The Echoes of Muted Political Speech in Financial Speech*

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ABSTRACT

We study whether restrictions on political speech distort financial speech by exploiting the introduction of the National Security Law (NSL) in Hong Kong. After the NSL's enactment, local sell-side equity analysts covering the same firms as foreign analysts exhibit systematic self-censorship: when firm-specific bad news arrives, they issue more optimistic earnings forecasts, write in less precise language, and respond more slowly to earnings announcements. This pattern is more pronounced for central state-owned enterprises, as negative opinions on their poor performance may be deemed "unpatriotic." Markets discount these rosier reports, indicating that investors partially anticipate and price in this informational distortion.

Keywords: National Security Law in Hong Kong, Self-censorship, Analyst forecasts, Legal uncertainty, Political speech

JEL Classification: D81, G15, G24, K38

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I. INTRODUCTION

"*Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers*."

Article 19, Universal Declaration of Human Rights, United Nations, 1948[1]

In a 2024 ranking of regions, Denmark was ranked as the country with the highest freedom of expression, whereas North Korea was ranked last.[2] These rankings change annually because some regions liberalize, while others regress. For example, in India, where an emergency was declared in June 1975, political speech was severely curtailed for two years under the guise of national security. In Taiwan, it was in 1992 that freedom of political speech was guaranteed. In South Korea, it was in 1987 that constitutional democracy arrived.

Freedom of speech is not absolute anywhere.[3] Speech that harms national security is never allowed.[4] However, courts are often skeptical of a government trying to prevent criticism of its own policies under the guise of national security. Nevertheless, as many of these cases show, the lines can be blurred.[5] These lines are arguably more blurred in Hong Kong, which did not have a rich history of case law on this subject when "The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region" – the National Security Law (NSL) – was introduced at 11 pm local time on June 30, 2020. The law criminalizes any act of secession, subversion, terrorism, or collusion with foreign

[1] This right was one of 30 rights proclaimed by the United Nations General Assembly in Paris on 10 December 1948 (General Assembly resolution 217 A). It has been translated into over 500 languages. Retrieved from: https://www.un.org/en/about-us/universal-declaration-of-human-rights.

[2] "Data Page: Freedom of Expression and Alternative Sources of Information index," part of the following publication: Bastian Herre, Lucas Rodés-Guirao and Esteban Ortiz-Ospina (2013) - "Democracy." Data adapted from V-Dem. Retrieved from https://ourworldindata.org/grapher/freedom-of-expression-index.

[3] Restrictions on speech include avoiding false statements that harm someone's reputation (libel and slander), not inciting illegal actions, respecting copyright laws, protecting trade secrets, refraining from perjury, avoiding the creation or distribution of obscene materials, and avoiding threats and hate speech.

[4] For example, in the United States, under Title 18 of the U.S. Code 2383, "Whoever incites, sets on foot, assists, or engages in any rebellion or insurrection against the authority of the United States or the laws thereof, or gives aid or comfort thereto, shall be fined under this title or imprisoned not more than ten years, or both; and shall be incapable of holding any office under the United States."

[5] Stone (2009) provides a historical narrative of this tension in the United States.

forces. The maximum sentence is life in prison, while the minimum sentence for "active participants" is set at three years.[6]

What speech was allowed or not allowed?[7] Right after the enactment of the Hong Kong NSL, it was alleged that the legal uncertainty was so large that even financial research analysts feared critical commentary lest they might be labeled as "unpatriotic," thereby affecting their careers.[8] These career concerns were not exaggerated ex post. For example, Hao Hong, a high-profile Chief Strategist at BOCOM International (a state-owned broker in Hong Kong), had his social media accounts, where he had more than three million followers, suspended on April 30, 2022, after a series of bearish reports on the Chinese economy and stocks. He then left the company.[9] It became more explicit in Mainland China on December 20, 2024, after a few more chief economists of brokerage firms revealed their negative views on the Chinese economy.[10]

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[6] The NSL does not cover sedition. A colonial-era sedition ordinance, however, had existed since 1938, which was further amended in 1970. See, e.g., Historical Laws of Hong Kong Online, "Sedition Ordinance," accessed November 24, 2024, https://oelawhk.lib.hku.hk/items/show/2043 and Hong Kong Legislative Council, "Official Report of Proceedings," 11 February 1970, accessed November 24, 2024, https://www.legco.gov.hk/yr69-70/h700211.pdf. Xiang and Sy (2025) find that, unlike its deployment during the British Hong Kong period, when the sedition law was directed primarily against opposition media, the post-2019 enforcement of the sedition law has extended to encompass both prominent opposition figures and ordinary citizens.

[7] South China Morning Post (July 27, 2021) reported: "A panel of three High Court judges appointed by the city's leader ruled on Tuesday that Leon Tong Ying-kit had incited separatism by displaying the signature rallying call of the 2019 anti-government protests, "Liberate Hong Kong; revolution of our times," when he took to the streets of Wan Chai during a July 1 rally in 2020." https://www.scmp.com/news/hong-kong/law-and-crime/article/3142686/hong-kong-national-security-law-first-person-stand?module=inline&pgtype=article.

[8] Bloomberg (November 23, 2022) reported: "Conversations with more than 30 analysts, fund managers, and executives in or connected to the financial hub reveal the extent to which self-censorship has inhibited the research community. They detail a world of paranoia, where analysts worry even mild criticism of China could see them reprimanded, lose their jobs — or worse, face charges under the powerful national security law imposed by Beijing." Moreover, multiple international financial journalists' working visa renewals were denied by the HK government without reason since 2020, including one of the authors of this Bloomberg report on the silencing of Hong Kong's analysts.
https://hongkongfp.com/2025/08/23/bloomberg-journalist-latest-to-be-denied-hong-kong-work-visa-without-reason-as-press-groups-raise-concerns/

[9] "Outspoken China Strategist Leaves State-Owned Broker After Social-Media Accounts Are Censored" - WSJ.

[10] "China Tells Chief Economists: Be Positive, or Else" - WSJ.

Financial regulators in Hong Kong, on the other hand, were adamant that the law was clear and a big plus for Hong Kong's financial markets.[11] The Hong Kong government also made the following press release to stress that the line is not blurred: "The offences endangering national security stipulated by the NSL and the Safeguarding National Security Ordinance (SNSO) target acts endangering national security with precision, and define the elements and penalties of the offences with clarity. The prosecution has the burden to prove beyond reasonable doubt that the defendant had the actus reus and mens rea of an offence before the defendant may be convicted by the court. Law-abiding persons will not unwittingly violate the law…"[12] It is, therefore, evident that the government, together with actors supportive of the NSL, holds views about the law's legal certainty that differ from those of other stakeholders, who perceive a higher degree of legal indeterminacy in its scope and application. Nevertheless, self-censorship can arise whenever some providers of opinions perceive substantial legal uncertainty, whether or not that perception is justified.

The purpose of our paper is to investigate this tension. Does the impairment of certain forms of political speech, using the example from the enactment of Hong Kong NSL, spill over into one type of financial speech – the opinions of local sell-side equity analysts about their covered firms? We test whether the perceived legal uncertainty about what type of speech was or was not permitted under the law led local analysts with career concerns to self-censor their negative opinions. The reason we focus on this form of financial speech is that it is the job of sell-side analysts to provide opinions to their buy-side clients at regular intervals. Hence, they cannot "stay silent" due to self-censorship, which allows us to perform the tests of self-censorship using their observable actions. Specifically, when a firm had a bad year, did these local analysts not call it as they saw it, lest they be deemed as inciting pessimism about the Chinese economy and endangering national security, and called out for crossing a red line? If such a behavior existed, was it more acute for the central state-owned enterprises (SOEs) they

[11] Bloomberg (November 23, 2022) reported: "A spokesman for Hong Kong's Financial Services and the Treasury Bureau said in a written statement that the National security law was clear: "Law-abiding people will not unwittingly violate the law. With stability restored by the NSL as well as our close financial integration with the Mainland, investors have shown more interest in the Hong Kong market and confidence in the prct of Hong Kong's financial development." Other than this statement, no guidance or further revisions were provided about the law.

[12] Hong Kong Special Administrative Region Government, "HKSAR Government strongly condemns twisted remarks by US and Canada on Safeguarding National Security Ordinance," April 13, 2024, accessed November 24, 2024, https://www.info.gov.hk/gia/general/202404/13/P2024041300737.htm.

covered, because any criticism of such firms could be considered an action of shaming the central government?[13]

To answer these questions, we collect analyst reports of key Hong Kong firms from 2018 (two years before the law was enacted) to 2022 (two years after the law was enacted). We avoid using longer windows because there were other important events before (a new Chief Executive, Carrie Lam, in early 2017, for example) and later (the passage of Hong Kong's local security law, Article 23, in early 2024, for example) that could corrupt the influence of the NSL. We restrict our sample to reports of about 40 firms that continuously remained in the Hang Seng Index (HSI) to avoid addition and deletion effects that are well-documented (e.g., Shleifer, 1986).[14] We also exclude firms whose analyst reports were not available. These 40 firms have the largest analyst coverage.[15] Sell-side equity analysts' reports on these firms also receive the most attention and thus have the strongest career concerns for analysts.

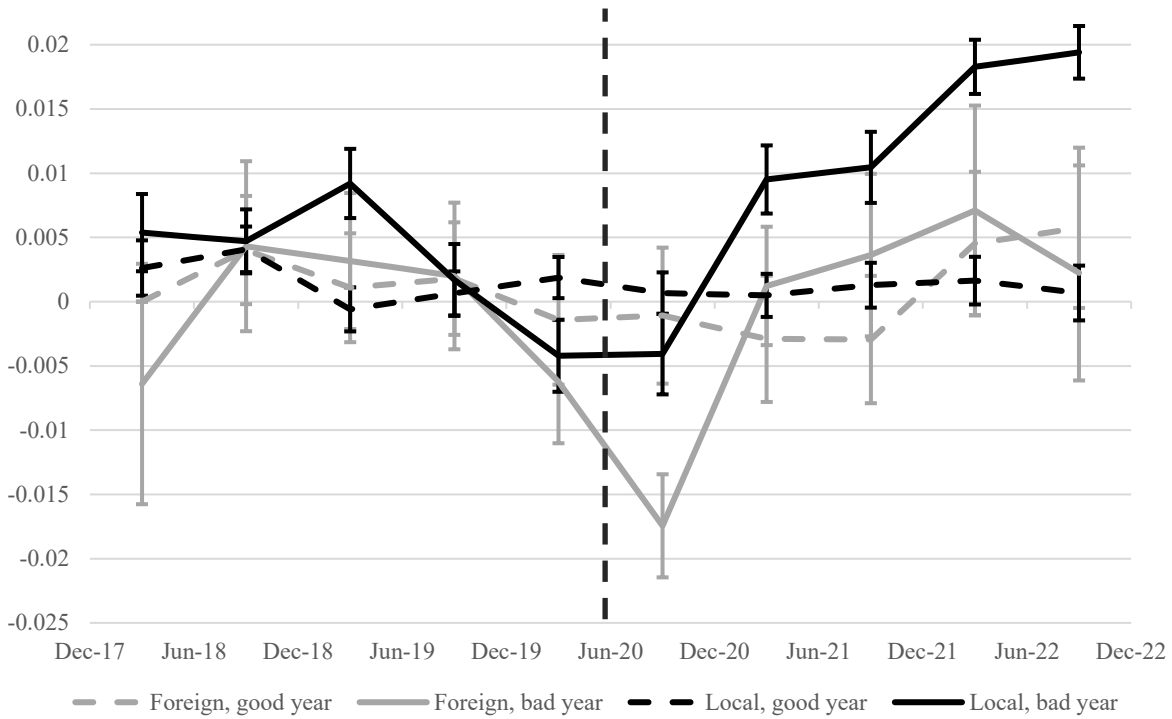
We use three outcome variables to examine whether our results can be interpreted as evidence of self-censorship. These variables represent three vastly different dimensions of financial speech by the analyst: (1) numbers – earnings per share (EPS) forecast biases, (2) language – the vagueness of the text in the reports, and (3) time – the delayed response of the analyst to earnings announcements. If analysts do self-censor their reports when bad news hits

[13] Local analysts naturally face higher risks in violating the NSL, given their local career and social circle. The foreign analysts may also have similar career concerns. But as long as the foreign analysts are not affected as much as the locals, the foreign analysts could still serve as the control group, and our differential results, if they exist, would actually be an underestimation of the self-censoring effect.

