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Unpacking China's Wolf Warrior Diplomacy: Patterns, drivers, and implications*

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Abstract

In recent years, China's diplomatic rhetoric has notably taken on a more confrontational tone. The most prominent and contentious manifestation of this shift is Wolf Warrior Diplomacy (WWD). Using textual data from the Chinese Ministry of Foreign Affairs (MFA) press conferences, this study examines the trajectory of WWD, analyzing its fluctuations, the underlying factors influencing the timeline, and its distinctiveness within the broader context of China's diplomatic assertiveness. Quantitative analysis reveals a significant shift toward a more negative tone starting in July 2019, followed by a slightly more moderate tone after September 2022. The findings suggest that increased intervention by the Chinese Communist Party in MFA affairs is likely to be the primary driver behind WWD, rather than nationalism or geopolitical tensions. Further analysis identifies terms such as 'responsibility for a crime,' 'discredit,' or 'ideology' as key indicators of WWD fluctuation. This study contributes to understanding the domestic sources of Chinese foreign policy behaviors and the changing nature of Chinese diplomatic discourse under President Xi Jinping.

Keywords: Chinese foreign policy, quantitative text analysis, diplomatic rhetoric, Wolf Warrior Diplomacy

JEL classification: F51, F52, F59

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1. Introduction

China's ascent as a global power has dramatically reshaped the international political economic landscape, prompting a shift in its own view of global and regional governance. This is particularly evident in the evolving diplomatic narratives employed by China in recent years. Departing from Deng Xiaoping's famed 'hide and bide' directive, President Xi Jinping ushered in a 'new era' characterized by a more confident projection of power and a strategic vision for the global order.¹ Beyond pursuing political and economic interests, China now actively promotes its views on the global order and advocates for its own political and economic model on the international stage, reflecting a growing confidence in shaping global governance discourse.²

Arguably the most prominent and controversial manifestation of China's recent diplomatic assertiveness is what is commonly referred to as 'wolf warrior diplomacy' (hereafter, WWD). Loosely characterized as Chinese diplomats employing confrontational language in response to perceived 'unfounded' international criticism, WWD has attracted significant media attention.³ Scholars have also sought to understand and explain the recent radical shift in China's diplomatic language, with a particular emphasis on domestic political dynamics as a central driver.⁴

This study builds on previous research to shed new light on the discursive evolution of WWD. Specifically, it investigates the timeline of Chinese diplomats adopting confrontational language and examines whether their combative rhetoric has changed substantially over time. A key point of contention is determining when the structural shift in diplomatic tone occurred—essentially, pinpointing the initiation of WWD and the commencement of tonal adjustments. Moreover, by employing quantitative text analysis, this study explores the distinction between WWD and past diplomatic discourse by identifying specific terms and themes characteristic of this recent discursive turn in Chinese diplomacy, which, to the authors' knowledge, remains understudied. Notably, the study examines whether WWD reflects an assertion of specific national interest aligned with President Xi's

¹ Susan Shirk, *Overreach: How China Derailed Its Peaceful Rise* (Oxford University Press, 2023).

² Jonathan Hillman, *The Emperor's New Road: China and the Project of the Century* (Oxford University Press, 2020)

³ Steven Lee Myers, 'China's Aggressive Diplomacy Weakens Xi Jinping's Global Standing' *The New York Times* (April 17, 2020) <<https://www.nytimes.com/2020/04/17/world/asia/coronavirus-china-xi-jinping.html?searchResultPosition=9>> accessed 20 July 2024; Peter Martin, *China's Civilian Army: The Making of Wolf Warrior Diplomacy* (Oxford University Press, 2023)

⁴ Yaoyao Dai and Luwei Rose Luqiu, 'Wolf Warriors and Diplomacy in the New Era: An Empirical Analysis of China's Diplomatic Language', *The China Review* 22(2), (2022), pp. 253-283; Samuels Brazys, Alexander Dukalskis and Stefan Müller, 'Leader of the Pack? Changes in 'Wolf Warrior Diplomacy' after a Politburo Collective Study Session', *The China Quarterly* 254, (2023), pp. 484-493; Xiaolin Duan, 'Domestic Sources of China's Wolf Warrior Diplomacy: Individual Incentive, Institutional Changes and Diversionary Strategies', *The Pacific Review* 37(3), (2024), pp. 1-19; Jonathan Sullivan and Weixiang Wang, 'China's 'Wolf Warrior Diplomacy': The Interaction of Formal Diplomacy and Cyber-Nationalism', *Journal of Current Chinese Affairs* 52(1), (2023), pp. 68-88; Shaoyu Yuan, 'Tracing China's Diplomatic Transition to Wolf Warrior Diplomacy and its Implications', *Humanities and Social Sciences Communications* 10(1), (2023), pp. 1-9.

foreign policy agenda or merely represents a combative communication style.

This is by no means the first attempt to employ quantitative text analysis to explore the changes in Chinese foreign policy discourse and diplomatic communication.⁵ However, to address several methodological issues posed by previous studies, we adopt an empirical strategy that is easy to implement, transparent, and less dependent on prior assumptions. For example, focusing on WWD, Dai and Luqiu use data from the Ministry of Foreign Affairs (MFA) press conferences to measure the escalation of hostile statements.⁶ Brazys, Dukalskis, and Müller's work employs Latent Semantic Scaling (LSS), a semi-supervised machine learning, to develop the WWD index using Twitter posts directed at OECD and non-OECD countries.⁷ While these studies offer unique value, the validity of their measurements largely depends on the quality of hand-coding and a prior understanding of China's diplomatic language. In contrast, this study seeks to measure and analyze tonal shifts using a general sentiment dictionary as a baseline, potentially reducing biases arising from human interventions and assumptions.

This study reveals several novel findings. First, sentiment analysis reveals that the MFA spokespersons' tone towards OECD countries has significantly shifted to a negative tone, a phenomenon that has occurred once before around 2000. Second, the change point analysis indicates that the recent negative shift in Chinese diplomatic tone, indicative of WWD, can be traced back to July 2019, with a marginal improvement after September 2022. Regarding the terms of WWD, apart from personal names and proper nouns, the analysis noted distinctive features in expressions and specific issues. Notably, terms such as '罪责' [responsibility for a crime], '抹黑' [discredit], and '意识形态' [ideology] emerged as key predictors of WWD.

These findings pose several implications. First, the onset of WWD and the timing of its adjustment suggest that the primary factor underlying WWD is likely the strengthened intervention by the Party in the MFA. Specifically, the analysis indicates that WWD appears to have commenced approximately around the latter part of 2019. This timing coincides with the appointment of Qi Yu, the deputy head of the CCP's powerful organization department, as the Party Secretary of the MFA in January 2019, as well as the initiation of inspections by the Party's Central Discipline Inspection Committee. Although this study does not aim to establish causality among variables underlying WWD, the results imply that focusing solely on nationalism or geopolitical tension may be insufficient in explaining the assertive turn in diplomatic statements. Instead, direct political interventions, such as personnel changes and disciplinary actions, may have served as immediate catalysts for shifts in diplomatic tone.

⁵ For earlier applications, see, for example, Alastair Iain Johnston, 'How New and Assertive is China's New Assertiveness?' *International Security* 37(4), (2013), pp. 7-48. He conducts a keyword analysis to examine the alleged emergence of China's 'new assertiveness,' along with an in-depth qualitative examination.

⁶ Dai and Luqiu (n 4).

⁷ Brazys, Dukalskis, and Müller (n 4).

Second, while WWD manifested itself as an assertive reaction to specific issues, particularly against the U.S., it did not strongly advocate for particular national interests or related concepts. This study identifies terms of WWD and finds that words such as ‘领土’ [territory], ‘核心利益’ [core interests], and ‘人权’ [human rights] did not prominently represent WWD. Specific issues like Hong Kong, along with condemnatory expressions such as ‘罪责’ and ‘抹黑’, are more indicative of WWD terminology, while the term ‘国家主权’ [national sovereignty] weakly predict WWD. The analysis suggests that, while unique in vocabulary, WWD is generally closer to the discursive pattern observed around 2000 rather than around 2010, where the ‘new assertiveness’ theme proliferated regarding Chinese diplomacy.

2. Debating Wolf Warrior Diplomacy

2.1 China’s ‘New Assertiveness’ and Wolf Warrior Diplomacy

The rise of WWD has garnered significant attention due to Chinese diplomats’ ostensibly sudden adoption of harsh and confrontational language. However, observers argue that, despite its seemingly unique style and rhetoric, WWD is merely a recent manifestation of China’s diplomatic assertiveness, reflecting in part a fundamental transformation in China’s approach to international relations. Notably, prior to the rise of WWD, the term ‘new assertiveness’ gained wide acceptance among scholars and commentators around 2010, with some associating it with a radical break from China’s past foreign policy behaviors.⁸

Nevertheless, concerns have been raised that most accounts regarding China’s ‘new assertiveness’ lack a clear definition and indicators of diplomatic assertiveness and fail to provide systemic evidence in both actions and rhetoric that Chinese diplomacy deviated from previous periods.⁹ As a result, ‘the new assertiveness meme’ has been argued to underestimate persistent assertiveness in Chinese diplomacy and overestimate the amount of change. For instance, Johnston observes that there are numerous episodes indicating China’s pre-2010 assertiveness. A more systemic indicator, such as the official discourse of sovereignty, further suggests that Chinese assertiveness peaked around 2000 (after the embassy bombing in 1999), rather than in 2010.¹⁰

This study echoes these concerns and suggests a more cautious, empirical approach to evaluating and interpreting WWD. First, similar to ‘new assertiveness,’ WWD is a term that emerged and gained traction through foreign media, inspired by the title of a series of Chinese action films. This new label, as it turned out, ‘captured the intimidating and sometimes bewildering nature of Chinese diplomacy

⁸ Michael D. Swaine, ‘Perceptions of an Assertive China’, *China Leadership Monitor* 32, (2010), pp. 1-19; Andrew Scobell and Scott Harold, ‘An Assertive China?: Insights from Interviews’, *Asian Security*, 9(2), (2013), pp. 111-131; Aron Friedberg, A. (2014). ‘The Sources of Chinese Conduct: Explaining Beijing’s Assertiveness’, *Washington Quarterly* 37(4), (2014), pp. 133-150.

⁹ Johnston (n 5); Dingding Chen and Xiaoyu Pu, ‘Correspondence: Debating China’s Assertiveness’, *International Security* 38(3), (2013), pp. 176-180.

¹⁰ Johnston (n 5) 12-3.

as seen by the outside world.’¹¹ Given the term’s foreign origin, it is imperative to delineate the substance of WWD and contextualize its distinctiveness within the internal logic and evolving dynamics of Chinese diplomacy.

Second, unlike the ‘new assertiveness’ theme, WWD is less about state behaviors and more about rhetoric and language, particularly adopted by China’s diplomatic corps. More specifically, WWD has been used to highlight the collective, caustic reactions of the MFA, an organization that has allegedly been marginalized in China’s foreign policymaking in recent years.¹² The implications of the evolving organizational dynamics for foreign policy discourse and diplomatic tone, however, remain unexplored.

In short, the literature on China’s ‘new assertiveness’ suggests that understanding WWD should involve a careful assessment of its continuity and discontinuity in the long-term evolution of Chinese diplomatic assertiveness. Further, given that WWD manifested through diplomatic discourse, adopting analytical tools designed to unpack semantic characteristics would be especially useful. Finally, WWD was primarily executed by the MFA, raising the key issue of what transformations Xi Jinping has enacted to foreign policymaking system and how those changes have affected Chinese diplomats’ language.¹³

2.2 Competing explanations and methodology: Analyzing the rise (and decline) of WWD

This sub-section reviews existing studies on WWD, with a focus on their findings regarding the potential causes of WWD and the empirical strategies. Noticing a shift in issues and attitudes from those of the ‘new assertiveness,’ Duan’s study investigates three domestic sources of WWD – the individualist, institutional, and strategic motivations – as key drivers of WWD.¹⁴ While stressing that WWD has its roots in the changing institutional settings surrounding external propaganda apparatuses, it concludes that WWD has primarily been ‘driven by time-specific factors’ and ‘limited to several diplomats’ rhetoric and behavior on specific sensitive issues,’ questioning the sustainability of WWD-like practices.

Meanwhile, Yuan’s work employs case study methods to investigate the various dimensions and

¹¹ Martin (n 4) 3 (emphasis added).

