Yes	No	No
Other controls	Yes	Yes	Yes
Adj. R^2	0.002	0.005	0.005
# Obs	8855	47961	47961
Panel C: USD denominated − Euro denominated CDS spread			
$\text{Tone}_{\text{Fed}} - \text{Tone}_{\text{ECB}}$	-0.0028^{**}		
	(0.0014)		
Speech-based controls	Yes		
Time-based controls	Yes		
Country fixed effects	Yes		
Speech-date fixed effects	No		
Other controls	Yes		
Adj. R^2	0.24		
# Obs	1458		

Note: Panel A of this table presents results from the panel regression of government related cross border flows on Fed BoG's speech tone for all countries in the sample in line with the regression specification in equation (1) estimated at the quarterly level. High frequency variables are aggregated quarterly by using medians as their representative estimates. Panel B replaces the dependent variable in equations (1), (2) and (3) respectively with forex return in line with Colacito et al. [2020]. Panel C presents panel regression results with dependent variable as the difference in USD denominated and EUR denominated CDS spreads based on the specification in equation (7). The estimation is performed at the monthly level and high frequency variables are aggregated monthly by using medians as their representative estimates. Standard errors are robust and clustered at the country and speech-date level. All variables and their sources are described in detail in the Appendix Table B.1.

Table 6: Impact of Fed speech tone on CDS spreads on emerging and developed economies

	(1)	(2)	(3)	(4)
Tone	-81.89^{***}	20.31		
	(16.84)	(22.08)		
Tone$\times\mathbb{1}_{Emerging}$	-115.08^{***}	-123.25^{***}		
	(42.29)	(44.76)		
$\mathbb{1}_{Speech}$			-4.11^{***}	0.28
			(1.54)	(1.42)
$\mathbb{1}_{Speech} \times \mathbb{1}_{Emerging}$			-3.65	-4.61^{*}
			(2.44)	(2.37)
Speech-based controls	Yes	Yes	Yes	Yes
Time-based controls	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Speech-date fixed effects	Yes	Yes	No	No
Other controls	No	Yes	No	Yes
Adj. R^2	0.04	0.23	0.01	0.20
# Obs	11657	11657	63486	63486

Note: This table presents results from the panel regression of 5-year sovereign CDS spreads on Fed BoG's speech tone in line with the regression specification in equations (8) (columns 1 and 2) and (9) (columns 3 and 4) respectively. The indicator '$\mathbb{1}_{Emerging}$' takes value 1 for the MSCI emerging countries in our sample and 0 otherwise as shown in Appendix Table A.1. Standard errors are robust and clustered at the country and speech-date level. All control variables and their sources are described in detail in the Appendix Table B.1.

Table 7: Impact of Fed speech tone on CDS spreads on individual countries in line with regression specifications (10) and (11) respectively. Standard errors are robust and clustered at the country and speech-date level. 'Base' refers to reference country Canada, while the interactions are presented in the rows corresponding to the country. Control variables and their sources are described in detail in the Appendix Table B.1.

	(1)	(2)
	Tone	$\mathbb{1}_{Speech}$
Base (Canada)	64.22***	1.69***
	(15.01)	(0.48)
Chile	−115.48***	−4.57***
	(31.77)	(0.46)
Colombia	−112.54***	−0.98
	(33.35)	(1.32)
Czech	−35.39	−1.30
	(24.18)	(1.24)
France	−87.05***	−2.61***
	(10.51)	(0.80)
Germany	−27.74**	−0.44
	(13.61)	(0.33)
Hungary	−440.24***	−16.69***
	(28.94)	(2.06)
Indonesia	−209.50***	−3.66**
	(20.63)	(1.81)
Israel	−96.23***	−3.39***
	(13.33)	(0.33)
Italy	−151.27***	−11.14
	(6.69)	(10.43)
Mexico	−102.36***	−4.72***
	(21.01)	(0.94)
New Zealand	−51.36***	−0.05
	(9.48)	(0.95)
Norway	19.65	2.07
	(18.02)	(1.87)
Poland	−163.85***	−6.27***
	(17.67)	(0.56)
South Africa	−119.05***	−9.38***
	(20.03)	(0.88)
Sweden	−25.86***	0.56
	(8.35)	(0.33)
Switzerland	18.50	−0.32
	(31.55)	(0.76)
Thailand	−158.95***	−5.19***
	(14.48)	(1.25)
UK	−27.17***	0.30
	(5.45)	(0.52)
Time-based controls	Yes	Yes
Speech-based controls	Yes	Yes
Speech-date fixed effects	Yes	No
Other controls	Yes	Yes
Adj. R^2	0.24	0.20
# Obs	11657	63486

Table 8: Impact of Fed speech tone on CDS spreads during the US financial crisis and the monetary policy stance of the Fed.