[14] The Hang Seng Index (HSI) HSI is a market value-weighted index compiled from a selection of the largest companies in Hong Kong. It is the S&P 500 or the FTSE 100 of Hong Kong. The number of stocks in the index increased from 50 to 76 between 2018 and 2022. However, only 40 firms remained continuously included in the index during this period. HSI makes up 35.9% and 39.0% of market capitalization on the Hong Kong Stock Exchange in 2018 and 2022, respectively. Our 40 firms make up 34.5% (24.4%) of market capitalization in 2018 (2022) and 53.9% (32.5%) of trading volume in 2018 (2022).

[15] The average numbers of analysts per firm for these 40 firms are 22 and 21 in 2018 and 2022, respectively, whereas the average numbers of analysts per firm following other stocks in the entire exchange are 2 and 3 in 2018 and 2022, respectively.

Figure I. Forecast Biases on Year-end EPS by Local and Foreign Analysts



the firm they are analyzing, we expect to see more upward forecast biases, more vagueness in their writings, and longer delays in their responses.

Our empirical tests rely on a triple-difference framework, comparing (1) before versus after the NSL enactment, (2) local analyst (treated) versus foreign analyst (control), and (3) firm-specific bad year versus firm-specific good year. Figure I crystallizes the results of our paper in the first dimension – earnings forecast biases. We observe that the earnings forecasts for most analysts are fairly accurate from 2018 to 2022, with two exceptions. Following a firm-specific bad year, foreign analysts became overly pessimistic immediately after the passage of the NSL in 2020, but this pessimism turned out to be transient. In contrast, following the enactment of the Hong Kong NSL, local analysts developed a stronger and more persistent upward bias in their earnings forecasts when the firms they covered experienced relatively poor performance in a given year.

We perform more rigorous tests by triple-difference panel regressions. The results show that local analysts' forecasts are upward-biased for firm-specific bad years after the NSL, compared with their foreign counterparts. The triple-difference coefficient is significant after controlling for analyst (analyst team) fixed effects, stock fixed effects, and quarter fixed effects, with standard errors clustered at the analyst and quarter level. Our result also holds when we use a balanced panel, which contains only analysts staying before and after the HK NSL

(reported in Appendix D). This finding indicates that the composition of analysts before and after NSL, e.g., due to *migration* in and out of Hong Kong, does not alter our conclusion. A subsample test reveals a stronger bias when local analysts cover central state-owned enterprises. This is consistent with our hypothesis, as outing weakly performing Chinese central SOEs may be regarded as criticizing the Chinese central government publicly, a taboo in the eyes of the NSL.

If local analysts self-censor their reports due to perceived legal uncertainty, such concerns should be reflected in the language used in the reports. We conjecture that using weak modal words such as "could" and "might" helps local analysts maintain a high level of ambiguity when writing reports for poor-performing firms after NSL. Although we do not find that local analysts, compared to foreign analysts, use more modal sentence ratios in their reports after a firm-specific bad year for the average firm, they do so for central SOEs.[16]

With a high perception of legal uncertainty after NSL, local analysts may wait and see how foreign analysts respond before issuing their reports when the covered firms experience a bad year. Self-censorship should thus also be reflected in the timeliness of their reports. We observe a longer duration between earnings announcements and the issuance of local analyst reports for poor-performing central SOEs after NSL, compared to the duration of foreign analysts.

Taken together, these three sets of findings show that restrictions on political speech under the Hong Kong NSL spilled over into the financial speech of local analysts, with the effects being particularly pronounced when the firms they covered were owned by the Chinese central government. The findings also reject several null hypotheses: (1) there was no spillover effect from the restriction on political speech to financial speech; (2) local analysts did not perceive any legal uncertainty arising from the NSL; (3) foreign analysts responded to the NSL in the same way as local analysts; (4) there was no stronger implication that criticizing Chinese central SOEs constituted a breach of the NSL; and (5) analysts reacted to the NSL symmetrically across good and bad firm performance. Were any of these null hypotheses true, our findings would not have emerged.

A plausible alternative explanation for the documented upward bias of local analysts' forecasts is heightened patriotism among these analysts after the NSL. That is, local analysts

[16] We counted the sentences as well as ratio of sentences with weak modal words on the first page of each report. We use the word list developed by Loughran and McDonald (2011) to assess ambiguity in financial texts. The complete word list is provided in Appendix B.

voluntarily offer more positive forecasts than their foreign counterparts when central SOEs underperform to show their support for the country after NSL. However, this alternative explanation is unlikely to be true since we find local analysts delay their response and, further, they use more weak modal words in their reports. In general, patriotic actions and language should be swift and precise, which is the opposite of what we find.

In addition, another alternative hypothesis is that local analysts may become more conservative and risk-averse due to closer exposure to COVID-19, which may lead to a higher usage of weak modal words and delayed responses. However, the upward-forecast-bias result invalidates this argument. On the other hand, if our results were driven by COVID-19 altering local analysts' information advantage (Bae, Stulz, and Tan, 2008; Jia, Wang, and Xiong, 2017), we should not expect to see a systematic upward bias in their forecasts after NSL. Hence, even though COVID-19 largely overlaps with our sample period, it cannot simultaneously explain all three of our results. Section IV.D and Appendix D discuss the results of formal tests that rule out these alternative hypotheses.

Finally, we investigate whether the stock market participants are aware of the existence of self-censorship and respond accordingly. If the market understands that local analysts self-censor their opinions, the market may be insensitive to the positive signals from local analysts. We find that the stock prices of central SOEs are *significantly less responsive* to the positive recommendations issued by local analysts after NSL. This result indicates that the market discounts the information content in these positive reports, plausibly due to an understanding of the local analysts' self-censoring incentives.

Although price efficiency appears uncompromised by the biased recommendations, the distorted behavior of local analysts might still jeopardize the integrity of the market. Local analysts may face heightened competition in providing ancillary services, such as additional bespoke confidential analyses or private corporate access, to compensate their buy-side clients for upward-biased forecasts. We leave this to future research, given the limitations of data availability and the scope of our paper.

Is Hong Kong special? While we use the example of the NSL in Hong Kong because of the cleaner identification strategy it offers, our findings regarding the spillover of constraints on political speech into financial speech are more general and relevant. We see contemporary instances of this spillover even in democracies. For example, in the United States, there are reports of scattered signs of self-censorship in the financial press caused by attacks from President Trump. For instance, he asked Goldman Sachs to fire its chief economist because of

the person's views on tariffs.[17] Although the NSL/SOE nexus is unique to China/HK, it can still provide general evidence of financial speech self-censoring due to political pressure.[18]

Related Literature. To the best of our knowledge, our paper is the first to provide empirical evidence for the spillover effects of impaired political speech on financial speech. The paper that is closest to ours is Kempf and Tsoutsoura (2021), who show that the political views of credit rating analysts color their financial views. Our paper differs in that we demonstrate how the financial views of equity analysts are self-censored when political repression in society commences.

Our paper is in the intersection of several literatures. First, it expands the research on the consequences of government influence on media. For example, Besley and Prat (2006) show that media capture by political incumbents can lead to increased corruption as a free and independent press serves as a crucial watchdog against corrupt practices.[19]

Second, it relates to the literature on the consequences of the political orientation of the media on economic and political outcomes (e.g., Gentzkow and Shapiro, 2010; Enikolopov, Petrova, and Zhuravskaya, 2011, 2020; Yanagizawa-Drott, 2014; Adena et al., 2015; Grosfeld et al., 2024). In the case of China, Qin, Strömberg, and Wu (2018) show that reduced media competition due to a reform that forces most county-level newspapers to exit the market results in some of the remaining newspapers focusing on political propaganda. However, despite strict government censorship in China, Qin, Strömberg, and Wu (2024) show that social media has a sizeable effect on the spread of protests. We complement these studies by providing novel evidence that the introduction of a national security law could induce financial media biases.

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[17] See the report in the following link: https://www.ft.com/content/2f344485-094f-403b-9e92-7ba5d3355360).

[18] In Turkey, JP Morgan Chase & Co was investigated after they advised their clients to short the lira (https://www.businessinsider.com/turkey-probes-jpmorgan-for-lira-advice-before-currency-plunged-2019-3). In India, it was alleged that short-seller Hindenburg shut down because of lawsuits filed against it for his claim that the empire of Adani (who is a friend of the Indian Prime Minister) was a house of cards. (https://frontline.thehindu.com/news/hindenburg-research-closure-nate-anderson-adani-group-short-seller-wall-street/article69134775.ece).

[19] Chen and Yang (2019) show that free access to uncensored internet alone does not lead to a higher demand for politically sensitive information in a field experiment in China. Guriev, Melnikov, and Zhuravskaya (2021) find that the global expansion of 3G mobile networks reduces the government approval rate because the internet helps expose corruption in government. However, such an effect exists only when the internet is not censored. Our paper differs from these studies as we document a spillover effect from political speech censorship into financial media self-censorship. Our paper is also related to Piotroski, Wong, and Zhang (2015) who find that during two important political events, local politicians and their affiliated firms have the incentives to restrict the release of negative information, leading to an observable change of stock return skewness.

Third, our findings on the self-censorship of local analysts are also related to the large literature showing that analysts tend to refrain from expressing negative opinions due to conflict of interests between their employers and the covered firms (e.g., Dugar and Nathan, 1995; Michaely and Womack, 1999; Hong, Kubik, and Soloman, 2000; Lim, 2001; Hong and Kubik, 2003; Jackson, 2005; Kadan et al., 2012). We expand these existing studies by showing that censorship of political speech due to high perceived legal uncertainty can spill over to self-censorship of financial speech: after the NSL, Hong Kong local analysts paint a rosier picture by shading up earnings forecasts, use vaguer language, and delay their responses to earnings announcements for poorly performing covered firms, especially for central SOEs.