¹² Jing Sun, ‘Growing Diplomacy, Retreating Diplomats: How the Chinese Foreign Ministry has been Marginalized in Foreign Policymaking’, *Journal of Contemporary China* 26(105), (2017), pp. 419-433; Lee Jones and Shahar Hameiri, *Fractured China: How State Transformation is Shaping China’s Rise* (Oxford University Press, 2021), pp. 34-37.

¹³ Suisheng Zhao, ‘Top-Level Design and Enlarged Diplomacy: Foreign and Security Policymaking in Xi Jinping’s China’, *Journal of Contemporary China* 32(139), (2023), pp. 73-86; Jacob Stokes, *Beyond China’s Black Box: Five Trends Shaping Beijing’s Foreign and Security Policy Decision-making under Xi Jinping* (Center for a New American Security, 2024).

¹⁴ Duan (n 4).

consequences of WWD.¹⁵ The three cases examined are the Twitter spat between Zhao Lijian and the U.S. State Department, the diplomatic conflict between China and Australia, and the confrontation between China and Sweden. While not explicitly discussing the relative weight of each explanation, the author notes multiple sources of WWD, such as changes in leadership, rising nationalism, and a perception of an increasingly hostile international environment. Sullivan and Wang also use case studies to explore the origin and dynamics of WWD.¹⁶ They argue that there is a synergistic interaction between MFA officials and popular nationalism that creates bottom-up incentives to adopt a WWD posture.¹⁷ This is distinct from simultaneous top-down pressures from the central leadership under Xi to appropriately represent China's 'confident rise.'¹⁸

Although these qualitative studies provide valuable insights into various factors driving WWD, their shortcomings are readily apparent. First, with a few exceptions like Duan's research, many studies lack sufficient sensitivity to the distinctiveness of WWD in comparison to China's 'new assertiveness,' or to a longer historical perspective.¹⁹ This explains their typical emphasis on long-term, structural factors such as nationalism or external environments, which makes it difficult to identify testable mechanisms responsible for the rise of WWD. Second, more fundamentally, these studies, similar to most journalistic accounts on WWD,²⁰ fail to provide systemic evidence to evaluate the relative significance of each factor, relying instead on episodic examples of some prominent 'wolf warrior' diplomats. Yet, as Duan suggests, it is plausible that 'most Chinese diplomats, unlike these wolf-warriors, remain conservative, taking an orthodox approach to their duties.'²¹

Attempting to deal with these shortcomings, some scholars have taken quantitative approaches to analyze WWD. For example, Dai and Luqiu's study applied supervised machine learning to textual data from MFA press conferences, demonstrating a sharp increase in hostile responses since 2018.²² Using a topic model, they also point out that the proportion of hostile sentences varies by topic, which indicates that not all topics are discussed in combative tone, even in the context of WWD. Alternatively, Brazys, Dukalskis, and Müller's work used Twitter data from January to October 2021 to track the

¹⁵ Yuan (n 4).

¹⁶ Sullivan and Wang (n 4).

¹⁷ Many scholars observe a strong link between popular/state nationalism and the emergence of WWD. For a discussion on how the party-state's efforts to win over popular nationalists have contributed to the rise of WWD, see Zhao Suisheng, *The Dragon Roar Back: Transformational Leaders and Dynamics of Chinese Foreign Policy* (Stanford University Press, 2023), pp. 172-3.

¹⁸ Similarly, Brugier argues that WWD is a foreign policy aimed at legitimizing the communist rule in the eyes of its own citizens, and thus is not relevant to Chinese foreign policy goals. Camille Brugier, "Wolf Warrior' Diplomacy: A New Policy to Legitimize the Chinese Communist Party", IRSEM Research Paper, (2021), pp. 1-13.

¹⁹ Duan (n 4).

²⁰ Chun Han Wong, *Party of One: The Rise of Xi Jinping and China's Superpower Future*. (Avid Reader Press, 2023).

²¹ Duan (n 4) 15.

²² Dai and Luqiu (n 4) 72.

discursive development of WWD.²³ Focusing on a collective study session of the Politburo held on May 31, 2021, where Xi Jinping reportedly commented on the need to foster a ‘trustworthy, lovable and respectable’ national image, the authors examined how the session affected China’s external communication. Specifically, they developed a measure of WWD rhetoric, and, using a difference-in-difference (DiD) research design, evaluated if a noticeable change in the tweets of diplomats occurred after the session. The results show that diplomatic tweets in OECD countries were slightly moderated in tone, but no major re-orientation was observed after the session.

Based on systemic evidence, these quantitative studies offer a nuanced understanding of WWD, particularly regarding when and how Chinese diplomats, both domestically and internationally, are likely to act aggressively in communicating China’s foreign policy agenda. Methodologically, by applying diverse analytical tools to textual data collected from multiple sources of diplomatic communication, these studies provide a more comprehensive picture of WWD’s operation on the ground. Substantively, a common finding from these studies is that the dynamics of WWD cannot be fully explained without considering President Xi Jinping’s own perspective on a new international order and China’s position within it. Crucially, these studies suggest that Xi’s approach to organizing and guiding China’s foreign policy corps to properly project his personal positions on global affairs is critically important to understanding the unfolding of WWD.

Despite highlighting critical yet previously neglected aspects of WWD, these quantitative studies reveal several issues related to the understanding and investigation of WWD. The first, substantive issue pertains to the timeline of WWD: when did WWD begin, and when did it undergo a change? While Brazys, Dukalskis, and Müller’s work provide some evidence for the tone-softening impact of the Politburo study session, their analysis remains uncertain about the timing of WWD’s overall decline as there has been several other political interventions before and after the session.²⁴ For this reason, a closer inspection of WWD’s timeline is essential, as it would help understand how Xi’s leadership has shaped the practice of China’s diplomacy. Dai and Luqiu’s study does connect the substance of Xi’s diplomatic thoughts to the rise of WWD, but notes that the leader’s signal was primarily conflicting.²⁵ This indicates a need for further exploration of the mechanisms through which Xi’s message translated into the diplomats’ actions and language. Identifying WWD’s timeline would provide information about these mechanisms.

The second issue is methodological. Before estimating the shift in diplomatic discourse and tone, Dai and Luqiu measure WWD by hand-coding a sample of their data based on the selection of ‘hostile’ or ‘combative’ documents, while Brazys, Dukalskis, and Müller’s work manually selects specific seeds words to measure the WWD index by LSS.²⁶ Although these empirical approaches are both

²³ Brazys, Dukalskis, and Müller (n 4).

²⁴ Brazys, Dukalskis, and Müller (n 4).

²⁵ Dai and Luqiu (n 4).

²⁶ Dai and Luqiu (n 4); Brazys, Dukalskis, and Müller (n 4).

established methods, these methods require substantial hand-codings or prior assumptions regarding the policy intervention. To address these issues, we conduct a sentimental analysis and change point analysis as a baseline, which are more straightforward, easy-to-replicate, and less dependent on human-coding and prior assumptions.

The third issue is empirical: what words, phrases, or concepts would signal and characterize WWD? These are crucial questions for assessing the significance of WWD in the evolution of China's diplomatic 'new assertiveness.' Dai and Luqiu's article shows that WWD manifested disproportionately in topics such as Xinjiang, Hong Kong, and the legitimacy of the Zero-COVID policy. However, these observations are qualitative in nature, as the topics are chosen through interpretations of frequently occurring words, leaving other potentially important keywords or themes unnoticed. This study conducts a text regression analysis to address this issue.

3. Data and Methods

3.1 Data

The study leverages textual data derived from press conferences conducted by spokespersons of the MFA from January 1997 to December 2023. By exploiting the structure of these press conferences, which include multiple question-and-answer (Q&A) sessions with reporters posing several questions, we extracted a total of 34,607 Q&As from a dataset comprising 6,892 press conference documents. Each Q&A serves as the unit of analysis for this study. The original data was sourced from a database provided by Oriprobe.²⁷

Figure 1 illustrates the data distribution, revealing a clear pattern. The number of observations is notably limited until the end of 2000, after which there is a substantial increase. It is imperative to acknowledge that the estimates for the period between January 1997 and December 2000 may involve relatively larger errors.

Notably, Figure 1 categorizes Q&As into those referring to OECD and non-OECD following the framework employed by Brazys, Dukalskis, and Müller.²⁸ The primary targets of WWD were developed countries, specifically, OECD member states. Zhao Lijian, one of the most prominent 'wolf warrior' diplomats, directed his criticisms primarily at the United States, Australia, and Sweden.²⁹ Additionally, according to various newspaper reports, WWD also targeted the Czech Republic, Canada, France, Japan, and the United Kingdom—all OECD members. Moreover, the OECD/Non-OECD classification provides a framework for distinguishing between China's diplomatic approach toward advanced nations from its approach toward other 'Global South' countries.

However, the OECD/Non-OECD classification has limitations in effectively capturing China's

²⁷ Oriprobe: <https://www.oriprobe.com/>

²⁸ Brazys, Dukalskis, and Müller (n 4).

²⁹ Yuan (n 4).

assertive diplomatic stance toward countries such as India, Fiji, and the Philippines. To verify the robustness of the analysis, Appendix Note 1 presents aggregation results based on MFA's regional classification, which are largely consistent with those obtained using the OECD/Non-OECD classification. It is worth noting that, even with the MFA's regional classification, the issue remains of both WWD-targeted and non-targeted countries being grouped within the same category. The OECD/Non-OECD classification was conducted through a keyword-based approach, which utilizes keywords associated with the names of OECD member countries and relevant terms.³⁰

(Insert Figure 1 here)

3.2 Methods

The analysis proceeds in three steps. The first step measures sentiment at the Q&A level, which assesses whether the tone is positive or negative. The second phase employs the change point analysis to pinpoint the specific period(s) during which structural changes become evident in the measured sentiment data. Finally, the third phase utilizes the textual regression analysis to identify the terms that characterize the period during which structural changes were observed.

The analysis utilizes sentiment scores as a baseline measurement of diplomatic tone. Sentiment analysis, a classic method in quantitative text analysis, involves assigning weights to positive and negative words within a given text. Based on the Augmented National Taiwan University Sentiment Dictionary,³¹ we calculated sentiment scores at the unit of analysis (Q&A), which are weighted means of the words matched to corresponding dictionary values. The validity of sentiment scores in capturing the changes in diplomatic tone can be evaluated against the LSS scores used by Brazys, Dukalskis, and Müller.³² In this study's calculations, a positive value of sentiment indicates a positive tone, while, in LSS, a positive value signifies an assertive tone. A negative correlation coefficient of -0.60 at the monthly level is obtained between the sentiment and LSS scores (Appendix Figure 3).

³⁰ When creating the OECD dummies, certain words related to the United States and Japan were included in addition to the names of OECD member countries: Austria, Belgium, Canada, Denmark, France, Federal Republic of Germany, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States, Japan, Finland, Australia, New Zealand, Mexico, Czech Republic, Hungary, South Korea, Poland, Slovakia, Chile, Slovenia, Estonia, Israel, Latvia, Lithuania, Colombia, Costa Rica, Japanese side (*rifang*), US side (*meifang*), Sino-Japanese, Sino-American, NATO, Washington, Tokyo, Diaoyu Islands, the US, and the UK.

³¹ Shi-Ming Wang and Lun-Wei Ku, 'ANTUSD: A large Chinese Sentiment Dictionary', In Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC'16), (2016), pp. 2697-2702.

³² This study uses sentiment scores mainly because the lexicon of the sentiment dictionary is more general in substance and broader in scope than topic-specific dictionaries such as the polarity words used in LSS to calculate scores. LSS sets a small number of seed words to weigh the words in the corpus. Kohei Watanabe, 'Latent semantic scaling: A Semisupervised Text Analysis Technique for New Domains and Languages', *Communication Methods and Measures* 15(2), (2021), pp. 81-102.

As a next step, we conduct change point analysis using the sentiment scores (and LSS scores for robustness check) to identify locations where structural changes in diplomatic tone occurred. Change point analysis is a method used to detect points in time where the statistical properties (e.g., mean, variance, correlation structure, or distribution) of a time series or sequence of data change abruptly.³³ We focus on the mean and variance to identify the timings of structural changes.