	(1)	(2)	(3)	(4)
Tone	−19.10		−0.74	
	(16.49)		(9.61)	
$\mathbb{1}_{FC}$	19.10	38.75**		
	(12.49)	(15.83)		
Tone×$\mathbb{1}_{FC}$	−96.12**			
	(48.60)			
$\mathbb{1}_{Speech}$		−0.96		0.89
		(1.01)		(0.64)
$\mathbb{1}_{Speech} \times \mathbb{1}_{FC}$		−11.02**		
		(5.52)		
$\mathbb{1}_{Tight}$			−0.62	8.36
			(9.39)	(11.06)
Tone×$\mathbb{1}_{Tight}$			−59.05**	
			(23.87)	
$\mathbb{1}_{Speech} \times \mathbb{1}_{Tight}$				−4.95**
				(2.23)
Speech-based controls	Yes	Yes	Yes	Yes
Time-based controls	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Speech-date fixed effects	Yes	No	Yes	No
Other controls	Yes	Yes	Yes	Yes
Adj. R^2	0.24	0.23	0.22	0.20
# Obs	11657	63486	11657	63486

Note: This table presents results from the panel regression of 5-year sovereign CDS spreads on Fed BoG's speech tone in line with regression specifications in equations (12) and (13) in columns (1) and (2), and equations (14) and (15) in columns (3) and (4), respectively. The indicator $\mathbb{1}_{FC}$ takes the value 1 during the US financial crisis and 0 otherwise in line with Bekaert et al. [2014]. $\mathbb{1}_{Tight}$ assumes the value 1 during periods corresponding to a monetary policy tightening stance of the Fed [Bernanke, 2020]. Standard errors are robust and clustered at the country and speech-date level. All variables and their sources are described in detail in Appendix Table B.1.

Table 9: Impact of positive Fed speeches on sovereign CDS spreads

	(1)	(2)
$\mathbb{1}_{Pos\_Speech}$	1.56	1.74
	(2.08)	(1.48)
$\mathbb{1}_{FC}$	31.47**	
	(15.20)	
$\mathbb{1}_{Pos\_Speech} \times \mathbb{1}_{FC}$	−31.33***	
	(8.74)	
$\mathbb{1}_{Tight}$		4.57
		(10.22)
$\mathbb{1}_{Pos\_Speech} \times \mathbb{1}_{Tight}$		−8.95**
		(3.94)
Speech-based controls	Yes	Yes
Time-based controls	Yes	Yes
Country fixed effects	Yes	Yes
Speech-date fixed effects	Yes	Yes
Other controls	Yes	Yes
Adj. R^2	0.24	0.22
# Obs	11657	11657

Note: This table presents results from the panel regression of 5-year sovereign CDS spreads on the tone of positive speeches delivered by the Fed BoG in line with regression specifications in equations (16) and (17) respectively. The indicator $\mathbb{1}_{Pos\_Speech}$ takes value 1 when the tone is positive and 0 otherwise. $\mathbb{1}_{FC}$ takes the value 1 during the US financial crisis and 0 otherwise [Bekaert et al., 2014]. $\mathbb{1}_{Tight}$ assumes the value 1 during periods corresponding to monetary policy tightening by the Fed [Bernanke, 2020]. Standard errors are robust and clustered at the country level. All variables and their sources are described in detail in Appendix Table B.1.