The rest of the paper is organized as follows. Section II introduces the institutional background of the National Security Law and develops the main hypothesis. Section III describes the data sources and variables used in the paper. Section IV presents the main results. Section V studies the impact of impaired commercial speech on the financial market. Section VI provides some concluding thoughts.

II. INSTITUTIONAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

II.A. The institutional background of the Hong Kong National Security Law

The Hong Kong National Security Law (NSL), officially known as the Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region, was enacted on June 30, 2020. This law marked a significant shift in Hong Kong's legal landscape, with arguably profound implications for its autonomy and civil liberties. To understand the NSL, it is essential to appreciate the context of Hong Kong's unique status within the People's Republic of China (PRC). Following over 150 years of British colonial rule, Hong Kong was handed back to China on July 1, 1997, under the Sino-British Joint Declaration signed in 1984. This handover agreement established the "One Country, Two Systems" principle, allowing Hong Kong to maintain its capitalist economic system, common law legal framework, and a high degree of autonomy for 50 years after the handover. The notion of "One Country, Two Systems" was designed to guarantee Hong Kong's residents various rights and freedoms, including freedom of speech, assembly, and the press.

Article 23 of the Basic Law, Hong Kong's "mini-Constitution," required the city to enact its own national security law. Attempts to do so in 2003 were met with massive protests, leading to the bill's withdrawal. There were protests again in 2014, but this time it was because

mainland China proposed changes to the Hong Kong electoral system.[20] Finally, in May 2020, following a year of widespread protests in Hong Kong, the National People's Congress (NPC), China's top legislative body, passed a decision to draft a national security law for Hong Kong. NPC viewed Hong Kong's long-standing failure to complete its local legislation as creating serious gaps in preventing and punishing acts endangering national security, leaving the city "unprotected" in this vital field.[21] This political action bypassed Hong Kong's local legislative process, raising certain concerns over the erosion of the city's autonomy. On June 30, 2020, the NPC Standing Committee unanimously passed the NSL, and it was subsequently added to Annex III of the Hong Kong Basic Law. The law took effect on July 1, 2020, the 23rd anniversary of Hong Kong's handover to China.

The official purposes of the NSL are summarized as: upholding "one country, two systems" and Hong Kong autonomy; safeguarding national sovereignty, security, and development interests; maintaining long-term prosperity and stability; ensuring residents' lawful rights and freedoms.[22] The law criminalizes four types of activities: secession, subversion, terrorism, and collusion with foreign forces, with maximum penalties of life imprisonment. The law also allows for cases to be tried in mainland China in certain circumstances, and for judges in national security cases to be handpicked by the Chief Executive from a pool of existing ones. In addition, Article 65 vests the ultimate interpretive authority over the NSL in the Standing Committee of the National People's Congress, Beijing's national legislature. Concerns were thus expressed about judicial independence and the right to a fair trial.[23] More importantly for our research, the law's broad and vague offense

[20] Cantoni et al (2019) provide experimental evidence to interpret these protests as strategic games. Bursztyn et al (2021) examine the causes of sustained participation in these protests.

[21] National Security Law Legal Forum: Keynote Speech (Zhang Yong), the National People's Congress of the People's Republic of China, May 28, 2020, http://www.npc.gov.cn/npc//c2/c30834/202206/t20220602_317974.html.

[22] Introduction to the Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region, Department of Justice (HK), April, 2021, https://www.doj.gov.hk/tc/miscellaneous/pdf/safeguarding_national_security_c.pdf

[23] The Hong Kong government, however, strongly argued that NSL does not jeopardize judicial independence. https://www.news.gov.hk/eng/2022/03/20220330/20220330_190244_135.html.

definitions may have raised concerns that it generated a high degree of perceived legal uncertainty.[24]

Although Hong Kong's Chief Executive, John Lee, stated that the NSL swiftly ended violence and chaos and restored the city to a stable, safe, and orderly state, some media outlets took a different view.[25] They emphasized that the law's rapid passage and implementation caught stakeholders off guard. They claimed that Hong Kong residents, legal professionals, and the international community had little time to scrutinize and evaluate its full implications.[26]

Given its vague definitions and little time to judge the "red line of the law," the legal uncertainty of NSL could have a spillover effect on other opinion providers.[27] Legal uncertainty, importantly, has been proposed to be a core element of self-censorship (Schauer, 1978; Penney, 2022). For example, journalists, editors, and scholars may feel that they are more likely to face scrutiny when reporting on or discussing issues that matter to national security.[28] When such an opinion provider is subject to uncertainty avoidance, this spillover effect may lead to increased self-censorship manifested in giving upward-biased opinions, especially when the actual situation is not promising. Further, opinion providers could also change the content's tone and the degree of vagueness if their jobs require them to express their views or comment on events publicly and constantly. They may even delay giving their opinions. Sell-side equity analysts are one such professional opinion provider.

II.B. Career concerns of sell-side equity analysts

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[24] The perceived legal uncertainty turns out to be not unfounded. Chiu (2025) examines the case of *HKSAR v Ng Ching-Hang*, which is the first one dealing with "conspiracy to commit subversion," and argues that the court's judgments demonstrate a jurisprudential approach that privileges considerations of national security above legal certainty. Chan (2022, 2023) argues that Hong Kong's legal order has transformed from a liberal enclave governed by a pluralistic relationship with mainland China's legal system into a "dual state" (Fraenkel, 2010), a bifurcated system comprising a "normative domain" governed by legal rules and a "prerogative domain" where political authorities exercise unchecked power, particularly in matters deemed related to national security.

[25] Hong Kong China News Agency, "Hong Kong NSL 5th anniversary: Chief Executive John Lee says national security crimes show declining trend," June 17, 2025, https://www.hkcna.hk/h5/docDetail.jsp?id=101028257&channel=2813.

[26] Laignee Barron, "It's So Much Worse Than Anyone Expected.' Why Hong Kong's National Security Law Is Having Such a Chilling Effect," TIME, July 23, 2020, accessed November 24, 2024, https://time.com/5867000/hong-kong-china-national-security-law-effect/.

[27] Erin Hale, "Hong Kong Refuses to Clarify Law as Uncertainty Dims Business Hub," Al Jazeera, June 9, 2023, accessed November 24, 2024, https://www.aljazeera.com/economy/2023/6/9/hong-kong-touted-rule-of-law-now-it-wont-say-what-the-law-is.

[28] "Hong Kong: 'We Don't Know Where the Red Line Is'," BBC News, June 27, 2022, accessed November 24, 2024, https://www.bbc.com/news/av/world-asia-china-61957394.

As discussed in the introduction, it is well documented that sell-side equity analysts refrain from expressing their true opinions and alter their financial forecasts and recommendations due to (1) having potential conflicts of interest, (2) avoiding negative repercussions, or (3) maintaining relationships with the companies they cover. Specifically, sell-side equity analysts work for investment banks or brokerage firms that maintain business relationships with the companies they cover. These relationships can create pressure on these analysts to provide favorable coverage to avoid jeopardizing their firms' business interests. They may fear that negative recommendations or forecasts could lead to a direct "retaliation" from the companies they cover, such as the termination of investment banking business relations. The other potential negative impacts on their daily jobs or even careers include reduced access to management, limited participation in conference calls, or exclusion from corporate events, which can hinder their ability to gather information.

Moreover, providing optimistic coverage may improve analysts' career prospects by helping them cultivate favorable relationships with the managers of the firms they follow. For example, Horton, Serafeim, and Wu (2017) find that banking analysts are more likely to exhibit optimistic bias when forecasting for their employer banks or banks with higher reputations. Baginski et al. (2018) show that career concerns can incentivize analysts, especially those with lower severance pay, to delay the disclosure of negative information to protect their reputation and future job prospects. Harford et al. (2019) document that analysts prioritize high-profile, valuable firms within their covered firms due to career concerns. Analysts also have more favorable career outcomes when they strategically allocate more effort to these major firms. Moreover, both Pittman et al. (2024) and Kong et al. (2025) show that analysts employed by brokerage firms affiliated with politicians or the government give overly optimistic recommendations and earnings forecasts for politically connected firms. The behavior of sell-side equity analysts refraining from expressing their true opinions, especially the negative ones, is crystallized by Stolowy, Paugam, and Gendron (2022): "The analysts often engage in *self-censorship* in order not to develop a bad relationship with the companies they follow."

The NSL could have a similar impact on analysts. Since there could be consequences for the analysts' reports that cover and discuss policy and national economic matters, there may be pressure to provide favorable coverage. Also, the brokerage firms may not want to cause political issues, and they, not the government, may provide such pressure for the analysts to self-censor their reports.

II.C. Hypothesis development and the tests

The studies mentioned above provide strong evidence that analyst self-censorship exists due to career concerns from various economic ties. In a similar spirit to this line of research, we conjecture that some sell-side equity analysts may also hold back from providing negative opinions in their forecasts or reports for poor-performing firms due to career concerns from their perception of political and legal uncertainty. That is, some Hong Kong sell-side equity analysts may exhibit "self-censorship" and, therefore, provide biased forecasts for major listed firms they cover after the enactment of the Hong Kong National Security Law. Criticizing these firms or expressing negative views about them may imply a breach of national security, as they represent economic pillars whose stability equates to national security. Accordingly, we propose our hypothesis as follows:

Hypothesis: Hong Kong sell-side equity analysts exhibit self-censorship toward major listed firms on HKEX after the NSL enactment.

Our hypothesis provides several testable implications on how the self-censorship of sell-side equity analysts could be exhibited in their jobs. First, in terms of earnings forecasts, which is one of the main tasks of sell-side analysts, those who self-censor would exhibit upward forecast biases when the covered firms experience a poor-performing year, relative to other analysts without self-censorship. Second, career concerns would also incentivize sell-side equity analysts to use more ambiguous words to protect themselves when issuing reports after a bad year. Third, self-censorship would also drive sell-side equity analysts to delay their reports more after a bad firm year.

In addition, among the major listed firms, the Chinese central state-owned enterprises (SOEs) listed on *HKEX* have a closer connotation to NSL than other major listed firms. Intuitively, offering negative opinions toward the central SOEs might be more likely to be interpreted by extreme patriots as criticizing the economy, the communist party, the central government, or the country. Hence, the exhibition of analyst self-censorship should be stronger when commenting on the central SOEs, and this should manifest itself in all three dimensions we mentioned above – upward forecast bias of EPS, vagueness in language, and report delay.

To provide causal inferences of our hypothesis and its testable implications, we adopt a differences-in-differences-in-differences (or triple-difference) model. The first difference is between before and after the NSL enactment, which occurred in June 2020. The second difference is between local (Hong Kong) and foreign analysts. The local analysts naturally face higher career concerns than their foreign counterparts because they might have fewer career options outside Hong Kong and mainland China. Moreover, their downside risks are also higher as their families and social networks are in Hong Kong or the Greater China area. Hence,

they serve as the treated group in our triple-difference model, while their foreign counterparts serve as the control group.[29] The third difference is between the poor and non-poor performance of the covered firms. According to the Oxford English Dictionary, "self-censorship" is the exercise of control over what one says and does, especially to *avoid criticism*. Honest negative opinions about poorly performing Hong Kong firms may be criticized for being "unpatriotic".