As mentioned earlier, Brazys, Dukalskis, and Müller focused on the Collective Study Session of the Politburo and employed a DiD method to estimate the effects of the Politburo meeting. However, there were other instances in which the Party leadership intervened in the MFA, through various institutional channels, potentially influencing the actions of diplomats beyond the Politburo session. Previous accounts indicate that there were at least five instances since the late 2010s where the Party Center allegedly intervened in the MFA:

- (A) Xi Jinping presided over the first session of the Central Foreign Affairs Commission on May 15, 2018³⁴;
- (B) Qi Yu, former Deputy Director of the Central Organization Department of the Party, was appointed as the Secretary of the Party Committee of the MFA on January 29, 2019³⁵;
- (C) The CCP Central Commission for Discipline Inspection launched inspections on MFA from September 11, 2019, to November 25, 2019³⁶;
- (D) The 30th Collective Study Session of the Politburo took place on May 31, 2021³⁷; and
- (E) Spokesperson Zhao Lijian was transferred to the position of Deputy Director of the Border and Maritime Affairs Bureau on January 9, 2023.³⁸

³³ Daniel Barry and J. A. Hartigan, 'A Bayesian Analysis for Change Point Problems', *Journal of the American Statistical Association* 88(421), (1993), pp. 309-319; Chandra Erdman and John W. Emerson, 'bcp: An R Package for Performing a Bayesian Analysis of Change Point Problems', *Journal of Statistical Software* 23, (2008), pp. 1-13.

³⁴ The Central Government of People's Republic of China, 'Xi Jinping Presides over First Meeting of Central Foreign Affairs Working Committee' (15 May 2018) <https://www.gov.cn/xinwen/2018-05/15/content_5291161.htm> accessed on January 17, 2024.

³⁵ *People's Daily Online*, 'Qi Yu, Vice Minister of the Organization Department of the Chinese People's Political Consultative Conference, was transferred to the post of Party Secretary of the Ministry of Foreign Affairs' (29 January 2019) <<http://politics.people.com.cn/n1/2019/0129/c1001-30597597.html>> accessed on January 17, 2024.

³⁶ The Ministry of Foreign Affairs, China, 'Notice of the Party Committee of the Ministry of Foreign Affairs of the People's Republic of China on the Progress of Rectification and Improvement of the Fourth Round of Inspection of the 19th Central Committee.' (5 November 2020) <https://www.mfa.gov.cn/zyxw/202011/t20201105_348632.shtml> accessed on January 17, 2024.

³⁷ The Central Government of People's Republic of China, 'Xi Jinping presides over the 30th collective study session of the Political Bureau of the Communist Party of China Central Committee and delivers a speech' (1 June 2021) <https://www.gov.cn/xinwen/2021-06/01/content_5614684.htm> accessed on January 17, 2024.

³⁸ *Reuters*, 'China 'wolf warrior' diplomatic spokesperson Zhao moves to new role' (9 January 2023) <www.reuters.com/world/china/china-wolf-warrior-diplomatic-spokesperson-zhao-moves-new-role-2023-01-09/> accessed on January 17, 2024.

Given the frequent occurrence of policy interventions involving the MFA appear to have occurred frequently, the DiD research design faces challenges due to uncertainty about the presence of a specific intervention or treatment assumed to produce causal effects.³⁹ To address these challenges, this study focuses on identifying the points of rhetorical shifts in a data-driven manner, which does not require prior assumption about a specific intervention. The significance of each intervention and the relationships among them will be examined in the Discussion section.

The third and final step involves text regression to identify the terms of WWD. Text regression is a method that uses labeled textual data to predict continuous numeric values.⁴⁰ Typically, text as data is represented as wide and sparse matrices with a large number of tokens (variables). One common technique for analyzing such high-dimensional data is the Least Absolute Shrinkage and Selection Operator (LASSO), a regression with a penalty term that forces some coefficients to zero, thereby selecting only the most significant variables.⁴¹ In this study's context, a LASSO model, by assigning a zero coefficient to tokens that do not predict the labeled text, can specify the most important predictor words. To the authors' knowledge, text regression is a more intuitive and effective tool for identifying keywords or phrases relevant to a specific outcome (sentiment scores in this case), compared to other estimation methods such as topic modeling.

In LASSO, a higher lambda value removes more variables, while a lower value allows more variables to remain. To determine the optimal lambda, we conduct a cross-validation of the training data to identify the value with the smallest mean square error. Subsequently, a model is established using the selected lambdas on the training data, and its performance is evaluated using the test data. The training data constitute 80% of the total dataset with the remaining 20% designated for testing. Appendix Note 2 reports the details. To highlight a small number of words representing the WWD, we focused on models with lambda ranging from 0.0455 to 0.0113 with a smaller number of non-zero coefficients (i.e., Model IDs 20–50 in Appendix Table 2).

4. Results

4.1 *Sentiment Analysis*

Figure 2 depicts the average monthly sentiment scores, showing that the sentiment towards non-

³⁹ Assuming that the diplomatic tone toward OECD is the treatment group at the five timings, the result indicates that the effect is observed in all five DiD specifications (estimation results are available upon a request).

⁴⁰ Matthew Gentzkow, Bryan Kelly, and Matt Taddy, 'Text as data', *Journal of Economic Literature* 57(3), (2019), pp. 552-555.

⁴¹ Robert Tibshirani, 'Regression Shrinkage and Selection Via the Lasso' *Journal of the Royal Statistical Society Series B: Statistical Methodology* 58(1), (1996), pp. 267-288; Jerome H. Friedman, Trevor Hastie, and Robert Tibshirani, 'Regularization Paths for Generalized Linear Models Via Coordinate descent.' *Journal of Statistical Software* 33(1), (2010), 1.

OECD countries remains generally stable at approximately 0.1, whereas the sentiment towards OECD shows a decline around 2000 and after 2019. Notably, during the past 27 years, this is the second time that the diplomatic tone towards developed countries has significantly turned negative, with the first instance occurring around 1999 to 2000.⁴² The clear divergence in diplomatic tone towards developed and developing countries around 2020 aligns with qualitative observations that, alongside the onset of WWD, there has been an emphasis on friendly messages towards developing countries through, for example, the concept of the ‘Community of Shared Future for Mankind’ (人类命运共同体). Under normal circumstances, there is not a major difference between the diplomatic narratives directed toward developing countries and those directed toward developed countries. However, during periods when significant events occur, China’s diplomatic narrative tends to diverge markedly between its approaches to developing and developed countries. For further details, Appendix Table 1 presents the highest and lowest sentiment scores at the Q&A level.

(Insert Figure 2 here)

To ensure the robustness of the results, this study also estimated the WWD index following the methodology outlined in the work of Brazys, Dukalskis, and Müller, where a positive value indicates a more radical and aggressive tone. Appendix Figure 1 displays the polarity scores at the word level. These word-level polarity scores were then used to calculate the WWD index for the Q&A level, with the results presented in Appendix Figure 2. The analysis revealed a relatively strong negative correlation of -0.60 on a monthly basis, as shown in Appendix Figure 3. It is important to note that the correlation coefficient is negative because a positive sentiment score reflects a positive expression, whereas a positive LSS score is indicative of an aggressive expression.

4.2 Change Point Analysis

The change point analysis identified the occurrence of structural change using the monthly average sentiment scores toward OECD countries (Figure 3). The analysis reveals that the onset of WWD was in July 2019, marking a negative change in sentiment. Notably, another change occurs with a further decline in the diplomatic tone after January 2020. If July 2019 is considered the starting point of WWD, then it suggests that WWD began after the appointment of Qi Yu, the former deputy director of the Central Organization Department, to the Party Secretary of the MFA (January 2019) and intensified after the inspection by the Central Discipline Inspection Committee (September 2019–

⁴² Using data from January 1999 to December 2001, we constructed two series representing OECD and non-OECD samples. We then conducted both Welch’s t-test and the Mann-Whitney U test to assess differences between the two groups. The results indicated that the difference in means between OECD and non-OECD was statistically significant, confirming the presence of a meaningful disparity between the groups.

January 2020). The adjustment towards a positive tone occurred in September 2022, more than a year after the Politburo study session (May 31, 2021) and shortly before the personnel transfer of spokesperson Zhao Lijian (January 2023). For a robustness check, we performed change point analysis using the WWD score estimated by LSS, where a positive value indicates a more assertive tone. Figure 4 shows that changes in diplomatic tone occur in a very similar pattern, particularly during the period of the Xi administration.

(Insert Figure 3 here)

(Insert Figure 4 here)

4.3 Text Regression

The preceding analysis reveals that the tone towards OECD countries has turned negative after July 2019, particularly from January 2020 to September 2022. Given that positive content was also addressed during this period, we focus on the Q&As with sentiment scores lower than the average. We defined ‘WWD text’ as a Q&A that (1) refers to OECD countries from January 2020 to September 2022 and (2) has a sentiment score lower than the baseline average (0.101). We conducted a text regression analysis on these WWD texts.

Table 1 presents the tokens with nonzero coefficients obtained from the estimations using different lambda parameters.⁴³ Positive coefficients indicate that a token is predictive of text associated with WWD, while negative coefficients suggest that the token is unlikely to appear in WWD texts. Tokens deemed not useful in predicting WWD texts were assigned a coefficient of 0.

Models 1 and 2, where only a few words were extracted, indicate that WWD was primarily a reactionary assertion against the United States. This is evident from the appearance of such terms as ‘美方’ [US] and ‘美方’ [US side]. Models 3 and 4 capture a greater number of tokens, allowing for the exploration of more diverse aspects of WWD. Model 4 finds that the term with the highest coefficient is ‘罪责’ [responsibility for a crime]. Other high-ranking terms include the names of U.S.

⁴³ To highlight a small number of words representing the WWD, we focused on models with lambda ranging from 0.0455 to 0.0113, resulting in a smaller number of non-zero coefficients (i.e., Model IDs 20–50 in Appendix Table 2). The cross-validation results in Appendix Figure 4 show that the lowest mean square error is 0.0049. However, the number of variables with non-zero coefficients exceeds 900, which is excessively large given our research question. Therefore, in the main text, we present models with lambda values ranging from 0.0455 to 0.0113, corresponding to a smaller number of nonzero coefficients (namely, Model IDs 20–50 in Appendix Table 2). This adjustment was made to align with the specific research query and to avoid including an excessive number of variables, ensuring a more targeted and interpretable outcome. Appendix Table 2 reports the number of nonzero coefficients and other performance indicators using the test data. In summary, Model ID 50 achieves 0.92 accuracy as well as an F1 score of 0.358 with a relatively small number of nonzero coefficients. In the main text, we present Model IDs 20–50 in the discussion.

politicians such as ‘拜登’ [Biden] (rank 24) and ‘佩洛西’ [Pelosi] (rank 18). Unsurprisingly, words related to COVID-19 like ‘疫情’ [pandemic] (rank 36), ‘病毒’ [virus] (rank 42), and ‘新冠’ [novel corona(virus)] (rank 81) appear frequently after January 2020. Although Model 3 identified a limited set of assertive words, the major findings are consistent.

(Insert Table 1 here)

Moreover, Model 4 produces tokens that may have appeared in other periods (in contrast to ‘病毒’ [virus]). Prominent examples are the terms expressing condemnation, such as ‘罪责’ [responsibility for a crime] (rank 1), ‘抹黑’ [discredit] (rank 8), ‘错误’ [incorrect] (rank 12), and ‘虚假’ [false] (rank 19). There are also words related to specific issues, such as ‘涉港’ [relating to Hong Kong]’ (rank 13).⁴⁴ These terms highlight major policy issues during the period of WWD. Meanwhile, among the terms associated with China’s traditional diplomatic interests and norms, ‘国家主权’ [national sovereignty] (rank 59) appears on the list, but only with a weak coefficient.

Figure 5 illustrates the longitudinal trend of some of the most prominent terms. Understandably, terms like ‘罪责’ and ‘抹黑’ peaked in frequency during the period of WWD. ‘涉港’ also frequently appeared during the WWD period. Figure 5 also shows that ‘意识形态’ [ideology] characterizes the WWD texts in Model 2, 3, and 4. This is particularly notable since this term does not appear in the previous waves of diplomatic assertiveness, especially around the year of 2000. The findings suggest that while both sentiment and LSS-induced WWD scores show similar waves around 2000 and 2020, as indicated in Figure 2 and Appendix Figure 2, the discursive substance may be qualitatively different.

Meanwhile, Figure 6 reveals that words associated with prominent diplomatic interests and concepts, such as core interests, territory, and human rights, show peaks in other periods and are scarcely characteristic of the WWD era. Although ‘国家主权’ carries a positive coefficient, it is relatively small at 0.012 compared with 0.1721 for ‘罪责’ and 0.0567 for ‘涉港’ in Model 4.