Table 10: Long term impact of isolated Fed speech tone on CDS spreads

	$CDS_{t+5} - CDS_t$	$CDS_{t+10} - CDS_t$	$CDS_{t+15} - CDS_t$	$CDS_{t+20} - CDS_t$
Tone	−25.38**	−19.53*	−24.35*	−36.69*
	(12.38)	(10.13)	(14.02)	(20.06)
% CW	25.32*	23.71*	31.57*	5.37
	(13.14)	(12.42)	(18.52)	(19.60)
AWPS	0.03	0.04	0.09	−0.01
	(0.09)	(0.12)	(0.14)	(0.17)
Δ VIX	1.37*	0.47	0.06	0.52*
	(0.72)	(0.29)	(0.15)	(0.29)
Δ US Term Spread	−9.90***	−13.56***	−8.39**	−10.70***
	(2.96)	(4.93)	(4.17)	(4.05)
Δ Bond10Y	15.49**	14.10***	23.90***	14.72
	(6.48)	(5.35)	(7.30)	(10.28)
Δ Debt	17.65	69.07***	126.24	226.85
	(25.83)	(17.47)	(98.60)	(141.26)
Δ Inflation	−0.07***	0.04	0.06	0.02
	(0.02)	(0.09)	(0.12)	(0.10)
Δ ToT Vol	0.45	−0.93	−1.62	−0.53
	(0.72)	(1.01)	(1.20)	(1.31)
Δ Reserves	2.32	8.02	−4.05	−41.71
	(15.85)	(19.94)	(18.22)	(29.51)
Stock Market Return	−175.31***	−169.62***	−186.59***	−205.20***
	(51.95)	(40.28)	(40.80)	(43.60)
US Stock Market Return	207.93***	218.03***	−74.84	−80.60**
	(64.72)	(60.74)	(48.30)	(33.85)
Speech-based controls	Yes	Yes	Yes	Yes
Time-based controls	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Speech-date fixed effects	Yes	Yes	Yes	Yes
Adj. R^2	0.31	0.29	0.31	0.32
# Obs	546	546	546	546

Note: This table presents results from the panel regression of change in 5-year sovereign CDS spreads over four time intervals on the tone of isolated speeches of the Fed for all countries in the sample in line with the regression specification in equation (18). Standard errors are robust and clustered at the country and speech-date level. Detailed variable definitions can be found in the Appendix Table B.1.

Table 11: Impact of advance information embedded in the tone of Fed speeches

	(1)	(2)	(3)
	2 week prior	3 week prior	4 week prior
Fed Speech Tone	−123.08**	−135.29*	−138.28*
	(49.26)	(74.11)	(70.93)
FOMC Tone	−84.09*	−88.88**	−106.55**
	(43.68)	(44.27)	(47.63)
Fed Speech-based controls	Yes	Yes	Yes
FOMC text-based controls	Yes	Yes	Yes
Time-based controls	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Speech-date fixed effects	Yes	Yes	Yes
Other controls	Yes	Yes	Yes
Adj. R^2	0.25	0.24	0.23
# Obs	1789	2006	2135

Note: This table presents results from the panel regression of 5-year sovereign CDS spreads on Fed BoG's speech tone and the FOMC announcements' tone. Standard errors are robust and clustered at the country and speech-date level. Detailed variable definitions can be found in the Appendix Table B.1.

Table 12: Impact of Fed speech tone on CDS spreads: Alternate metrics

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Alternate metrics						
DH Index	−0.07					
	(2.92)					
FinBERT Tone		−15.58**				
		(7.11)				
LM Tone			−109.11**			
			(54.25)			
$\mathbb{1}_{Speech}$				2.93	3.64	−1.27
				(4.98)	(5.21)	(5.02)
$\mathbb{1}_{Speech}\times$ DH Index				−0.35		
				(2.56)		
$\mathbb{1}_{Speech}\times$ FinBERT Tone					−7.83	
					(6.86)	
$\mathbb{1}_{Speech}\times$ LM Tone						−120.70**
						(54.53)
Speech-based controls	Yes	Yes	Yes	Yes	Yes	Yes
Time-based controls	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Speech-date fixed effects	Yes	Yes	Yes	No	No	No
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.23	0.23	0.23	0.20	0.20	0.20
Observations	11657	11657	11657	63486	63486	63486
Panel B: Orthogonalized Tone						
Tone (DH Residual)	−40.81**					
	(16.44)					
DH Index	0.10			−0.05		
	(2.92)			(2.91)		
Tone (FinBERT Residual)		−37.35*				
		(19.88)				
FinBERT Tone		−16.39**		−10.86		
		(7.25)		(8.88)		
Tone (LM Residual)			−60.26**			
			(30.23)			
LM Tone			−112.35**	−52.35		
			(54.29)	(67.37)		
Tone (All Residual)				−56.91*		
				(30.03)		
$\mathbb{1}_{Speech}$					3.41	
					(5.11)	
$\mathbb{1}_{Speech}\times$DH Index					−0.67	
					(2.52)	
$\mathbb{1}_{Speech}\times$FinBERT Tone					7.87	
					(8.31)	
$\mathbb{1}_{Speech}\times$LM Tone					−162.49**	
					(67.25)	
$\mathbb{1}_{Speech}\times$Tone (All Residual)					−48.99*	
					(28.81)	
Speech-based controls	Yes	Yes	Yes	Yes	Yes	
Time-based controls	Yes	Yes	Yes	Yes	Yes	
Country fixed effects	Yes	Yes	Yes	Yes	Yes	
Speech-date fixed effects	Yes	Yes	Yes	Yes	No	
Other controls	Yes	Yes	Yes	Yes	Yes	
Adj. R^2	0.23	0.23	0.23	0.23	0.21	
# Obs	11657	11657	11657	11657	63486	