While the independent variables and the methodology are roughly similar when testing the implications of the hypothesis of self-censorship, the dependent variables are different. The dependent variable for the first test, our main test, is a number – forecast bias. It is defined in the same way as in the literature – forecasted EPS minus actual EPS scaled by price – with some minor changes to suit the way analysts report in Hong Kong. The dependent variable for the second test is language – the count and ratio of sentences containing weak modal words. The dependent variable for the third test is time – the delayed response of analysts to earnings news, which is the number of days between the last earnings announcement and the first follow-up analyst report. We further perform all the tests on two subsamples: central SOEs and non-central SOEs.

III. DATA

Our study uses data collected from two main data sources: Aftermarket Research (AMR) from Refinitiv Workspace (formerly Thomson One) and Datastream. We download all analyst reports on 40 stocks that are consecutively included in the Hang Seng Index (HSI) from 2018 to 2022 via Refinitiv Workspace AMR. Appendix A provides the list of these 40 firms with their ticker symbol, names, dollar market capitalization, dollar volume of trade, and the number of analysts following in 2018 (the beginning of the sample) and 2022 (the end of the sample).

We restrict our sample to analyst reports that have no second ticker (single-company reports). We screen out small brokers with fewer than 100 reports during our sample period, and we exclude reports that are written by teams and have no identifiable first (lead) analyst name. We end up with 7,672 unique analyst reports with 342 unique analysts covering 40 unique stocks from 2018 to 2022 as our final sample. We use both programming and manual

[29] Our results could be underestimated when foreign analysts also suffer from self-censorship because they know less about the boundaries or the gray areas of the law.

hand-collecting to collect data on the first (lead) analyst and the EPS forecast of these reports. We then merge this data with the stocks' last available price and actual EPS from Datastream.

We define our main dependent variable, analyst forecast bias, as (EPS model forecast * adjustment – actual EPS) / closing price of the stock as of the previous day. The forecast is for the year-end EPS only. We adjust analysts' reported EPS forecasts in cases where they provide only a model-generated EPS figure but do not separately report an explicit forecast of actual EPS. The adjustment factor used is the ratio between the actual EPS and the analyst model EPS of the previous fiscal year. We provide an example of this adjustment in Appendix C.

Analysts (analyst teams) are identified as *local* analysts if the analyst (the lead analyst) has a Chinese family name and as *foreign* analysts if the analyst (the lead analyst) has a non-Chinese name. So, these local analysts could be from Hong Kong (Cantonese), mainland China (Mandarin Pinyin), or other places with Mandarin-speaking populations (such as Malaysia, Singapore, or Taiwan). This definition works against us in finding the result, as the NSL effect should be smaller for analysts from these other regions.

A stock is identified as a *Central SOE* if it is covered in the Hang Seng China Central SOEs Index. These are stocks listed in Hong Kong with the Chinese central state-owned enterprise (central SOE) as the largest shareholder.

To identify a bad year for a firm at a given point in time, we use the revenue (sales) growth as a running variable. We define a firm-year observation to be a *Bad* year if the firm's sales growth is in the lowest tercile of our sample stocks in that year, which is a cross-sectional definition. We provide a robustness check where we define a firm's bad year as a firm year where its sales growth was the worst in its last three years, a time-series definition.

The variable, *After*, equals one if the analyst report came out on or after June 30, 2020, when the National Security Law was enacted, and equals zero if the analyst report came out before June 30, 2020.

Finally, we measure the tone of analyst reports following Loughran and McDonald (2011). After downloading all PDF reports for the companies consistently listed in the Hang Seng Index, we parse the main text of the first page of these reports, defined as the actual sentences and paragraphs where analysts discuss the firm. We exclude boilerplate language such as analyst certifications and disclosures. We focus on the first page because that is where most of the important content exists, and to mitigate the concern that our results may be affected by the number of pages in the reports. The first page of analyst reports contains critical standardized summaries – recommendations, earnings forecasts, and target prices –

prominently displayed at the top, encapsulating core signals that drive immediate market reactions independent of lengthy textual bodies (Huang et al., 2014). Averaging 10.3 pages in our sample, full reports may introduce redundancy and noise; focusing on the first page thus enables precise, efficient tone extraction with high accuracy while preserving informativeness.

We implement an intuitive bag-of-words (BoW) methodology using finance-tailored dictionaries as in Loughran and McDonald (2011). Bag-of-words methodology and its variants are widely used in finance literature due to their transparency and robustness in large-scale textual analysis of reports and filings. (Cohen et al., 2020; Cookson and Niessner, 2020; Hassan et al., 2019). Unlike opaque "black-box" machine learning models requiring extensive training data and prone to overfitting, it offers reproducible, interpretable results. (Loughran and McDonald, 2016). We count the occurrences of sentences with weak modal words (Loughran and McDonald, 2011) on the first page of each report and define it as *Weak Modal Sentence Count*. The *Weak Modal Sentence Ratio* is *Weak Modal Sentence Count* scaled by the number of sentences on the first page. Weak modal words, such as "could," "might," and "perhaps," are pivotal in expressing views that outcomes are uncertain. In financial texts, the presence of these weak modal words reflects a degree of ambiguity, hesitation, or conditionality. We provide the full list of weak modal words in Appendix B.

The summary statistics for the variables are provided in Table I. Analyst reports in our sample are predominantly written by local analysts. 89.8% of unique analysts are identified as local analysts, and 87.2% of the reports are published by these local analysts. There are 13 stocks identified as central SOEs (32.5% of unique stocks in the sample), including Bank of China, CITIC, China National Offshore Oil Corporation (CNOOC), China Construction Bank, China Life Insurance, China Mengniu Dairy, China Mobile, China Overseas Land & Investment, China Petroleum & Chemical, China Resources Land, China Unicom Hong Kong, Industrial and Commercial Bank of China, and PetroChina.

The forecast biases of the analysts in our sample are quite small on average. This is not surprising as these firms tend to be the most important firms in the analyst portfolio to which they pay the most attention and effort because of their career concern motives (Harford et al., 2019). Analysts do not commonly use weak modal words in the report. The sample mean of the weak modal sentence count is only 1.484, meaning that there are only one or two sentences with any weak modal words on the first page of an analyst report, which limits the statistical power of our test. The average analyst response time to an earnings report is about two days, with a high variation.

[Table I Here]

IV. SELF-CENSORSHIP OF FINANCIAL SPEECH

IV.A. Analyst Self-censorship in Earnings Forecasts

To test how local analysts self-censor their reports for a covered firm in a bad year after NSL, we perform a triple-difference regression analysis as follows:

$$\begin{aligned} Forecast\ Error_{a,s,y,t} &= \alpha + \beta\ After_t \times Local_a \times Bad\ Year_{s,y} + \gamma_0\ After_t \times Local_a \\ &+ \gamma_1\ After_t \times Bad\ Year_{s,y} + \gamma_2\ Local_a \times Bad\ Year_{s,y} + \gamma_3\ After_t \\ &+ \gamma_4\ Local_a + \gamma_5\ Bad\ Year_{s,y} + \eta_s + \theta_a + \tau_q + \epsilon_{a,s,y,t} \end{aligned}$$

where *a*, *s*, *y*, *q, t* index the analyst, stock, fiscal year, quarter, and report announcement date respectively. The dependent variable, $Forecast\ Error_{a,s,y,t}$, is the difference between the adjusted analyst forecast on EPS and the actual ex-post EPS normalized using the closing price of the stock on the day before the report.

Our triple-difference regression uses three dimensions: before versus after the NSL, local versus foreign analysts, and bad versus good performing years of a firm. For the first dimension, we use the variable, $After_t$, which equals one if the analyst report came out on or after June 30, 2020, when the National Security Law was enacted; and equals zero if the analyst report came out before June 30, 2020. The second dimension, which is whether the analyst is local or foreign, is determined by the analyst's last name. An analyst (the lead analyst) is identified as a local analyst ($Local_a$ = 1) if the analyst has a Chinese family name and is a foreign analyst ($Local_a$ = 0) if the analyst has a non-Chinese name. The last dimension is whether a firm-year observation is a bad year ($Bad\ Year_{s,y} = 1$) or not ($Bad\ Year_{s,y} = 0$). This is determined by whether a firm-year observation belongs to the lowest tercile sorting on the sales growth.[30]

We include all combinations of interactions among these three variables in the regression model. The key variable of interest is $After_t \times Local_a \times Bad\ Year_{s,y}$, whose coefficient ($\beta$) would reveal whether local analysts' forecast biases tend to be different from

[30] Note that we have used forward-looking sales growth to define our bad years. This is because we aim to investigate the analysts' forecast biases and behaviors when they are anticipating a bad year ahead.

those of foreign analysts when they are covering a stock in a bad year after NSL. We expect a positive β if local analysts provide upward-biased forecasts as a form of self-censorship.

We also include three different fixed effects: stock fixed effects, analyst (team) fixed effects, and quarter fixed effects. These three fixed effects control for time-invariant stock characteristics, time-invariant analyst characteristics, and quarter-invariant macro-characteristics. The standard errors are clustered at the analyst and quarter level.

[Table II Here]

The results are shown in Table II. Columns 1 to 5 present the results with or without the fixed effects. In all five columns, the coefficients of $After_t \times Local_a \times Bad\ Year_{s,y}$ are positive and statistically significantly different from zero. Given the standard deviation (SD) of the dependent variable is 0.020, the implied economic significance is non-negligible. The local analysts tend to issue their EPS forecasts around 0.35 to 0.65 SD higher than the foreign counterparts for a poor-performing firm after the NSL.

These results are well in line with our self-censorship hypothesis, which predicts that local analysts would refrain from providing negative opinions when their covered firms experienced a bad year. Given the uncertainty surrounding potential legal and career repercussions, local analysts tend to refrain from open criticism and instead offer relatively more favorable assessments of poorly performing stocks after the NSL's enactment, resulting in upwardly biased earnings forecasts.

Our self-censorship hypothesis also implies a strong NSL effect on Chinese central state-owned enterprises (central SOEs) listed on *HKEX* because offering negative opinions toward the central SOEs might be more likely to be interpreted by extreme patriots as criticizing China. This closer connotation to NSL would lead to a stronger impact on self-censorship when local analysts are writing reports for poorly performing central SOEs.

To test this implication, we run the same regression model on two subsamples: reports on central SOEs and reports on non-central SOEs. The results are shown in Table III.

[Table III Here]

Columns 1, 2, and 3 present the results using the full sample, central SOE subsample, and non-central SOE subsample, respectively. The impact of NSL on analyst self-censorship is indeed stronger for the central SOE subsample, where the economic magnitude is around 1.2 standard deviations (0.022/0.018), and it is statistically significant. The economic magnitude of self-censorship for the non-central SOE subsample is only 0.14 standard deviation

(0.003/0.021), and it is not statistically significant. This result further corroborates our interpretation of analyst self-censorship.