(Insert Figure 5 here)

(Insert Figure 6 here)

5. Discussion

This section discusses major findings and their implications. First, the analysis finds that the shift in diplomatic tone associated with WWD appears to have begun around July 2019, with a further

⁴⁴ A term related to Taiwan (e.g., ‘涉台’ [pertaining to Taiwan]) also appears among the top 100 tokens, but it is relatively less predictive of WWD (rank 41) compared to terms associated with Hong Kong or Ideology.

intensification after January 2020. As noted above, the timing follows the appointment of Qi Yu as the Party Secretary of MFA in January 2019 and inspection activities from September 2019 to January 2020. This observation not only aligns with previous studies' claims that institutional and organizational factors played a significant role in the rise of WWD, but it also qualifies them by specifying the mechanisms through which the Party leadership reinforced its control over MFA's internal policymaking and external behaviors.⁴⁵

Specifically, the results suggest that more direct forms of political intervention, such as personnel changes or disciplinary measures, may have delivered tangible changes in diplomatic tone. The appointment of Qi Yu, a 'total outsider' with no prior experience in foreign affairs, as Party Secretary of MFA merits particular attention. This unprecedented move not only reflects the Party leadership's enduring concerns over ideological cohesion within the diplomatic corps⁴⁶ but also suggests Xi's intent to reinforce his personal control over policy implementation, thereby more actively projecting his vision for the international order and shaping the global discourse on China.⁴⁷ Of course, Xi is not alone in leveraging personnel measures to control over foreign affairs; Hu Jintao took similar actions in his second term by appointing Dai Bingguo, from the Party's international department, as the MFA's party chief. However, as someone 'parachuted in from the Party's personnel wing,' Qi Yu's clear focus on personnel matters underscores Xi's intentions for the MFA, sending a strong message regarding expected alignment and loyalty within the diplomatic corps.⁴⁸

Perhaps even more significant than the personnel decision itself are the disciplinary measures Qi Yu implemented following his appointment as the MFA's party chief. Immediately after assuming the role, Qi organized a series of internal 'study sessions' and convened an expanded Party Committee meeting, emphasizing that 'the diplomatic front adheres strictly to the Party Center both in thought and action.'⁴⁹ This was followed by a ministry-level education campaign in June, during which Qi called for 'addressing challenges in major power diplomacy by demonstrating new spirit and new conduct.'⁵⁰ More notably, Qi's efforts were supported by discipline inspections conducted by the

⁴⁵ Duan (n 4).

⁴⁶ Sun (n 12) 423-4.

⁴⁷ Guoguang Wu, 'The Emergence of the Central Office of Foreign Affairs: From Leadership Politics to "Great Diplomacy"' *China Leadership Monitor* 69, (2021), Issue 69.

⁴⁸ Jingtao Shi and Jun Mai, 'Diplomatic Novice Picked up for Top Communist Party Job at China's Foreign Ministry amid Deteriorating Relations with US' *The South China Morning Post*, (30 January 2019) <<https://www.scmp.com/news/china/diplomacy/article/2184367/diplomatic-novice-picked-top-communicist-party-job-chinas-foreign>>accessed on October 20, 2024.

⁴⁹ The Ministry of Foreign Affairs, China, 'The Party Committee Held an Expanded Meeting to Communicate and Study the Spirit of National Two Sessions and Discuss and Plan the Implementation of Related Tasks' (18 March 2023) <https://www.mfa.gov.cn/wjlb_673085/zygy_673101/qy/xgxw_673105/201903/t20190318_10418039.shtml>accessed on October 20, 2024.

⁵⁰ The Ministry of Foreign Affairs, China, 'The Foreign Ministry Held a Mobilization Meeting for

Central Inspection Team, which commenced in September 2019. These inspection teams are deployed to oversee provincial and central units, assessing their policy alignment with central directives and regulations.⁵¹ Concluding their activities in January 2020, the inspection team assigned the MFA a ‘failing grade,’ citing deficiencies in internalizing and executing Xi Jinping Thought on Diplomacy as well as key central directives.⁵² In response to this stringent feedback, Qi Yu led a series of initiatives, instituting new systems and rules.

Together, the overarching message of these multi-staged, ‘campaign-style’ enforcement measures was unmistakable: the diplomatic corps was expected to demonstrate not ‘passive servility’ but an ‘active response’ to the demands from the top. The timing of these interventions closely aligns with the findings on the rise of WWD, which remain robust under the alternative measurement using LSS. More broadly, our findings underscore the importance of reincorporating organizational dynamics into the analysis of China’s foreign policy behaviors – a point that has been consistently emphasized in the literature but is even more relevant in the Xi era.⁵³ In a similar vein, the analysis reveals that perceived public pressure from popular nationalism, or even discursive pressure from the leadership, does not necessarily translate into actual policy implementation.

Meanwhile, the analysis shows that September 2022 marked another point of change in diplomatic tone, this time toward moderation. Previous studies suggest that the Politburo study session in May 2021 may have contributed to a softening in tone toward OECD countries, yet no significant change occurred in overall discursive pattern.⁵⁴ These findings are partially consistent with this insight but emphasize that a structural change occurred approximately one year after the Politburo session. It is possible that the mixed content of the session did not directly influence the tone of MFA spokespersons. At the same time, although WWD underwent an adjustment after September 2022, it has not reverted to the tone level towards OECD countries seen prior to the initiation of WWD. In this sense, the language of MFA spokespersons continues to retain characteristics of WWD, a pattern persisting until the end of 2023.

Second, concerning the semantic distinctiveness of WWD, this study demonstrates that particular expressions and issues characterized WWD. In particular, terms such as ‘committed a crime,’ ‘blacken,’

“Staying True to Our Original Aspiration and Keeping Our Mission Firmly in Mind” Education Campaign’ (4 June 2019) <

https://www.mfa.gov.cn/wjb_673085/zygy_673101/qv/xgxw_673105/201906/t20190605_10418046.shtml>accessed on November 1, 2024.

⁵¹ Zhengyang Jiang, ‘Understanding Bureaucratic Involution through Weber’s Bureaucracy: China Central Inspection Teams in Practice’ *Modern China*, 48(6), (2022), pp. 12-31; Chen Xiang and Terry Van Gevelt, ‘Central Inspection Teams and the Enforcement of Environmental Regulations in China’ *Environmental Science and Policy*, 112, (2020), pp. 431-439.

⁵² The Ministry of Foreign Affairs, China, ‘Central Fifth Inspection Team Reports Inspection Findings to the Party Committee of the Ministry of Foreign Affairs’ (10 January 2020) <https://www.mfa.gov.cn/web/zyxw/202001/t20200110_347766.shtml>accessed on October 20, 2024.

⁵³ Jones and Hameiri. (n 12).

⁵⁴ Brazys, Dukalskis, and Müller. (n 4).

and ‘pertaining to Hong Kong’ were identified as key predictors of WWD. Although substantively not novel, the analysis provides empirical evidence that WWD can reasonably be characterized as harsh and reactive language towards the United States. For example, constructing a sentence from the words in Model 1 of Table 1 might yield: ‘政客’ [politicians] in ‘America’ are attempting to ‘抹黑’ [discredit] our country negatively.’ Indeed, spokesperson Zhao Lijian made the following statement at a press conference on July 7, 2022:

‘The relevant United States politicians (政客) have consistently played up the Chinese threat and discredited (抹黑) and attacked China. The remarks made by this intelligence official have fully exposed their deep-rooted cold war zero-sum mindset (冷战思维) and ideological prejudice (意识形态偏见).’⁵⁵

Relatedly, another key term of WWD that merits attention is ‘ideology.’ It frequently appears in statements like ‘do not view China through a Cold War mindset and ideological prejudice.’ A typical example is the response to Michael Pompeo’s speech in July 2020 in which the Secretary stated that ‘America can no longer ignore the fundamental political and ideological differences’ between the two countries.⁵⁶ In response, MFA spokesperson Wang Wenbin retorted that ‘We urge Pompeo to abandon his outdated Cold War mindset and ideological prejudice, and to view China and China-United States relations correctly.’⁵⁷

In short, we contend that WWD’s distinctiveness as a form of diplomatic communication lies more in the use of exceptionally hostile, condemnatory language than in clear articulation or active promotion of a specific foreign policy agenda or concept. However, the emergence of new terms and themes, such as those related to ideology or Hong Kong, clearly suggests that Chinese diplomats have found themselves in a qualitatively different semantic environment and have actively adapted to it. More broadly, the rhetorical patterns in China’s diplomacy during the WWD period may reflect what an observer describes as ‘contradictory status-signaling behaviors’ in which Beijing sometimes acts aggressively to signal great power status, while at other times it emphasizes its low status as a

⁵⁵ The Ministry of Foreign Affairs, China, ‘Foreign Ministry Spokesperson Zhao Lijian presides over a regular press conference on July 7, 2022’ (1 June 2021) <https://www.mfa.gov.cn/fyrbt_673021/202207/t20220707_10716815.shtml> accessed on January 17, 2024.

⁵⁶ The U.S. Department of State, ‘Secretary Michael R. Pompeo Remarks at the Richard Nixon Presidential Library and Museum: ‘Communist China and the Free World’s Future’ (23 July 2020) <https://2017-2021-translations.state.gov/2020/07/23/secretary-michael-r-pompeo-remarks-at-the-richard-nixon-presidential-library-and-museum-communist-china-and-the-free-worlds-future> accessed on June 3, 2024].

⁵⁷ The Ministry of Foreign Affairs, China, ‘Foreign Ministry Spokesman Wang Wenbin Presides Over Regular Press Conference on July 29, 2020’ (29 July 2020) <https://www.fmprc.gov.cn/web/fyrbt_673021/jzhs1_673025/202007/t20200729_5419175.shtml> accessed on June 3, 2024.

vulnerable developing country.⁵⁸

6. Conclusion

This study aims to trace the emergence and decline of WWD and to identify its defining terms through text analysis methods that are relatively straightforward and less dependent on human coding and prior assumptions. The analysis indicates that a significant negative shift in diplomatic tone, characteristic of WWD, occurred in July 2019, followed by a slight moderation beginning in September 2022. These findings suggest that the primary factor driving WWD is likely the Party leadership's increasingly direct interventions in MFA affairs. While this study does not seek to establish causality among the variables underlying WWD, the results suggest that explanations focusing solely on nationalism or geopolitical tension are insufficient for fully comprehending the recent assertive shift in official diplomatic statements. The identification of distinctive words through text regression demonstrates that, while WWD exhibited strong opposition on certain topics, it did not necessarily articulate or prioritize specific diplomatic interests or concepts.

The findings suggest several important avenues for future research. First, the persistence of WWD beyond 2023 presents an intriguing subject for further exploration. Although the overall rhetoric of leading MFA officials appears to be gradually softening, there are indications that the underlying factors contributing to the rise of WWD may continue to shape the practices and language of Chinese diplomats.⁵⁹ The WWD-specific terminology identified in this study provides a valuable basis for evaluating the legacy and ongoing impact of WWD. If, for instance, Chinese diplomats were to clearly avoid the use of the vocabulary depicted in Figure 5, it might suggest a shift in policy.

Second, while WWD predominantly represents a rhetorical shift, there are potential areas for further research to elucidate the relationship between these rhetorical changes and actual foreign policy behaviors. For instance, given China's recent increased use of economic tools to achieve foreign policy goals, an intriguing question arises regarding the extent to which WWD, or broader changes in diplomatic tone and rhetoric, explains the specific aspects (e.g., targets, means, duration, or expected

⁵⁸ Xiaoyu Pu, *Rebranding China: Contested Status Signaling in the Changing Global Order*. (Stanford University Press, 2019). For a discussion on contradictory meanings contained in the concept of 'the Community of Shared Future for Mankind' promoted by the Xi administration, see Andrew J. Nathan and Boshu Zhang, "'A Shared Future for Mankind': Rhetoric and Reality in Chinese Foreign Policy under Xi Jinping", *Journal of Contemporary China* 31(133), (2022), pp. 57-71. However, there is no clear agreement over the source of contradiction in Xi's diplomatic rhetoric. Nathan and Zhang attributes the opacity to the use of rhetoric as a cover for self-interested strategic motives, while Yan Xuotong sees it as a reflection of China's 'dual identity'. Xuotong Yan, 'Becoming Strong: The New Chinese Foreign Policy', *Foreign Affairs* 10 (4), (2021), pp. 40-47.