Note: This table presents results from the panel regression of 5-year sovereign CDS spreads on Fed BoG's speech tone for all countries in the sample in line with the regression specification in equation (1) and (3). The LM Tone refers to the tone calculated using the Loughran McDonald dictionary [Loughran and McDonald, 2011], the DH Index refers to the Dove Hawk Index calculated as per [Cieslak and McMahon, 2023] and the FinBERT Tone is calcuted as per [Huang et al., 2023]. The residual in Panel B is calculated as the residual of the regression of valence shifter-based Tone on LM, Dove Hawk Index and the FinBERT Tone respectively—both individually and jointly.

Table 13: Robustness tests: Removal of speeches and addition of controls

	(1)	(2)	(3)
Panel A: Excluding speeches 1-week around FOMC meetings			
Tone	-46.48^{***}		
	(16.96)		
$\mathbb{1}_{Speech}$		-2.42^{*}	-5.28
		(1.34)	(5.22)
$\mathbb{1}_{Speech} \times Tone$			-38.65^{**}
			(15.99)
All controls	Yes	Yes	Yes
Adj. R^2	0.22	0.21	0.21
# Obs	8937	41592	41592
Panel B: Excluding speeches on macro announcement dates			
Tone	-41.13^{**}		
	(16.60)		
$\mathbb{1}_{Speech}$		-1.91	0.43
		(1.18)	(4.98)
$\mathbb{1}_{Speech} \times Tone$			-33.46^{**}
			(15.25)
All controls	Yes	Yes	Yes
Adj. R^2	0.22	0.20	0.20
# Obs	10438	57033	57033
Panel C: Adding SPF as control			
Tone	-39.20^{**}		
	(16.27)		
$\mathbb{1}_{Speech}$		-1.97^{*}	1.33
		(1.17)	(4.95)
$\mathbb{1}_{Speech} \times Tone$			-31.75^{**}
			(14.96)
SPF US GDP growth	-16.84^{**}	-21.64^{***}	-21.39^{***}
	(7.81)	(6.60)	(6.51)
SPF US CPI growth	-49.27^{***}	-39.71^{***}	-40.07^{***}
	(13.26)	(10.51)	(10.60)
SPF Euro GDP growth	-4.19^{***}	-4.70^{***}	-4.71^{***}
	(1.07)	(1.15)	(1.16)
SPF Euro CPI growth	63.08^{***}	66.20^{***}	66.06^{***}
	(21.01)	(21.80)	(21.71)
All controls	Yes	Yes	Yes
Adj. R^2	0.22	0.20	0.20
# Obs	11657	63486	63486
Panel D: Additional controls			
Tone	-26.46^{**}		
	(13.11)		
$\mathbb{1}_{Speech}$		-3.21^{***}	5.74
		(1.24)	(4.93)
$\mathbb{1}_{Speech} \times Tone$			-22.03^{*}
			(12.63)
US TP	125.31^{***}	137.84^{***}	137.93^{***}
	(39.27)	(40.67)	(40.58)
Corporate Bond Spread	1.78	2.16^{***}	2.15^{***}
	(1.27)	(0.83)	(0.83)
Variance Risk Premium	-0.09	-0.01	-0.01
	(0.07)	(0.03)	(0.03)
All controls	Yes	Yes	Yes
Adjusted R^2	0.28	0.27	0.27
# Obs.	11575	63031	63031

Note: This table presents robustness tests based on excluding speeches 1-week around FOMC meetings, those on macro announcement dates and including additional plausible controls such as forecasts by the Survey of Professional Forecasters (SPF) and other US variables like term premium (TP), corporate bond spread and variance risk premium.