IV. B. Analyst Self-censorship in Language

Understanding textual information in financial reports is crucial, particularly regarding language that indicates bias. Sell-side analysts produce reports as part of their livelihood. The existing evidence suggests that to maintain good relationships with firms, they often adopt an overly optimistic stance (Lin and McNichols, 1998; Michaely and Womack, 1999). A particularly intriguing scenario arises when an analyst covers a firm that has performed badly. Negative commentary, even when warranted, can be perceived as hostile criticism. This situation creates tension for the analyst: on the one hand, the analyst must present accurate and objective data; on the other hand, the analyst may be inclined to avoid making the firm appear unfavorable, especially when discussing central state-owned enterprises (SOEs) after the National Security Law was passed in Hong Kong.

In such cases, our hypothesis implies that while local analysts are compelled to provide objective numbers, their interpretation of these figures may shift to mitigate negative impressions among readers. We thus examine the usage of weak modal words in their reports because these linguistic elements can significantly influence how texts are interpreted and inform decision-making processes (Ertugrul et al., 2017). In texts, the presence of these weak modals reflects a degree of ambiguity, hesitation, or conditionality, which captures an important characteristic of self-censorship when analysts must address sensitive issues during challenging periods.[31] We anticipate that local analysts will increase their use of sentences containing weak modal words when discussing unfavorable news about central SOEs after the enactment of the NSL.

[31] For example, an excerpt from a section talking about Fintech and business services of Tencent Holdings issued by Auerbach Grayson & Co., Inc. in November 2022: "We **believe** the implementation of fintech regulations is noteworthy, and the earnings growth and valuation of the fintech business **might** be reconsidered. Meanwhile, the cloud business declined slightly. In the short term, the cloud business revenue growth **might** remain at a low level, but we expect its gross margin to improve significantly..." The analyst has to disclose the current decline in the cloud business of Tencent, but he writes a paragraph using several uncertainty/weak modal words to distance himself from potential career consequences.

We apply the same empirical model used for forecast biases to these textual response variables, with the dependent variable being replaced with sentences containing weak modal words. The results are presented in Table IV.

[Table IV Here]

Table IV shows no significant analyst self-censorship in the full sample or the non-central SOEs subsample. In contrast, for the subsample of central SOEs, local analysts tend to use more ambiguous language, compared to foreign analysts after NSL for poor-performing central SOEs. Though the statistical power is a little weak (*p*-value of 0.122, marginally insignificant for sentence count, and 0.090, marginally significant for sentence ratio), the economic magnitudes are not negligible (0.361 more weak modal sentences and 2 percent points more weak modal sentence ratio), given that the use of weak modal sentences is quite low on the first page (with a mean of 1.48 sentences and 7 percent of sentences being weak modal sentences).

This result aligns well with our hypothesis. Although analyst reports are supposed to provide an honest opinion on firms, analysts might be willing to obscure their opinions if they are concerned about potential repercussions. Our result indicates that local analysts engage in self-censorship by moderating their language to mitigate the potential backlash from patriotic stakeholders.[32]

IV.C. Analyst Self-censorship in Reporting Delay

The last dimension for testing our hypothesis is whether analyst self-censorship is manifested in the time it takes to react to the covered firms' earnings announcements. Specifically, after a firm announces a poor performance, do local analysts wait for others to reveal their opinions first? We investigate this issue by analyzing the response time (delay) to firms' earnings announcements. The response time is measured as the number of days between a firm's last earnings announcement and the first follow-up report by the analyst.[33]

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[32] We have also investigated sentiment using the bag-of-words methodology. Although local analysts use more positive words and fewer negative words in bad years for central SOEs after NSL, the difference is small and statistically insignificant.

[33] We only include the first reports that come within a month after the earnings announcement. Earnings announcements can be annual, semi-annual, or quarterly announcements.

We adjust the benchmark model, using the lagged term $Bad\ Year_{s,y-1}$ instead of $Bad\ Year_{s,y}$, as we aim to investigate the analysts' reaction to actual past bad performance (not analysts' predictions of future bad performance). The regression model becomes as follows:

$$\begin{aligned} Response\ Time_{a,s,y,t} \\ &= \alpha + \beta\ After_t \times Local_a \times Bad\ Year_{s,y-1} + \gamma_0\ After_t \times Local_a \\ &+ \gamma_1\ After_t \times Bad\ Year_{s,y-1} + \gamma_2\ Local_a \times Bad\ Year_{s,y-1} \\ &+ \gamma_3\ Bad\ Year_{s,y-1} + \eta_s + \theta_a + \tau_q + \epsilon_{a,s,y,t}. \end{aligned}$$

Note that two variables, $After_t$ and $Local_a$, from the last estimation are not mentioned because we only show the results using quarter fixed effects and analyst fixed effects.

[Table V Here]

We do not observe a longer duration between earnings announcements and the issuance of local analyst reports for a poor-performing firm after NSL, compared to the duration of foreign analysts. However, when we split the sample into central and non-central Chinese state-owned enterprises, we find that the delay is longer for central SOEs. Local analysts tend to react 6.71 days slower to the bad earnings announcement of the central SOE compared to the foreign analysts after the NSL enactment. For the private firms (non-central SOEs), the local analysts tend to react faster than the foreign analysts after the NSL enactment.

IV.D. Alternative Hypotheses and Robustness Checks

To rule out potential alternative explanations for our empirical results, we consider two competing hypotheses. First, the coincidence of the COVID-19 outbreak with the enactment of the National Security Law (NSL) may confound our findings. Second, heightened patriotic sentiment among local analysts might account for the observed behavioral asymmetries between local and foreign analysts. Panel A of Appendix D summarizes these alternative hypotheses and their testable predictions regarding forecast bias, language tone, and response time.

Under the null hypothesis, the NSL has no effect on analysts' behaviors. If, however, local analysts self-censor their assessments of poorly performing firms, as we argue, their forecasts would be systematically more optimistic, their language would contain more weak modal expressions, and their response times would be longer relative to foreign analysts. Our results are in line with all these predictions. In contrast, if the observed differences were instead

driven by asymmetric information about COVID-19, we would expect local analysts with less (more) information about the pandemic's economic effects to make larger (smaller) forecast errors without a systematic directional bias, to rely more (less) on weak modal language, and to adjust their forecasts more slowly (more quickly). Finally, if patriotism rather than self-censorship explains local analysts' behavior, we would expect upward-biased forecasts, stronger language expressions (fewer weak modal words), and shorter response times. Our results contradict part of the predictions from these two alternative hypotheses, which make them less likely to be the main mechanisms.

Nevertheless, to formally rule out COVID-19-related effects, we examine whether our main findings differ across COVID-19-sensitive and COVID-19-insensitive firms. Panel B of Appendix D presents subsample results based on the regression specification in Table II. Sensitivity is defined by cumulative stock returns around two early-2020 COVID-19 events: (1) the Hong Kong border closure (January 27–February 8, 2020), and (2) the Hang Seng Index decline over the two months ending March 27, 2020, during the week when the index fell to 21,696 (its lowest level since 2016). We find no statistically significant difference between the COVID-19-sensitive and COVID-19-insensitive groups, where sensitivity is defined by the border closure. The α coefficient difference statistical test between columns 2 and 3 has a Chi-squared = 0.01 with $p = 0.938$. Neither do we find a statistically significant difference between the COVID-19-sensitive and COVID-19-insensitive groups, where sensitivity is defined by the Hang Seng Index decline. The α coefficient difference test between columns 4 and 5 has a Chi-squared = 0.17 with $p = 0.677$. This result largely rules out asymmetric COVID-19 impacts as a plausible alternative explanation.

Next, we present three sets of robustness checks to further corroborate our main finding. First, our baseline results are estimated on an unbalanced panel that retains all analysts who issue at least one report either before or after the NSL's enactment. Such a panel yields approximately 30% more observations than a balanced one, as the balanced design includes only analysts who issue reports continuously over the sample period spanning two years before and two years after the NSL enactment. In this robustness check, we use the balanced panel to alleviate concerns that our findings may be biased by shifts in local and foreign analyst coverage surrounding the enactment of the NSL.

In particular, a substantial proportion of foreign analysts (12 out of 35) ceased coverage and exited Hong Kong, whereas only a small number (3 out of 35) initiated coverage after the NSL's implementation. Keeping only analysts who issue reports continuously over the sample period thus mitigates the potential concern that our results are confounded by these analyst

transitions rather than reflecting heightened self-censorship induced by the NSL. Columns 1 to 3 of Panel C of Appendix D show that the results remain qualitatively the same as our prior findings. Moreover, in a nontabulated test, we do not observe any systematic changes in the composition between local and foreign analysts before and after the NSL.

Second, for our primary tests, we adjusted analyst forecast EPS since many analyst reports do not report or forecast the actual EPS but only report and predict their model EPS. These might have affected our results. We provide a set of results without these adjustments in Panel C of Appendix D. Columns 4 to 6 of Panel C of Appendix D report consistent results when we use unadjusted forecast biases as the dependent variable.

Finally, Columns 7 to 9 of Panel C of Appendix D report results using an alternative definition of a firm's bad year: a firm-year with the lowest sales growth over its preceding three years. Our main conclusion does not change when using these alternative samples and variable constructions.

V. EFFECTS OF DISTORTED FINANCIAL SPEECH

The previous section showed that local analysts tend to paint a rosier picture of poor-performing stocks after the NSL, plausibly due to career concerns. This is particularly true for Chinese central SOEs. If the market is aware of the local analysts' self-censorship behavior, the SOEs' stock prices may be less sensitive to Buy signals from local analysts than Buy signals from foreign analysts. To test our conjecture, we investigate whether the market reacts less positively to the Buy signals from local analysts using the following empirical specification:

$$\begin{aligned} CAR_{s,[t,t+1]} = {} & \alpha + \beta_1\, After_t \times Local_a \times Buy_{a,s,t} + \beta_2 After_t \times Local_a \times Hold_{a,s,t} \\ & + \beta_3\, After_t \times Buy_{a,s,t} + \beta_4 After_t \times Hold_{a,s,t} + \beta_5 After_t \times Local_a \\ & + \beta_6\, Local_a \times Buy_{a,s,t} + \beta_7 Local_a \times Hold_{a,s,t} + \beta_8 Buy_{a,s,t} + \beta_9 Hold_{a,s,t} \\ & + \eta_s + \theta_a + \tau_q + \epsilon_{a,s,t}, \end{aligned}$$

where $CAR_{s,[t,t+1]}$ is the two-day cumulative abnormal return with a window from the day of the report issuance to one business day later. We use the Hang Seng Index return as the benchmark. $Recommendation$ is a categorical variable that is based on a three-tier system: Buy, Hold, and Sell. We treat "Add," "Buy," "Outperform," and "Overweight" as Buys; "Hold"

and "Neutral" as Holds; and "Reduce," "Sell," "Underperform," and "Underweight" as Sells.[34] The other variables are defined in the same way as before.[35] Our test presumes that analysts have additional information about the firm beyond the information set of stock investors. Hence, investors react to the recommendations made by analysts.