⁵⁹ For example, Hua Chunying, who served as a spokesperson during the WWD period, was promoted to Vice Minister of the MFA. Kawala Xie, 'China's outspoken foreign ministry press department chief Hua Chunying promoted to vice-minister', (*South China Morning Post*, 27 May 2024), <https://www.scmp.com/news/china/diplomacy/article/3264229/outspoken-head-chinas-foreign-ministry-press-corps-hua-chunying-promoted-deputy-foreign-minister>. Accessed 7 July 2024.

effects) of economic coercion.⁶⁰ Finally, by further exploiting the features of the press conference dataset, it would also be possible to explore how differences in the target audiences, particularly domestic or foreign, could affect the tone and rhetoric in diplomatic statements.

Overall, by drawing parallels between WWD and the assertiveness observed around 2000 in terms of sentiment and vocabulary, this study provides a nuanced perspective on both continuity and discontinuity in Chinese diplomatic discourse in the past two decades. Future research could further explore the discursive characteristics of recent diplomatic discourses while also aiming to understand the broader trends and shifts in Chinese diplomacy from a more long-term perspective.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Data Availability Statement

The data required to verify the reproducibility of the results in Figure 1, 2, 3, and 4 are available at <https://github.com/aseiito/wwd>.

⁶⁰ Darren Lim and Victor Ferguson, 'Informal Economic Sanctions: the Political Economy of Chinese Coercion during the THAAD Dispute', *Review of International Political Economy* 29-5, (2022), pp. 1525-1548; Christina Lai, 'More Than Carrots and Sticks: Economic Statecraft and Coercion in China-Taiwan relations from 2000 to 2019', *Politics* 42-3, (2022), pp. 410-425.

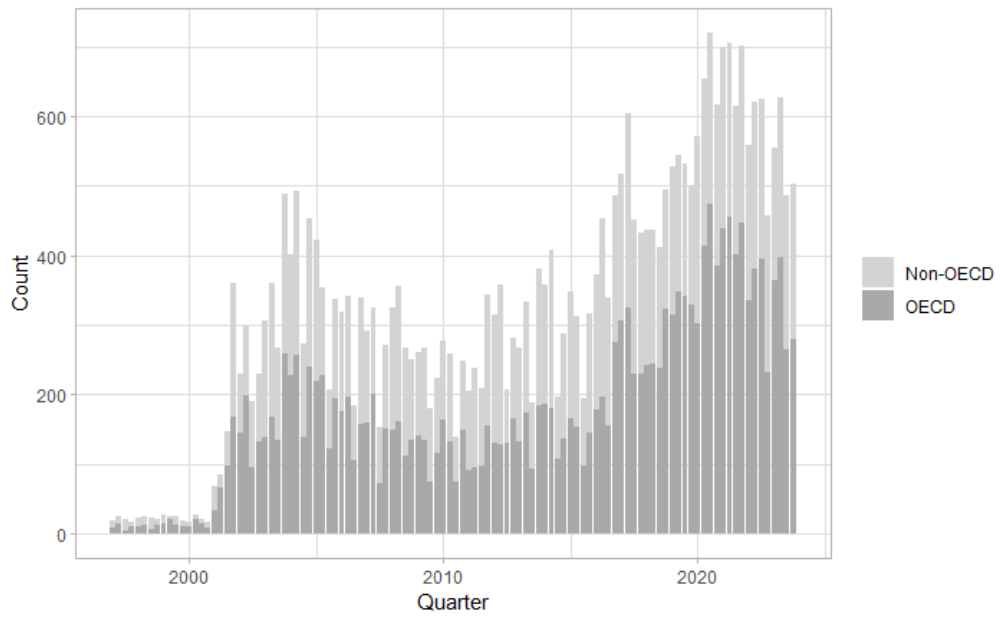
Table 1. Tokens predicting wolf warrior diplomacy Q&A (top 100 tokens)

Model 1: Lambda=0.0455			Model 2: Lambda=0.0286			Model 3: Lambda=0.0179			Model 4: Lambda=0.0113		
Word	Coefficient		Word	Coefficient		Word	Coefficient		Word	Coefficient	
1 抹黑	0.0499	1 政客	0.0898	1 政客	0.1095	1 罪责	0.1721	51 严重	0.0172		
2 政客	0.0417	2 抹黑	0.0765	2 操弄	0.0928	2 政客	0.1157	52 质疑	0.0166		
3 美国	0.0301	3 操弄	0.0712	3 抹黑	0.0790	3 操弄	0.1012	53 评论	0.0164		
4 美方	0.0194	4 打压	0.0576	4 打压	0.0752	4 立陶宛	0.0899	54 破坏	0.0160		
5 打压	0.0164	5 错误	0.0331	5 立陶宛	0.0625	5 打压	0.0849	55 强迫	0.0157		
6 所谓	0.0127	6 美国	0.0310	6 错误	0.0527	6 提起公诉	0.0814	56 敦促	0.0136		
7 操弄	0.0082	7 所谓	0.0252	7 炮制	0.0471	7 普莱斯	0.0730	57 敦促	0.0131		
8 疫情	0.0009	8 美方	0.0228	8 意识形态	0.0371	8 抹黑	0.0704	58 损害	0.0126		
9		9 炮制	0.0191	9 美国	0.0307	9 佩	0.0671	59 国家主权	0.0120		
10		10 严重	0.0179	10 虚假	0.0294	10 东扩	0.0654	60 中国台湾	0.0105		
11		11 立陶宛	0.0160	11 罪责	0.0268	11 体育运动	0.0612	61 研究所	0.0102		
12		12 疫情	0.0148	12 搞	0.0268	12 错误	0.0567	62 系统性	0.0096		
13		13 搞	0.0117	13 澳大利亚	0.0260	13 涉港	0.0567	63 他国	0.0089		
14		14 意识形态	0.0099	14 所谓	0.0241	14 炮制	0.0524	64 基本准则	0.0087		
15		15 病毒	0.0057	15 美方	0.0235	15 沦为	0.0477	65 澳	0.0081		
16		16 澳大利亚	0.0052	16 严重	0.0228	16 意识形态	0.0470	66 希望	-0.0077		
17		17 评论	0.0050	17 疫情	0.0222	17 国安法	0.0466	67 罪行	0.0076		
18		18 虚假	0.0042	18 涉港	0.0190	18 佩洛西	0.0459	68 挟洋	0.0075		
19		19 敦促	0.0021	19 病毒	0.0157	19 虚假	0.0422	69 乌克兰	0.0074		
20		20 新冠	0.0005	20 行径	0.0157	20 印度报业托	0.0404	70 疆	0.0070		
21		21		21 虚伪	0.0152	21 虚伪	0.0403	71 制裁	0.0070		
22		22		22 敦促	0.0149	22 反制	0.0383	72 美	0.0067		
23		23		23 评论	0.0136	23 迈克尔	0.0380	73 说事	0.0065		
24		24		24 违背	0.0131	24 拜登	0.0362	74 例证	0.0062		
25		25		25 国安法	0.0123	25 多点	0.0357	75 彭斯	-0.0056		
26		26		26 英国	0.0113	26 澳大利亚	0.0356	76 正当	0.0056		
27		27		27 加拿大	0.0113	27 暴露	0.0336	77 披露	0.0052		
28		28		28 破坏	0.0109	28 牌	0.0327	78 得逞	0.0050		
29		29		29 暴露	0.0108	29 蓬	0.0322	79 稳定	-0.0046		
30		30		30 冷战	0.0098	30 炫耀	0.0307	80 武拒统	0.0046		
31		31		31 损害	0.0086	31 种族歧视	0.0305	81 新冠	0.0043		
32		32		32 反制	0.0077	32 搞	0.0305	82 未	0.0042		
33		33		33 福岛	0.0048	33 恶意	0.0296	83 北约	0.0042		
34		34		34 新冠	0.0044	34 美国	0.0282	84 不要	0.0039		
35		35		35 佩	0.0022	35 福岛	0.0272	85 双方	-0.0039		
36		36		36 基本准则	0.0018	36 疫情	0.0272	86 不容	0.0038		
37		37		37 双方	-0.0012	37 外部	0.0250	87 侵犯	0.0033		
38		38		38 外部	0.0008	38 美军	0.0248	88 肺炎	0.0032		
39		39		39 对此	0.0008	39 冷战	0.0247	89 始作俑者	0.0031		
40		40		40 希望	-0.0005	40 违背	0.0242	90 推	0.0025		
41		41		41 国家主权	0.0005	41 涉台	0.0239	91 称	0.0021		
42		42		42		42 病毒	0.0225	92 禁止	0.0020		
43		43		43		43 美方	0.0223	93 重要	-0.0020		
44		44		44		44 撤销	0.0222	94 原则	0.0020		
45		45		45		45 政治事件	0.0218	95 有何	0.0019		
46		46		46		46 加拿大	0.0217	96 举行	-0.0018		
47		47		47		47 英国	0.0206	97 势力	0.0012		
48		48		48		48 行径	0.0205	98 公开审理	0.0011		
49		49		49		49 所谓	0.0174	99 早已	0.0009		
50		50		50		50 方及	0.0173	100 官方	0.0006		

Note: Models 1–4 represent Model IDs 20, 30, 40, and 50, respectively, in Appendix Table 2.

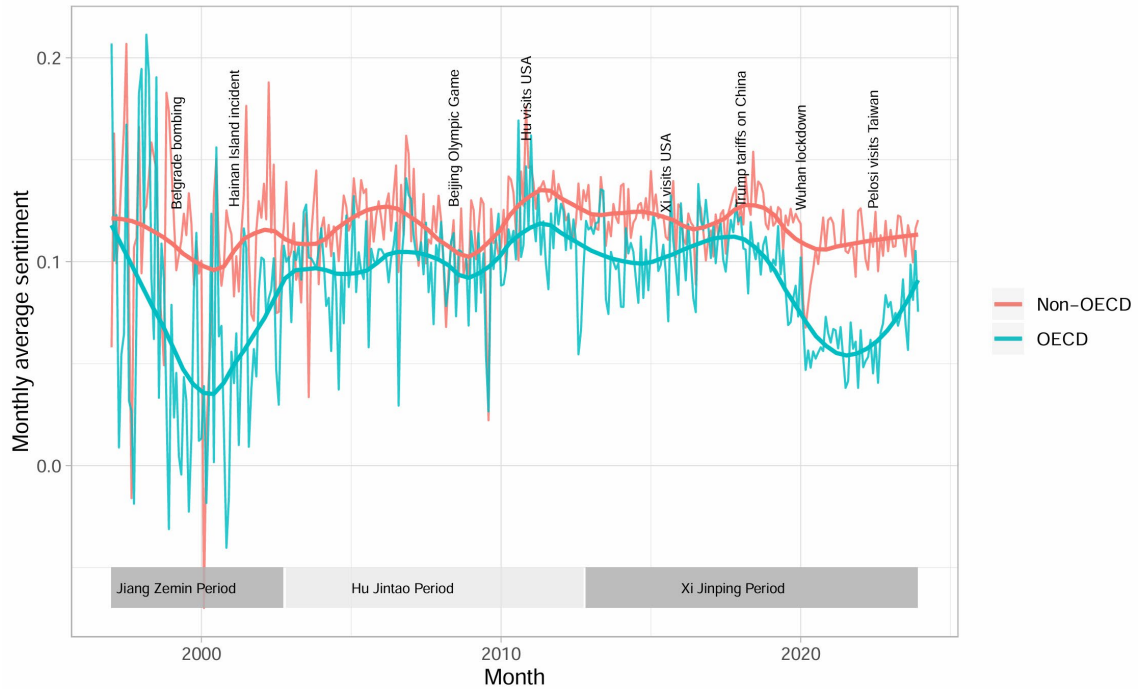
Source: Authors' calculations.

Figure 1. Q &A-level count by quarter (1997Q1–2023Q4)



Source: Authors' calculations.

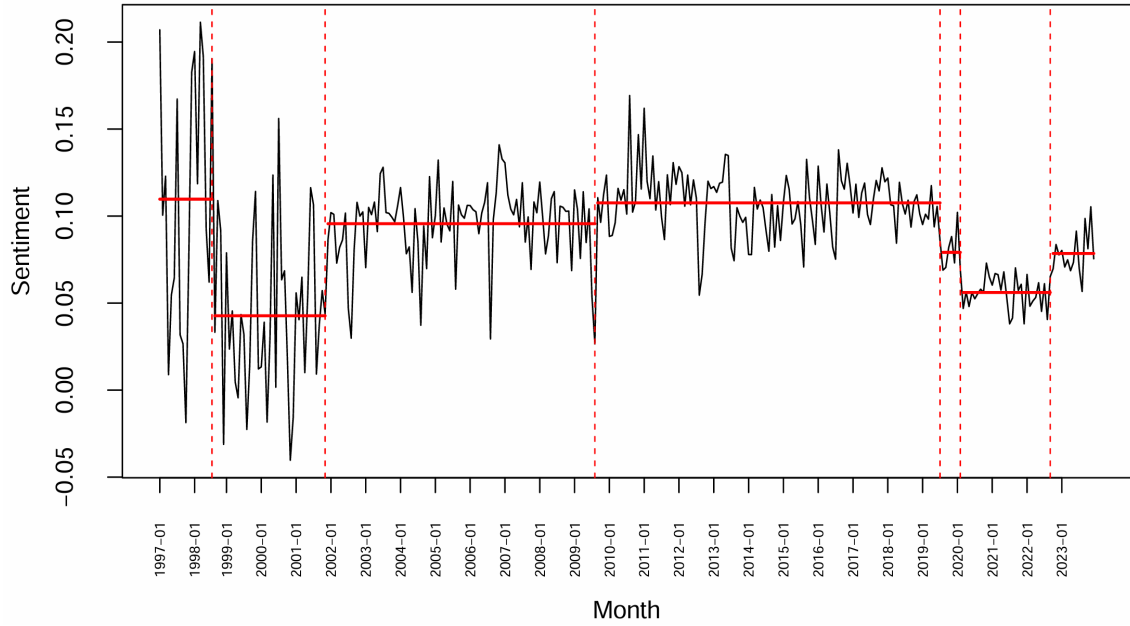
Figure 2. Q&A level sentiment (January 1997–December 2023)



Note: The curve denotes the locally estimated scatterplot smoothing (loess) curve.

Source: Authors' calculations.

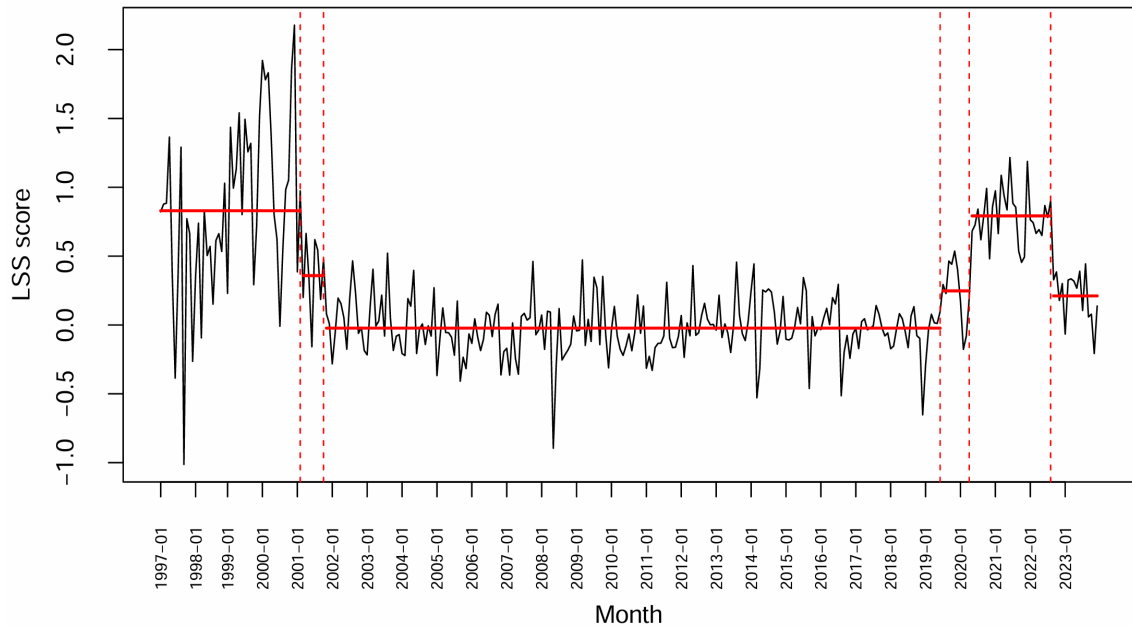
Figure 3. Result of the change point analysis (sentiment score of OECD-related Q&A)



Note: The change points in sentiment towards OECD were July 1998, November 2001, August 2009, July 2019, February 2020, and September 2022.

Source: Authors' calculations.

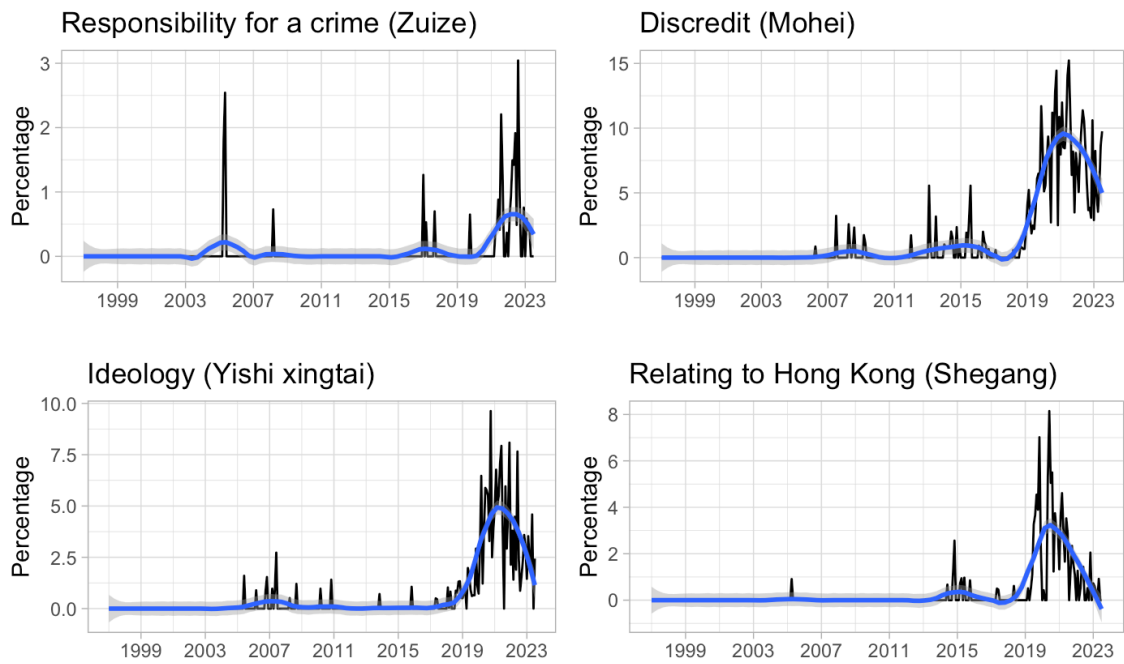
Figure 4. Result of change point analysis (WWD index of OECD-related Q&A by LSS)



Note: The change points in the LSS towards OECD were February 2001, October 2001, June 2019, April 2020, and August 2022. See Appendix Note 1 for LSS estimation.

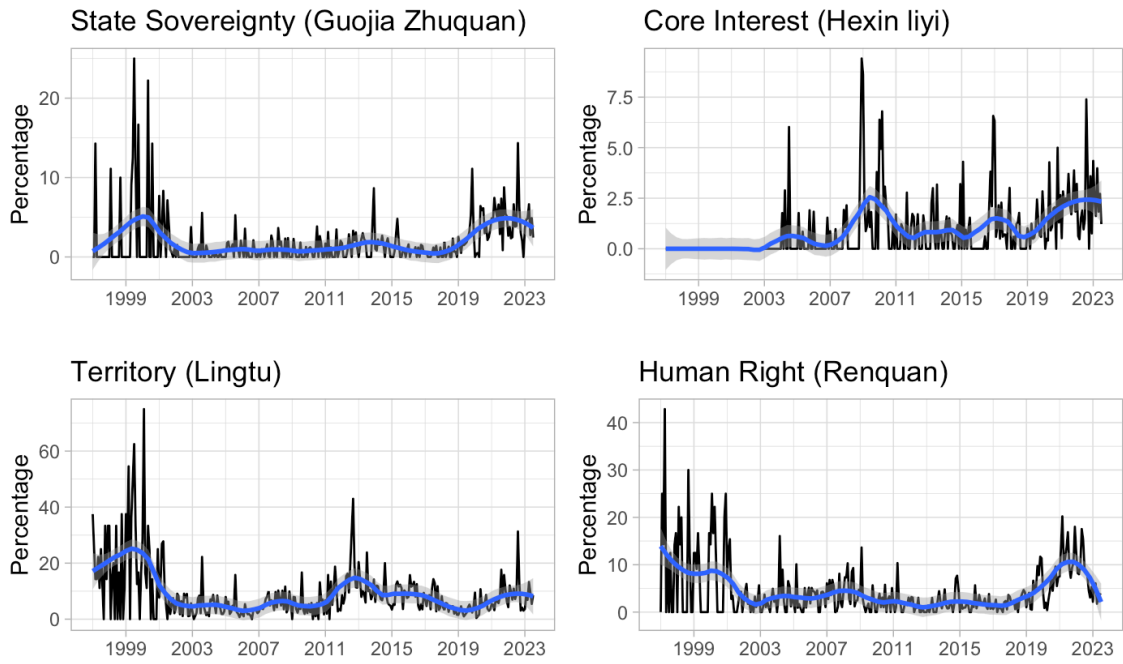
Source: Authors' calculations.

Figure 5. Expression- and issue-related keywords (Q&A level)



Source: Authors' calculations.

Figure 6. Concept-related keywords (Q&A level)



Source: Authors' calculations.

Appendix

(Insert Appendix Table 1 here)

(Insert Appendix Figure 1 here)

(Insert Appendix Figure 2 here)

(Insert Appendix Figure 3 here)

Appendix Note 1. Alternative classification of country and region

In the baseline analysis of this paper, we used the OECD/Non-OECD classification. Additionally, we report the results using alternative regional classifications obtained from the MFA's website (hereafter referred to as the MFA classification). We primarily categorized regions based on the MFA classification, with minor adjustments to treat the USA and Japan, which have relatively large sample sizes, as individual categories. In total, we aggregated data into eight country/region categories with the following sample sizes: Asia excluding Japan (13,795 cases), Japan (3,898 cases), Africa (2,770 cases), Europe (5,658 cases), North America excluding the USA (1,508 cases), USA (10,487 cases), South America (929 cases), and Oceania (1,374 cases).

In aggregating these samples, we assigned categories based on whether a country's name belonging to that category appeared at the Q&A level. Q&As referencing multiple regions were included in each relevant category, allowing for overlap. It should be noted that the sample sizes for North America excluding the USA, South America, and Oceania are around 1,000, which may introduce significant bias. In contrast, for the OECD/Non-OECD classification used in the baseline estimates, we ensured that each category had a sample size of over 15,000.

The sentiment analysis results based on the MFA classification are shown in Appendix Figure 4. In the mid-2010s, the tone toward Japan became significantly negative, indicating the impact of the territorial dispute over the Senkaku (Diaoyu). During the 2010s, sentiment toward South American countries was particularly positive. Since 2019, there has been a sharp deterioration, especially in sentiment toward the USA and North America excluding the USA. Specifically, sentiment toward Canada has become notably negative.

For the period from January 2020 to December 2022, when a more assertive diplomatic tone was prominent, the mean and median sentiment values by region are as follows: Asia excluding Japan (mean=0.089, median=0.099), Japan (mean=0.070, median=0.069), Africa (mean=0.089, median=0.102), Europe (mean=0.069, median=0.071), North America excluding the USA (mean=0.051, median=0.052), USA (mean=0.047, median=0.048), South America (mean=0.078,

median=0.085), and Oceania (mean=0.075, median=0.076). Overall, sentiment toward the USA is the most negative, followed by North America excluding the USA and Europe.

For clarity, the density distribution of the USA and Africa is presented in Appendix Figure 5. These results are qualitatively consistent with those obtained using the OECD/Non-OECD classification in the baseline analysis.

(Insert Appendix Figure 4 here)

(Insert Appendix Figure 5 here)

Another issue is whether the tone varies significantly across different spokespersons. Additionally, Appendix Figure 6 shows individual-level sentiment by spokesperson. As the results indicate, the differences between individuals are not particularly pronounced, and in particular, during the WWD period, negative responses were not limited to a specific spokesperson.