[Table VI Here]

The results are shown in Table VI. We find that the market reaction to the Buy recommendations of local analysts, compared to the market reaction to the Buy recommendations of foreign analysts, differs after the NSL. We find that stock prices in general are significantly less responsive to the positive recommendations issued by local analysts after NSL. Our result implies that the market discounts the information content in these positive reports, indicating that the self-censorship of local analysts is, by and large, anticipated. And again, this impact is much stronger for the reports covering the central SOEs, which means that the market discounts the positive signal from local analysts even more when they are covering the central SOEs. In other words, the market discounts the information content of these reports, having already anticipated local analysts' self-censorship.[36]

VI. CONCLUSION

Our paper examines how Hong Kong's 2020 National Security Law (NSL) impacted the reports of financial analysts. We find that the impairment of political speech due to NSL spilled over into financial speech. Our results show that local analysts, particularly those covering Chinese central state-owned enterprises, self-censored their reports after the NSL's enactment. This self-censorship manifested in upward-biased earnings forecasts, vaguer language, and delayed responses to earnings announcements after a bad performance year for

[30] We treat Hold-Outperform (8 reports) and Hold-Underperform (15 reports) as Hold.

[35] We do not use the variable of $Bad\ Year_{s,y}$ in this regression since it is a forward-looking variable.

[36] While our findings indicate that the market adapts to the self-censorship among local analysts, the consequences of muted financial speech may be far more serious than just this loss of market integrity. It may lead to a deterioration in corporate governance. Unfortunately, a clean identification strategy to demonstrate this remains elusive, as the NSL exerts a profound influence on numerous facets of HK society and the HK economy, including corporate governance. Nonetheless, it is anticipated that the self-censorship of local analysts will result in a deterioration of their function as an external governance mechanism. This conjecture is supported by the findings of Chen, Harford, and Lin (2015), who demonstrate that analysts play a pivotal role in mitigating the expropriation of outside shareholders by managerial entities. Dyck, Morse, and Zingales (2008) and Dyck, Volchkova, and Zingales (2010) have elucidated the pivotal role of media in the context of corporate governance.

the firm. We derive these results by using a triple-difference framework comparing local and foreign analysts' reports before and after the NSL, focusing on firms (especially Chinese central state-owned enterprises) experiencing poor performance. We further show that the market's reaction to local analyst reports was negative after their Buy signals on central SOEs, suggesting a decline in the credibility of their assessments.

Our study provides novel and compelling evidence that political speech censorship can have far-reaching consequences, impacting even seemingly unrelated domains like financial analysis. Our findings raise concerns about the reliability and objectivity of economic information emanating from environments with constrained political speech. The observed biased information, even though discounted by the market participants, may still lead to distortions in capital allocation decisions.

To conclude, the evidence of self-censorship among local analysts in Hong Kong following the implementation of the NSL highlights the importance of protecting freedom of expression, not only for human rights but also for the integrity and efficacy of financial markets. Although we have used the example of the NSL in Hong Kong due to its clean identification, our findings on the spillover of constraints on political speech into financial speech are being observed in many democracies today.

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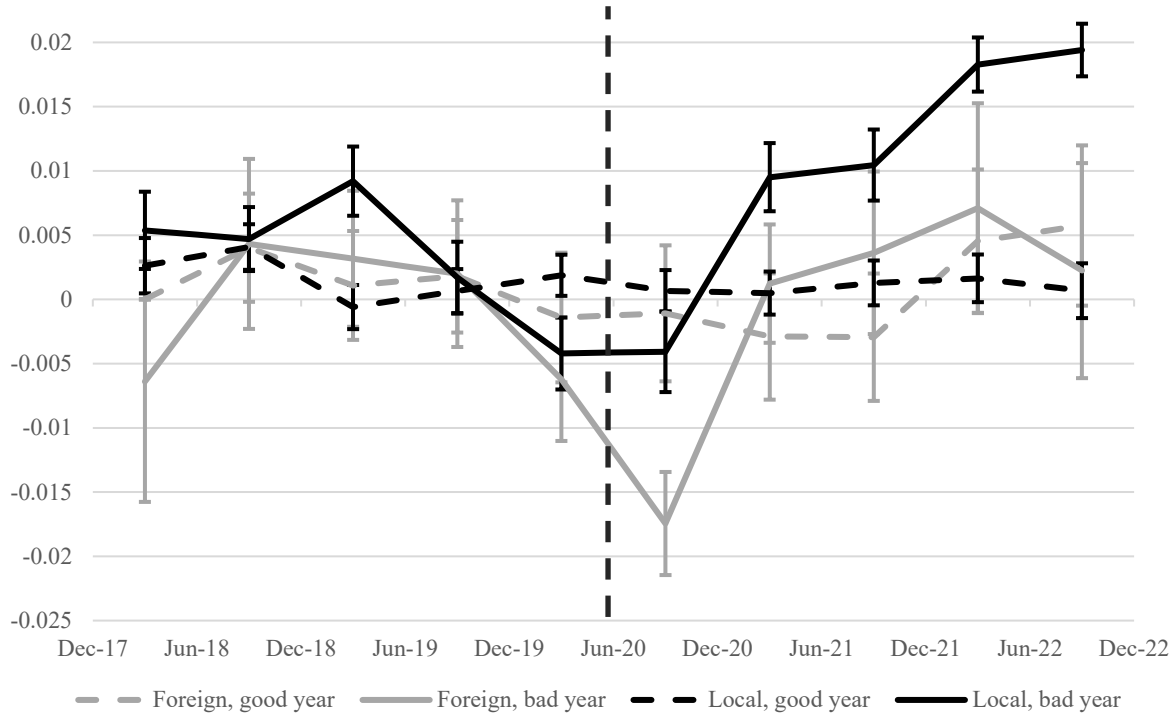

Figure I

Forecast Biases on Year-end EPS by Local and Foreign Analysts

This figure illustrates the conditional means of forecast biases made by local and foreign analysts across good and bad firm-years. The y-axis measures forecast bias, and the x-axis shows calendar time in six-month intervals. Black lines represent local analysts' forecast biases, while gray lines represent those of foreign analysts. Solid lines correspond to bad firm-years, and dashed lines correspond to good firm-years. The vertical black dashed line marks the enactment of the Hong Kong National Security Law (NSL) on June 30, 2020. Ninety-five percent confidence intervals are displayed for each point estimate. The forecast bias of a report is estimated by (analyst forecast EPS – actual EPS) / previous daily closing price. An analyst (analyst team) is identified as a local analyst if the analyst (first analyst) has a Chinese family name and as a foreign analyst if the analyst (first analyst) has a non-Chinese family name. A firm-year observation is classified as a bad year if the firm's sales growth is in the lowest tercile of our sample stocks that year. Our sample consists of firms that are continuously covered in the Hang Seng Index from 2018 to 2022.

Table I

Summary Statistics

This table provides summary statistics for all the variables used in the paper. Our sample consists of stocks that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We ended up with 7,672 unique analyst reports, with 342 unique analysts covering 40 unique stocks from 2018 to 2022. Analysts (analyst teams) are identified as local analysts if the analyst (first analyst) has a Chinese family name and as foreign analysts if the analyst (first analyst) has a non-Chinese name. A stock is identified as a central SOE if it is covered in the Hang Seng China Central SOEs Index. Performance = Bad Year = 1 if sales growth is in the lowest tercile of our sample stocks that year and 0 otherwise. In the appendix, we use an alternative measure of Bad Year, which equals 1 if the sales growth of the year is the worst in its last three years and 0 otherwise. Unadjusted forecast biases are estimated as (analyst forecast EPS – actual EPS) / previous daily closing price. The forecast is for the year-end EPS. We estimate adjusted forecast bias as (EPS model forecast * adjustment – actual EPS) / last closing price) if analysts report only their own model EPS, but no actual EPS. The adjustment factor used is the ratio between actual EPS and the analyst model EPS of the previous fiscal year. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed, and equals 0 if the analyst report came out before June 30, 2020. We counted the sentences with weak modal words (Loughran & McDonald, 2011) on the first page of each report and defined it as Weak Modal Sentence Count. The Weak Modal Sentence Ratio is the Weak Modal Sentence Count scaled by the number of sentences on the first page. CAR(0,1) is the two-day cumulative abnormal returns measured in the window of *t* to *t*+1, where *t* is the announcement day of the report.

Variable	Obs.	Mean	SD	P25	P50	P75
Analyst Level						
Local Analyst (Chinese name=1)	342	0.898	0.304	1.000	1.000	1.000
Stock Level						
Central SOE (Central SOE=1)	40	0.325	0.474	0.000	0.000	1.000
Stock-year Level						
Actual EPS	200	3.014	3.187	0.665	2.010	3.793
Sales Growth	200	0.038	0.205	–0.044	0.046	0.119
Performance (Bad Year = 1, Sales growth lowest 33%)	200	0.350	0.478	0.000	0.000	1.000
Performance (Bad Year =1, Sales growth worst in 3 years)	200	0.385	0.488	0.000	0.000	1.000
Report Level						
After (After NSL=1)	7,672	0.508	0.500	0.000	1.000	1.000
Unadjusted Forecast Bias (EPS forecast – actual EPS) / last closing price	7,562	0.004	0.034	–0.002	0.001	0.006
Forecast Bias = Adjusted Forecast Bias (EPS model forecast * adjustment – actual EPS) / last closing price)	7,562	0.003	0.020	–0.002	0.001	0.006
Weak Modal Sentence Count on the first page	7,672	1.484	1.689	0.000	1.000	2.000
Weak Modal Sentence Ratio on the first page	7,672	0.074	0.086	0.000	0.050	0.111
Response Time (Days of the first report from the last earnings announcement date)	3,256	2.078	5.253	0.000	0.000	1.000
CAR(0,1) of the report announcement	7,672	0.002	0.038	–0.016	0.001	0.021

Table II

Forecast Biases of Analysts and the National Security Law

This table presents how forecast biases by local and foreign analysts changed after the National Security Law. The regression model is specified as

$$Forecast\ Error_{a,s,y,t} = \alpha + \beta\ After_t \times Local_a \times Bad\ Year_{s,y} + \gamma_0\ After_t \times Local_a + \gamma_1\ After_t \times Bad\ Year_{s,y} + \gamma_2\ Local_a \times Bad\ Year_{s,y} + \gamma_3\ After_t + \gamma_4\ Local_a + \gamma_5\ Bad\ Year_{s,y} + \eta_s + \theta_a + \tau_q + \epsilon_{a,s,y,t}.$$

The dependent variable is forecast bias, which is estimated by (analyst adjusted forecast EPS – actual EPS) / previous daily closing price. We focus on the year-end EPS only. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed, and equals 0 if the analyst report came out before June 30, 2020. Analysts (analyst teams) are identified as local analysts if the analyst (first analyst) has a Chinese family name and as foreign analysts if the analyst (first analyst) has a non-Chinese name. A firm-year is identified as a bad year if its sales growth is in the lowest tercile of our sample stocks that year. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for analyst fixed effects, stock fixed effects, and quarter fixed effects in Columns 2 to 5. Standard errors are clustered by the first analyst and time (quarter), and p-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