(Insert Appendix Figure 6 here)

Appendix Note 2. Cross-validation of lasso estimation

In LASSO estimation, the number of variables with nonzero coefficients varies according to the normalization parameter, lambda. A higher lambda value removes more variables, while a lower value retains more. To determine the optimal lambda, we conduct a cross-validation on the training data to identify the value that results in the smallest mean square error. Subsequently, a model is constructed using the selected lambdas on the training data, and its performance is evaluated using the test data. The training data constitute 80% of the total dataset, with the remaining 20% designated for testing.

To highlight a small number of words representing the WWD, we focused on models with lambda ranging from 0.0455 to 0.0113, resulting in a smaller number of non-zero coefficients (i.e., Model IDs 20–50 in Appendix Table 2). The cross-validation results in Appendix Figure 7 show that the lowest mean square error is 0.0049. However, the number of variables with non-zero coefficients exceeds 900, which is excessively large given our research question. Therefore, in the main text, we present models with lambda values ranging from 0.0455 to 0.0113, corresponding to a smaller number of nonzero coefficients (namely, Model IDs 20–50 in Appendix Table 2). This adjustment was made to align with the specific research query and to avoid including an excessive number of variables, ensuring a more targeted and interpretable outcome. Appendix Table 2 reports the number of nonzero coefficients and other performance indicators using the test data. In summary, Model ID 50 achieves 0.92 accuracy as well as an F1 score of 0.358 with a relatively small number of nonzero coefficients. In the main text, we present Model IDs 20–50 in the discussion.

(Insert Appendix Figure 7 here)

(Insert Appendix Table 2 here)

Appendix Table 1. Highest and lowest sentiment Q&A

(A) Top sentiment Q&A			
Rank	content	sentiment	date
1	请问斯里兰卡国防部长何时访华？具体日程是什么？你对斯里兰卡的和平进程有何评论？答：关于斯里兰卡国防部长访华的具体问题，我需要了解一下。作为斯里兰卡友好邻邦，我们衷心希望斯里兰卡能保持和平与稳定，这对本地区的和平与稳定也是有利的。	0.482	2002/6/11
2	中方对美国和日本拟于日起在美加利福尼亚州举行夺岛联合军演有何看法？答：我们希望有关方面以本地区的和平稳定为重，多做有利于增进政治安全互信、维护地区和平与稳定的事。	0.439	2013/6/4
3	越南两艘军舰正在菲律宾港口访问。中方对此有何评论？答：维护南海地区和平稳定是大家的共同愿望，同时也需要各方共同努力。我们希望各方都能多做增进互信、有利于促进地区和平稳定的事情。	0.434	2014/11/25
4	据报道，中方海监船今天进入钓鱼岛海里海域。中方对此有何评论？答：，中国海监船在中国钓鱼岛领海进行例行维权巡航，这是中国公务船在钓鱼岛海域行使管辖权的正常公务活动。	0.403	2012/10/25
5	《华尔街日报》援引美国官员报道称，中国和古巴正就在一座岛上新建联合军事训练设施进行谈判。报道称谈判已进入后期。外交部对此报道有何回应？毛宁：我不了解你提到的情况。希望有关方面把精力多用在有利于增进互信和地区和平稳定发展的事情上。	0.389	2023/6/20
6	据报道，最近中方潜艇首访马来西亚，这表明东南亚的实力对比正朝着对中方有利的方向转变。你对此有何评论？答：我不了解有关情况。不过中国和马来西亚是友好邻国，双方在各领域保持着正常、友好的双边交往。	0.383	2017/1/9
7	阿富汗举行了总统选举，你对此有何评论？答：阿富汗总统选举是阿富汗和平进程的重要环节，我们注意到此次选举总体上得以顺利进行。我们希望并相信在阿富汗人民的共同努力下，阿富汗的持久和平与稳定将最终得以实现。	0.380	2004/10/12
8	俄罗斯总统普京今天开始对日本进行访问。你对此有何评论？答：俄罗斯和日本都是中国的邻国，也都是亚太地区的重要国家。从中国的原则立场出发，我们乐见俄日在相互尊重、平等相待的基础上发展正常的友好合作关系，这种关系应有助于促进地区的和平稳定。	0.377	2016/12/15

9	美国要建立非洲联合司令部，有评论称此举有针对中国之意。你对此有何评论？答：我们注意到有关报道。维护和促进非洲的长期和平与稳定是该地区各国人民的共同愿望。中国人民和非洲人民有着深厚的传统友谊。中国和非洲国家间的友好合作与交流有利于促进非洲的和平、稳定与发展，也受到广大非洲国家和人民的欢迎和支持。我们希望各国多做促进非洲和平、稳定与发展的事情。	0.376	2007/2/8
10	尼泊尔有关方面签署了《全面和平协议》，请问中方对此有何评论？答：作为尼泊尔的邻国，中国希望尼泊尔保持和平与稳定。中国政府对尼泊尔有关各方日前签署《全面和平协议》表示欢迎。我们真诚希望尼泊尔有关各方继续推进和平进程，造福于本国人民，并为本地区的和平、稳定与发展作出贡献。	0.372	2006/11/23
(B) Bottom sentiment Q&A			
Rank	content	sentiment	date
1	德国一周刊昨日载文称北京至少有人因非典型肺炎死亡，多数是在军医院。你是否会否认这一数字？答：关于中国有关医疗部门在救治非典型肺炎病人方面的一些技术性问题，我这里并不掌握，但是中国卫生部于昨天发布了最新疫情。截止到，全国非典型肺炎共发病人数，死亡人数。其中广东发病人数，死亡人数；山西发病人数，死亡人数；北京发病人数，死亡人数；四川发病人数，死亡人数；湖南发病人数，死亡人数；上海发病人数，无人死亡；广西发病人数，死亡人数。据我从卫生部了解的有关情况，卫生部将每日向世界卫生组织报告疫情，并将每月逢、逢日向公众通报最新疫情。中国公布的情况是准确的，负责任的，一些无端的猜测是有害的。	-0.290	2003/4/8
2	你刚才提到，英国在香港问题上的有关做法违背国际法，能否具体解释一下违反了哪条国际法？汪文斌：一段时间以来，英方在香港国安法等问题上的错误行径，是对中国内政的粗暴干涉，违反了国际关系的基本准则和国际法原则。我们敦促英方纠正错误，停止干涉中国内政的错误行径，停止干涉香港事务。	-0.268	2020/7/20
3	我一直在问这个问题，那就是你能否提供在拉萨以及甘肃和青海其他藏区暴力事件中的死亡人数，包括无辜平民、警方及暴徒的死亡人数？答：我现在无法完全回答你的问题。目前，我只有与拉萨暴力事件有关的一些统计数字。这里面有被砍死、烧死的无辜群众，受伤的群众，其中重伤人，公安干警、武警官兵伤亡人，其中轻伤人，重伤人，牺牲人。追	-0.241	2008/3/27

4	据报道，中国海监飞机赴钓鱼岛领空巡航时日方派出军机。中方对此有何评论？答：中国外交部已就日方出动军机侵犯钓鱼岛中国领空提出严正交涉和抗议，敦促日方重视中方严正立场，停止一切侵犯和损害中国领土主权的行为。	-0.240	2012/12/14
5	孔泉今天在这里说，美国国内总有少数人死抱冷战思维不放，颠倒黑白，无端指责中国，企图破坏中美关系改善和发展。这些人违背中美两国人民的利益，逆历史潮流而动，其政治图谋是不会得逞的。	-0.235	2002/2/21
6	在新疆打击东突恐怖组织行动中被捕的名嫌犯是否已经被起诉？中方是否抓住了逃犯？是否担心这些逃犯已经越境到邻国？答：关于被逮捕的恐怖分子嫌犯，有关方面将会依法对他们进行处理。关于还在逃的恐怖嫌犯情况，请你向公安部门询问。	-0.232	2007/1/16
7	据报道，最近有中国公民在吉尔吉斯斯坦遭袭击受伤，请问这是否是专门针对中国公民的袭击？答：据我所知，他们是在自己所经营的餐馆或商店被抢劫的时候遭到的袭击。目前还没有迹象表明这些袭击是专门针对中国公民的。	-0.228	2005/3/29
8	据报道，日，巴西圣保罗州北部沿海地区暴雨引发洪水和山体滑坡，已致人死亡，至少人失踪。中方是否将向巴方表示慰问？汪文斌：中方注意到巴西圣保罗州发生暴雨灾害并造成人员伤亡的消息。我们对遇难者表示哀悼，向遇难者和失踪者家属以及灾区人民表示慰问。中方祝愿伤者早日康复，灾区人民早日战胜困难，重建家园。	-0.228	2023/2/21
9	关于在华外企的问题，美国太阳能工业协会以新疆侵犯人权为由呼吁企业将供应链移出新疆。你对此有何评论？赵立坚：中方一贯反对将经贸合作政治化。这些公司如果不愿意在中国做生意，不愿意在新疆做生意，是它们自己的损失。	-0.226	2020/10/23
10	据报道，当地时间，萨尔瓦多首都萨尔瓦多库斯卡特兰体育场在举办足球比赛期间，发生球迷踩踏事故，导致约人受伤，至少人死亡。有无中国公民伤亡？毛宁：中方谨对事故遇难者表示哀悼，对遇难者家属和受伤人员表示慰问。经中国驻萨尔瓦多使馆初步核实，目前没有中国公民伤亡的消息。	-0.226	2023/5/22

Note: In the text, numbers and some vocabularies have been dropped for cleaning purposes.

Source: Authors' data.

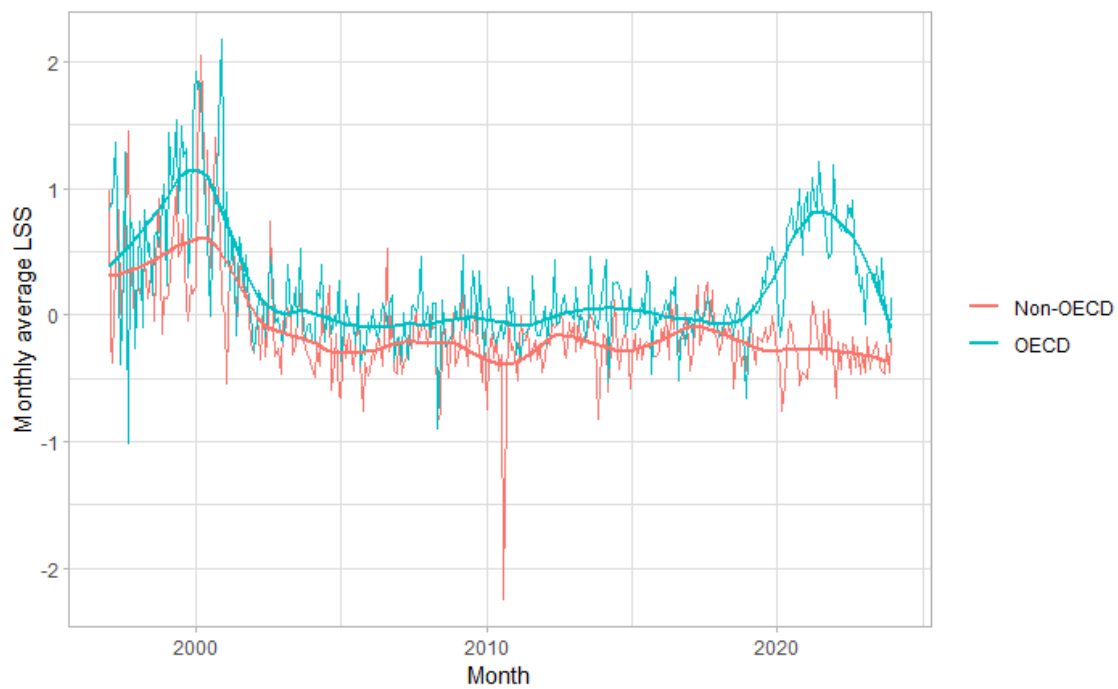
Appendix Table 2. Different lambda values and text results

Model ID	Number of nonzero coefficients	Percent deviance explained	Lambda	Accuracy	F1 score	Area under the curve
10	2	9.02	0.0724	0.903	0.014	0.769
20	8	17.05	0.0455	0.907	0.104	0.830
30	20	24.83	0.0286	0.912	0.208	0.880
40	41	30.64	0.0179	0.915	0.282	0.902
50	108	36.49	0.0113	0.920	0.358	0.919
60	294	43.18	0.0071	0.924	0.423	0.931
70	1,136	54.74	0.0044	0.927	0.470	0.935
80	2,254	67.77	0.0028	0.927	0.500	0.932
90	3,487	76.87	0.0018	0.925	0.512	0.925
100	5,321	83.2	0.0011	0.923	0.514	0.914

Note: Accuracy, F1 score, and AUC are calculated using the test data (separated from the training data). Accuracy represents the proportion of correctly predicted samples among the total samples, which provides an overall measure of model performance. F1 score is a metric for binary classification that balances precision and recall. Furthermore, it is the harmonic mean of precision and recall, which provides a single value that captures the trade-off between the two metrics. AUC measures the area under the receiver operating characteristic curve, which assesses the ability of a binary classification model to distinguish between classes. A high AUC value indicates better overall performance, while 0.5 suggests random prediction.