	(1)	(2)	(3)	(4)	(5)
Variable			Forecast Bias		
After × Local × Bad Year	0.014***	0.009**	0.012***	0.012**	0.007**
	(0.008)	(0.014)	(0.008)	(0.012)	(0.034)
After × Local	0.001	0.004*	0.002	0.000	0.003
	(0.706)	(0.072)	(0.407)	(0.808)	(0.299)
After × Bad Year	–0.003	0.000	–0.001	–0.002	0.000
	(0.505)	(0.895)	(0.724)	(0.621)	(0.940)
Local × Bad Year	0.004	0.007*	0.005	0.003	0.005
	(0.123)	(0.078)	(0.201)	(0.184)	(0.236)
After	–0.001	–0.004*	–0.002		
	(0.360)	(0.098)	(0.323)		
Local	0.000	–0.006**		0.000	
	(0.982)	(0.045)		(0.720)	
Bad Year	–0.002	–0.004	–0.003	–0.001	–0.003
	(0.411)	(0.244)	(0.318)	(0.496)	(0.472)
Constant	0.002*	0.006**	0.002**	0.001	–0.000
	(0.086)	(0.021)	(0.039)	(0.118)	(0.931)
Stock F.E.	No	Yes	No	No	Yes
Analyst (Team) F.E.	No	No	Yes	No	Yes
Quarter F.E.	No	No	No	Yes	Yes
Observations	7,563	7,563	7,526	7,563	7,526
R-squared	0.051	0.241	0.224	0.073	0.350

Table III

Forecast Biases of Analysts and the National Security Law:

Central SOEs vs Non-central SOEs

This table presents how forecast biases by local and foreign analysts changed before and after the National Security Law across central SOEs and non-central SOEs. The regression model is as in Table II. Column 1 shows the results of Column 5 in Table II. The subsample results of Central SOEs are shown in Column 2, and the subsample results of Non-central SOEs are shown in Column 3. The dependent variable is forecast bias, which is estimated by (analyst-adjusted forecast EPS – actual EPS) / previous daily closing price. We focus on the year-end EPS only. A stock is identified as a central SOE if it is covered in the Hang Seng China Central SOEs Index. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed; and equals 0 if the analyst report came out before June 30, 2020. Analysts (analyst teams) are identified as local analysts if the (first) analyst has a Chinese family name and as foreign analysts if the (first) analyst has a non-Chinese name. A firm-year is identified as a bad year if its sales growth is in the lowest tercile of our sample stocks that year. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for analyst fixed effects, stock fixed effects, and quarter fixed effects in all columns. Standard errors are clustered by the first analyst and time (quarter), and p-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

	(1)	(2)	(3)
Variable		Forecast Bias	
After × Local × Bad Year	0.007**	0.022***	0.003
	(0.034)	(0.003)	(0.308)
After × Local	0.003	–0.002	0.005**
	(0.299)	(0.783)	(0.012)
After × Bad Year	0.000	–0.010	0.003***
	(0.940)	(0.406)	(0.006)
Local × Bad Year	0.005	0.004	0.004
	(0.236)	(0.483)	(0.253)
Bad Year	–0.003	–0.007	–0.000
	(0.472)	(0.353)	(0.931)
Constant	–0.000	0.001	0.000
	(0.931)	(0.765)	(0.964)
Sample	All	Central SOEs	Non-central SOEs
Stock F.E.	Yes	Yes	Yes
Analyst (Team) F.E.	Yes	Yes	Yes
Quarter F.E.	Yes	Yes	Yes
Observations	7,526	2,278	5,238
R-squared	0.350	0.427	0.365

Table IV

Language used by Analysts and the National Security Law:

Central SOEs vs Non-central SOEs

This table presents how the text in the reports by local and foreign analysts changed before and after the National Security Law. The regression model is analogous to Table II. The dependent variables are the number of weak modal sentences and the ratio of weak modal sentences on the first page. We counted the sentences with weak modal words (Loughran & McDonald, 2011) on the first page of each report and defined it as Weak Modal Sentence Count. The Weak Modal Sentence Ratio is the Weak Modal Sentence Count scaled by the number of sentences on the first page. The complete word list is provided in Appendix B. We report results for all stocks, Central SOEs, and Non-central SOEs for each variable. A stock is identified as a central SOE if it is covered in the Hang Seng China Central SOEs Index. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed, and 0 if the analyst report came out before June 30, 2020. Analysts (analyst teams) are identified as local analysts if the (first) analyst has a Chinese family name and as foreign analysts if the (first) analyst has a non-Chinese name. A firm-year is identified as a bad year if its sales growth is in the lowest tercile of our sample stocks that year. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for analyst fixed effects, stock fixed effects, and quarter fixed effects in all columns. Standard errors are clustered by the first analyst and time (quarter), and p-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	Weak Modal Sentence Count			Weak Modal Sentence Ratio		
After × Local × Bad Year	0.131	0.361	0.038	0.002	0.020*	–0.006
	(0.629)	(0.122)	(0.912)	(0.852)	(0.090)	(0.604)
After × Local	0.041	0.011	0.052	0.004	0.003	0.005
	(0.812)	(0.939)	(0.833)	(0.568)	(0.753)	(0.548)
After × Bad Year	–0.170	–0.812***	0.081	–0.007	–0.041***	0.007
	(0.434)	(0.001)	(0.773)	(0.380)	(0.001)	(0.442)
Local × Bad Year	–0.170	–0.640***	–0.002	–0.012	–0.042***	–0.001
	(0.523)	(0.000)	(0.996)	(0.324)	(0.003)	(0.955)
Bad Year	0.125	0.749***	–0.149	0.009	0.048***	–0.008
	(0.585)	(0.000)	(0.601)	(0.358)	(0.001)	(0.420)
Constant	1.482***	1.318***	1.559***	0.073***	0.064***	0.077***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Sample	All	Central SOE	Non-central SOEs	All	Central SOE	Non-central SOEs
Stock F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Analyst (Team) F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Quarter F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,633	2,318	5,303	7,633	2,318	5,303
R-squared	0.243	0.282	0.248	0.227	0.292	0.227

Table V

Response Time of Analysts and the National Security Law:

Central SOEs vs Non-central SOEs

This table presents how the response time by local and foreign analysts changed before and after the National Security Law. The regression model is specified as

$$Response\ Time_{a,s,y,t} = \alpha + \beta\ After_t \times Local_a \times Bad\ Year_{s,y-1} + \gamma_0\ After_t \times Local_a + \gamma_1\ After_t \times Bad\ Year_{s,y-1} + \gamma_2\ Local_a \times Bad\ Year_{s,y-1} + +\gamma_3\ Bad\ Year_{s,y-1} + \eta_s + \theta_a + \tau_q + \epsilon_{a,s,y,t}.$$

The dependent variables are the days between the last earnings announcement and the first follow-up report. We only include the first reports that come within a month after the earnings announcement. We report results for all stocks, Central SOEs, and Non-central SOEs subsamples. A stock is identified as a central SOE if it is covered in the Hang Seng China Central SOEs Index. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed, and 0 if the analyst report came out before June 30, 2020. Analysts (analyst teams) are identified as local analysts if the (first) analyst has a Chinese family name and as foreign analysts if the (first) analyst has a non-Chinese name. A firm-year is identified as a bad year if its sales growth is in the lowest tercile of our sample stocks that year. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for (first) analyst fixed effect, stock fixed effect, and quarter fixed effect (in Columns 2 and afterward). Standard errors are clustered by the first analyst and time (quarter), and p-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided),

	(1)	(2)	(3)
Variable	Days between the last earnings announcement and first follow-up report		
After × Local × Bad Year	–0.507	6.712**	–2.703**
	(0.795)	(0.027)	(0.026)
After × Local	–0.023	0.579**	–0.733
	(0.970)	(0.028)	(0.295)
After × Bad Year	0.997	–7.421**	3.750**
	(0.628)	(0.015)	(0.023)
Local × Bad Year	–1.029	–6.084*	0.408
	(0.497)	(0.056)	(0.436)
Bad Year	0.725	6.495**	–1.101
	(0.639)	(0.035)	(0.134)
Constant	1.998***	1.705***	2.298***
	(0.000)	(0.000)	(0.000)
Sample	All	Central SOEs	Non-central SOEs
Stock F.E.	Yes	Yes	Yes
Analyst (Team) F.E.	Yes	Yes	Yes
Quarter F.E.	Yes	Yes	Yes
Observations	3,295	1,286	1,991
R-squared	0.300	0.355	0.351

Table VI

Market Reactions to Analyst Reports and the National Security Law:

Central SOEs vs Non-central SOEs

This table presents how the market reactions to local and foreign analyst reports changed before and after the National Security Law. The regression model is specified as

$$CAR_{s,[t,t+1]} = \alpha + \beta_1\, After_t \times Local_a \times Buy_{a,s,t} + \beta_2 After_t \times Local_a \times Hold_{a,s,t} + \beta_3\, After_t \times Buy_{a,s,t} + \beta_4 After_t \times Hold_{a,s,t} + \beta_5 After_t \times Local_a + \beta_6\, Local_a \times Buy_{a,s,t} + \beta_7 Local_a \times Hold_{a,s,t} + \beta_8 Buy_{a,s,t} + \beta_9 Hold_{a,s,t} + \eta_s + \theta_a + \tau_q + \epsilon_{a,s,t}.$$

The dependent variable is the two-day cumulative abnormal return, CAR (0,1), measured in the window of t to t+1, where t is the day of the report. We report results for all stocks, Central SOEs, and Non-central SOEs subsamples. Buy equals 1 if the report's recommendation is Add/Buy/Outperform/Overweight, and Hold equals 1if the report's recommendation is Equalweight/Hold/Neutral. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed, and 0 if the analyst report came out before June 30, 2020. Analysts (analyst teams) are identified as local analysts if the (first) analyst has a Chinese family name and as foreign analysts if the (first) analyst has a non-Chinese name. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for (first) analyst fixed effect, stock fixed effect, and quarter fixed effect. Standard errors are clustered by the first analyst and time (quarter), and *p*-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

	(1)	(2)	(3)
Variable	Two-Day Cumulative Abnormal Return		
After × Local × Buy	–0.015*	–0.032*	–0.013
	(0.083)	(0.076)	(0.155)
After × Local × Hold	–0.009	–0.005	–0.019*
	(0.388)	(0.746)	(0.075)
After × Buy	0.009	0.029**	0.005
	(0.258)	(0.023)	(0.403)
After × Hold	0.003	0.003	0.012
	(0.714)	(0.749)	(0.174)
After × Local	0.009	0.025	0.008
	(0.244)	(0.159)	(0.338)
Local × Buy	0.009*	0.014	0.008*
	(0.061)	(0.327)	(0.066)
Local × Hold	0.000	0.000	0.001
	(0.955)	(0.997)	(0.852)
Buy	0.000	–0.003	0.001
	(0.940)	(0.816)	(0.664)
Hold	0.003	0.010	0.000
	(0.496)	(0.429)	(0.992)
Constant	–0.006*	–0.012**	–0.007*
	(0.066)	(0.048)	(0.074)
Sample	All	Central SOEs	Non-central SOEs
Stock F.E.	Yes	Yes	Yes
Analyst (Team) F.E.	Yes	Yes	Yes
Quarter F.E.	Yes	Yes	Yes
Observations	7,558	2,369	5,175
R-squared	0.085	0.157	0.087

APPENDIX A

The 40 Hang Seng stocks in the Hang Seng Index in our sample

This table shows market capitalization, trading volume, and the number of analysts following 40 firms in our sample at the beginning (2018) and the end (2022) of our sample.