Source: Authors' calculations.

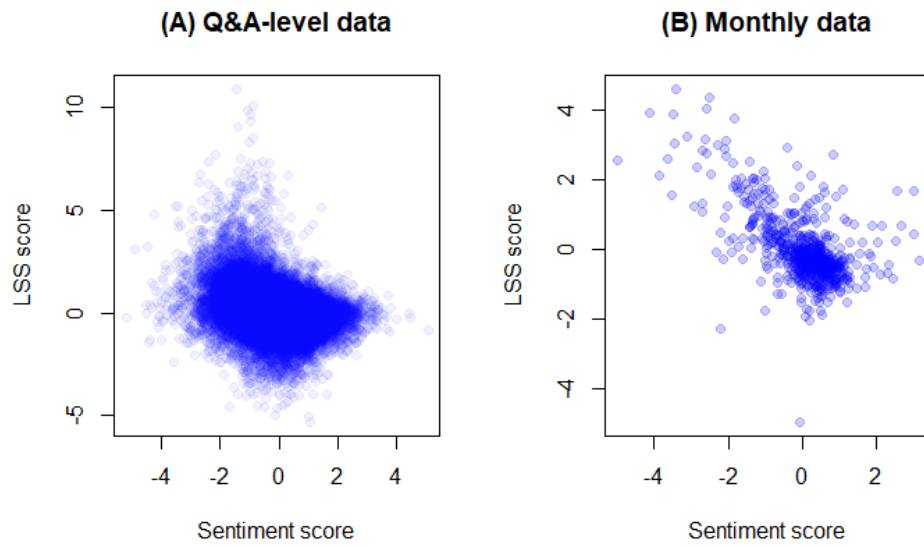
Appendix Figure 2. Estimated WWD index using LSS



Note: The curve denotes the locally estimated scatterplot smoothing (loess) curve.

Source: Authors' calculations.

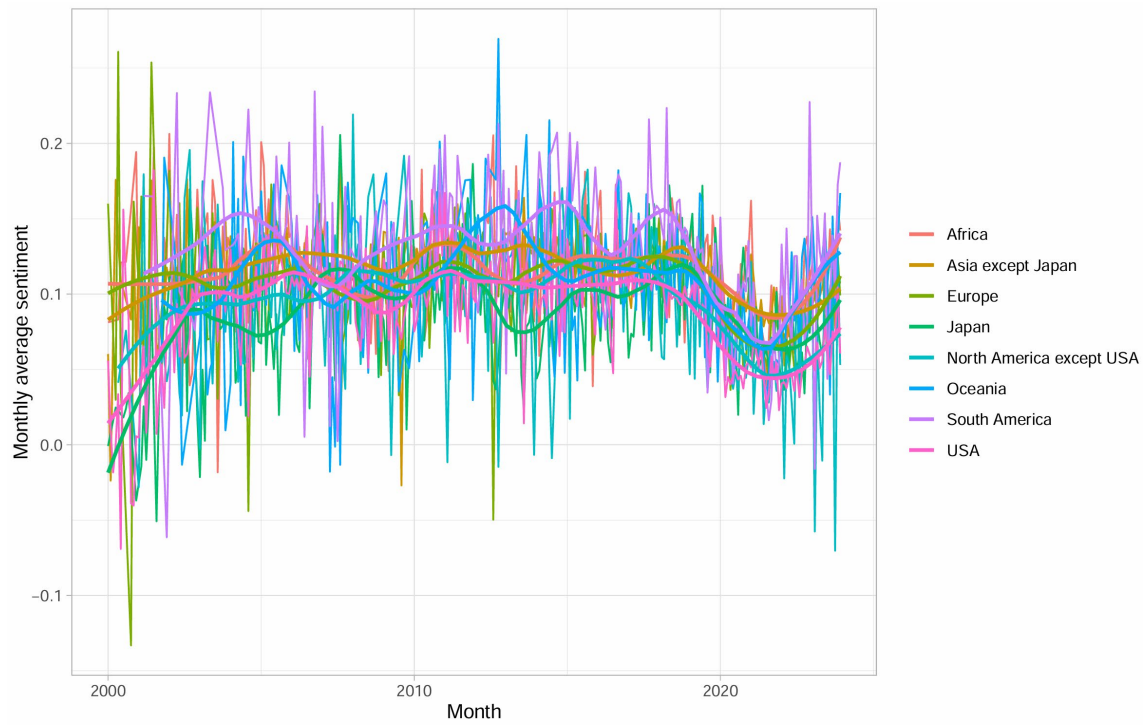
Appendix Figure 3. Correlation between sentiment and LSS scores



Note: Correlation coefficients are -0.33 for and -0.60 for panels (A) and (B), respectively.

Source: Authors' calculations.

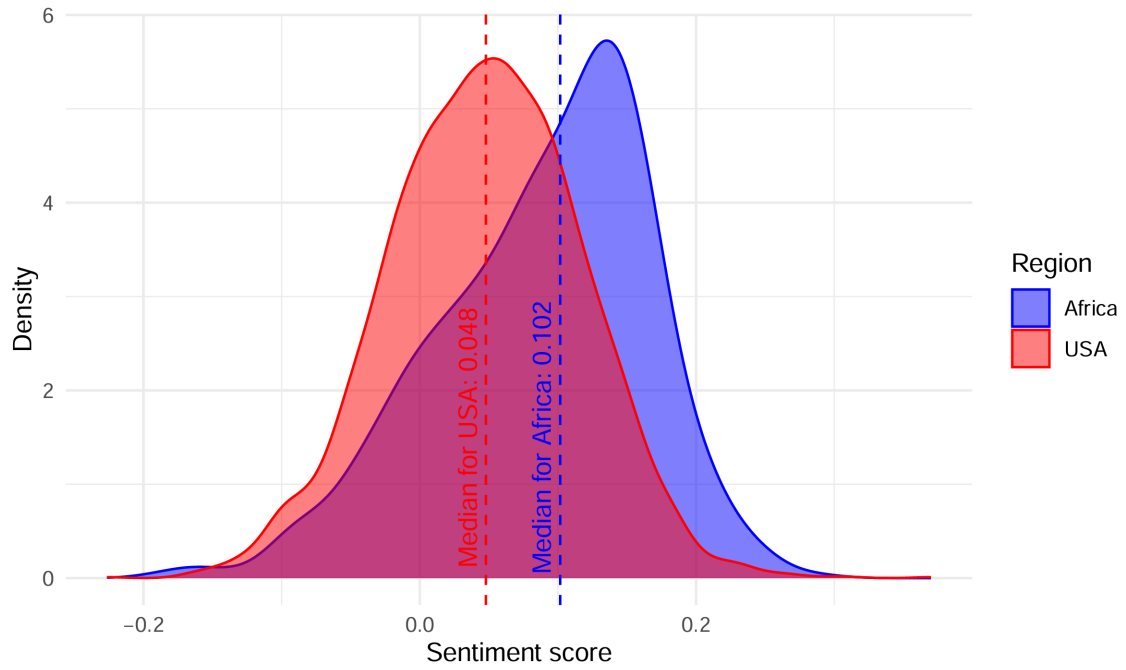
Appendix Figure 4. Alternative regional classification



Note: The regional classification is based on the MOF's system, but we treated Japan and the USA as independent categories. For the MOF's category, see the MOF's website (https://www.mfa.gov.cn/web/gjhdq_676201/gj_676203/yz_676205/) [Accessed on October 24, 2024]. The curve denotes the locally estimated scatterplot smoothing (loess) curve.

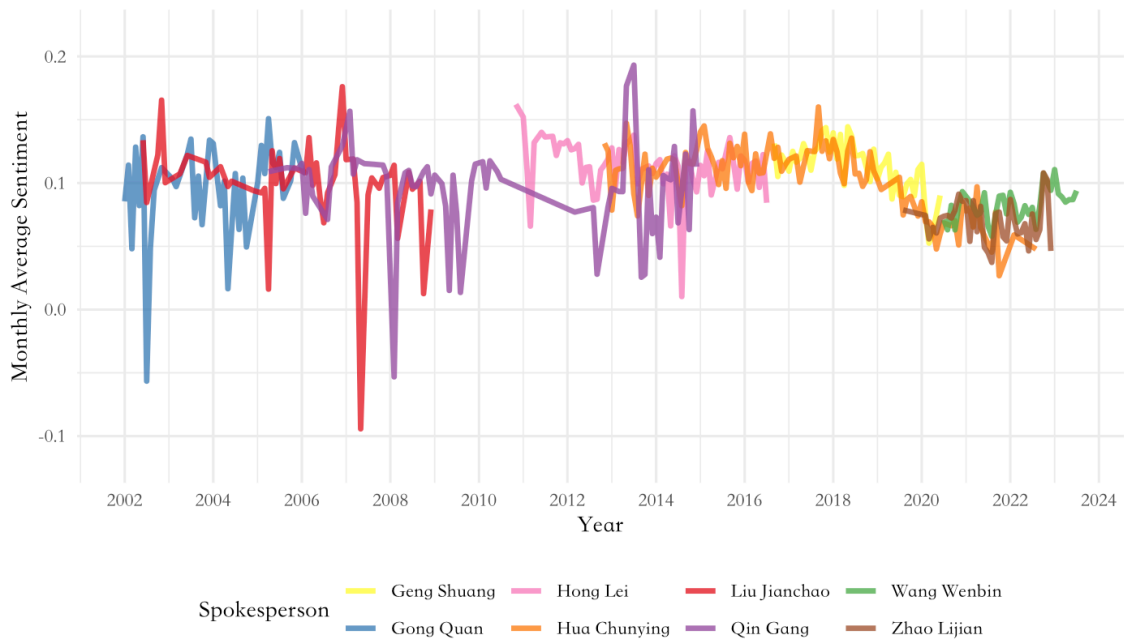
Source: Authors' calculations.

Appendix Figure 5. Distribution of USA and Africa (from January 2020 to December 2022)



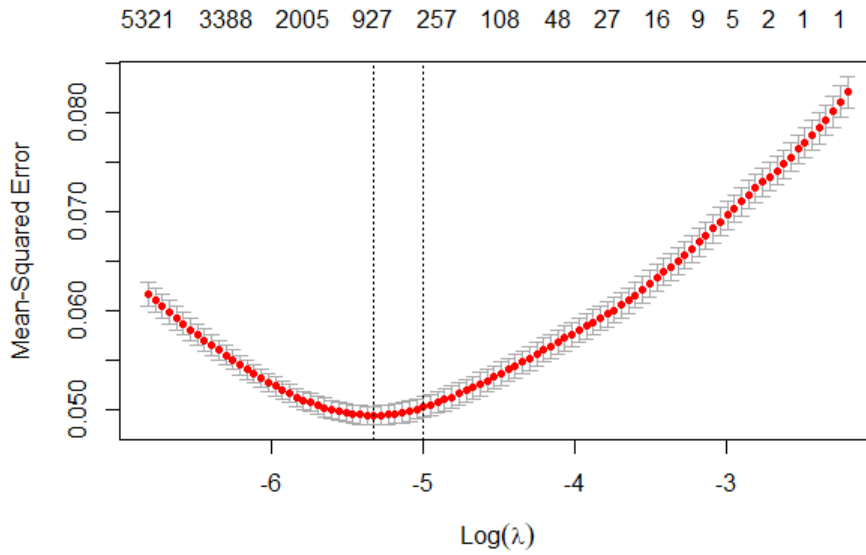
Source: Authors' calculations.

Appendix Figure 6. Breaking down into individual spokespersons



Note: Only spokespersons with more than 15,000 records are displayed

Appendix Figure 7. Cross-validation result



Note: The upper x-axis displays the number of nonzero variables. The value of λ that gives the minimum mean cross-validated error is 0.0049, and the most regularized model, such that the cross-validated error is within one standard error of the minimum, is 0.0068.

Source: Authors' calculations.