Ticker	Company Name	Market Capitalization (Million USD)		Trading Volume (Million USD)		No. of Analysts	
		2018	2022	31 Jan 2018	30 Dec 2022	31 Jan 2018	30 Dec 2022
0001.HK	CK Hutchison Holdings Ltd	37,028.58	22,976.83	94.89	19.30	15	9
0002.HK	CLP Holdings Ltd	28,550.20	18,423.89	36.16	14.66	14	9
0003.HK	Hong Kong and China Gas Co Ltd	31,827.86	17,729.21	34.23	15.04	13	9
0005.HK	HSBC Holdings PLC	165,344.13	124,571.10	383.89	40.95	22	20
0006.HK	Power Assets Holdings Ltd	14,852.49	11,665.89	61.01	16.93	15	10
0011.HK	Hang Seng Bank Ltd	42,916.68	31,776.32	42.57	7.85	14	12
0012.HK	Henderson Land Development Co Ltd	21,917.79	16,893.24	36.00	7.40	22	18
0016.HK	Sun Hung Kai Properties Ltd	43,716.08	34,236.22	93.49	31.69	22	18
0017.HK	New World Development Co Ltd	12,927.41	8,121.52	38.35	8.24	18	15
0027.HK	Galaxy Entertainment Group Ltd	26,274.33	28,543.35	164.47	33.74	23	19
0066.HK	MTR Corp Ltd	32,298.64	32,838.88	27.00	8.09	11	11
0101.HK	Hang Lung Properties Ltd	8,568.72	8,791.69	34.68	6.27	21	16
0175.HK	Geely Automobile Holdings Ltd	15,812.80	14,667.94	149.71	64.58	36	37
0267.HK	CITIC Ltd	45,614.30	30,693.87	24.54	8.35	4	5
0288.HK	WH Group Ltd	11,299.64	7,458.76	107.48	7.14	18	17
0386.HK	China Petroleum & Chemical Corp	87,944.21	72,089.23	145.03	22.81	24	19
0388.HK	Hong Kong Exchanges and Clearing Ltd	36,186.33	54,742.89	602.63	102.82	19	30
0688.HK	China Overseas Land & Investment Ltd	37,632.87	28,870.56	86.76	45.78	29	28
0700.HK	Tencent Holdings Ltd	351,883.17	388,687.03	1,508.25	1,105.34	40	57
0762.HK	China Unicom Hong Kong Ltd	32,663.00	18,924.25	70.43	17.77	26	17
0823.HK	Link Real Estate Investment Trust	19,434.84	19,114.43	77.78	21.10	18	14
0857.HK	PetroChina Co Ltd	182,825.46	126,323.23	215.96	19.43	24	21
0883.HK	CNOOC Ltd	62,396.55	63,555.36	140.98	59.41	23	23
0939.HK	China Construction Bank Corp	207,758.17	158,860.63	752.82	123.80	27	25
0941.HK	China Mobile Ltd	197,002.83	144,436.75	250.66	119.61	25	20
1038.HK	CK Infrastructure Holdings Ltd	20,070.88	13,131.21	21.00	5.60	15	12
1044.HK	Hengan International Group Company Ltd	8,778.12	6,168.12	52.41	11.77	24	18
1109.HK	China Resources Land Ltd	26,513.03	32,643.71	63.62	53.18	26	26
1113.HK	CK Asset Holdings Ltd	27,023.16	22,181.88	81.80	16.46	19	15
1299.HK	AIA Group Ltd	100,113.30	130,940.44	223.54	197.32	0	30

1398.HK	Industrial and Commercial Bank of China Ltd	269,391.46	215,143.78	486.72	83.86	29	27
1928.HK	Sands China Ltd	35,391.01	26,840.85	154.46	66.99	24	18
1997.HK	Wharf Real Estate Investment Company Ltd	18,163.47	17,689.78	37.43	13.97	10	16
2007.HK	Country Garden Holdings Co Ltd	26,340.49	9,449.14	131.34	51.13	26	16
2318.HK	Ping An Insurance Group Co of China Ltd	154,148.18	123,074.00	833.95	210.34	25	29
2319.HK	China Mengniu Dairy Co Ltd	12,237.26	17,928.66	54.79	40.75	28	31
2382.HK	Sunny Optical Technology Group Co Ltd	9,747.91	13,040.85	114.92	35.47	40	36
2388.HK	BOC Hong Kong Holdings Ltd	39,285.95	36,012.03	87.57	18.26	17	14
2628.HK	China Life Insurance Co Ltd	77,564.97	124,838.04	451.60	87.89	28	30
3988.HK	Bank of China Ltd	146,753.58	127,522.56	390.59	64.76	27	24

APPENDIX B

Weak Modal Words (Loughran & McDonald 2011)

almost, apparently, appeared, appearing, appears, conceivable, could, depend, depended, depending, depends, may, maybe, might, nearly, occasionally, perhaps, possible, possibly, seldom, seldomly, sometimes, somewhat, suggest, suggests, uncertain, uncertainly. respectively

APPENDIX C

Analyst Reports with no Actual EPS Forecast

This table is a snapshot from a UBS report predicting the EPS of China Overseas Land & Investment Ltd. The EPS are forecasted using UBS's own model without revealing the actual EPS of the firms. The stock's actual diluted EPS in 2017 was 3.72, while the analyst model EPS was 3.13, as shown in the table below. We apply the ratio 1.19 (3.72/3.13) to scale up the analyst model forecast of 3.46 in 2018. This is our adjustment.

Highlights (HK$m)	12/15	12/16	12/17	12/18E	12/19E	12/20E	12/21E	12/22E
Revenues	160,339	158,717	163,972	188,445	254,530	318,027	386,126	452,857
EBIT (UBS)	41,469	40,205	50,637	61,975	78,876	92,534	104,776	123,563
Net earnings (UBS)	28,900	31,371	34,260	37,909	48,379	56,431	64,899	76,226
EPS (UBS, diluted) (HK$)	3.13	3.08	3.13	3.46	4.42	5.15	5.92	6.96
DPS (HK$)	0.92	0.77	0.80	1.04	1.32	1.55	1.78	2.09
Net (debt) / cash	(78,244)	(16,659)	(74,188)	(94,678)	(108,256)	(120,063)	(116,119)	(116,240)
Profitability/valuation	**12/15**	**12/16**	**12/17**	**12/18E**	**12/19E**	**12/20E**	**12/21E**	**12/22E**
EBIT margin %	25.9	25.3	30.9	32.9	31.0	29.1	27.1	27.3
ROIC (EBIT) %	26.4	21.7	25.9	24.7	26.8	27.2	27.3	28.9
EV/EBITDA (core) x	7.0	5.7	6.4	6.6	5.4	4.7	4.1	3.4
P/E (UBS, diluted) x	8.2	7.8	7.8	8.8	6.9	5.9	5.2	4.4
Equity FCF (UBS) yield %	14.6	23.0	(17.7)	(2.2)	0.3	1.5	7.0	6.8
Net dividend yield %	3.6	3.2	3.3	3.4	4.3	5.1	5.8	6.8

Source: Company accounts, Thomson Reuters, UBS estimates. Metrics marked as (UBS) have had analyst adjustments applied. Valuations: based on an average share price that year, (E): based on a share price of HK$30.55 on 19 Mar 2019 22:36 HKT

APPENDIX D

A. Hypotheses on Self-censorship, COVID-19, and Patriotism

This table presents hypotheses and testable predictions on forecast biases, language usage, and response times. If the enactment of the NSL has no impact on analysts' behaviors (null hypothesis), there would be no changes in analysts' forecast biases, usage of weak modal words, and response times. If local analysts self-censor their opinion on the poorly-performing stocks, their forecast biases will be tilted upward compared to foreign analysts, they will use more weak modal words, and their response time will be longer. Alternatively, if COVID-19 is asymmetrically affecting local and foreign analysts, a local analyst who knows less (more) about the impact of COVID-19 will have larger (smaller) errors on earnings, but there should be no systematic bias in the first moment. A local analyst who knows less (more) about the impact of COVID-19 will also use more (fewer) weak modal words, and have longer (shorter) response time due to their less (more) information. Finally, if local analysts are becoming more patriotic after the NSL, their forecast bias will be tilted upward, while they will use fewer weak modal words and have shorter response times to earnings news. Our main empirical results are in line with the self-censorship hypothesis.

Hypotheses	Testable Predictions		
	Forecast Bias	Weak Modal Words	Response Time
Null	Same as before	Same as before	Same as before
Self-censorship of Locals	Locals: More upward	Locals: More	Locals: Longer
Alternative 1: COVID-19			
Locals know *less* about the COVID impact on firms	Locals: No systematic bias	Locals: More	Locals: Longer
Locals know *more* about the COVID impact on firms	Locals: No systematic bias	Locals: Fewer	Locals: Shorter
Alternative 2: Patriotism of Locals	Locals: More upward	Locals: Fewer	Locals: Shorter

APPENDIX D (Continued)

B. Forecast Biases of Analysts and the National Security Law: COVID-19 Sensitive Firms vs COVID-19 Non-Sensitive Firms

This table presents how forecast biases by local and foreign analysts changed before and after the National Security Law across COVID-19 sensitive firms vs COVID-19 non-sensitive firms. The regression model is specified in Table II. Column 1 shows the results of Column 5 in Table II. The subsample results of COVID-19 sensitive firms are shown in Column 2 and Column 4, and the subsample results of COVID-19 non-sensitive firms are shown in Column 3 and Column 5. We measure this sensitivity using cumulative stock returns in windows around two key COVID-19 shocks: Hong Kong's border closure and the sharp Hang Seng Index decline in early 2020. The Hong Kong border closure is measured from January 27, 2020 (the ban on Hubei travelers) to February 8, 2020 (mandatory 14-day quarantine for all mainland arrivals), during which time the Hong Kong Government closed most of its land borders following medical strikes (February 4-5, 2020). The Hang Seng Index crash is measured as two-month (42 working days) returns ending March 27, 2020 (the fourth week of March, recording 21,696 during the week to its lowest point since 2016). The dependent variable is forecast bias, which is estimated by (analyst-adjusted forecast EPS – actual EPS) / previous daily closing price. We focus on the year-end EPS only. A stock is identified as a central SOE if it is covered in the Hang Seng China Central SOEs Index. The variable, After, equals 1 if the analyst report came out on or after June 30, 2020, when the National Security Law was passed; and equals 0 if the analyst report came out before June 30, 2020. Analysts (analyst teams) are identified as local analysts if the (first) analyst has a Chinese family name and as foreign analysts if the (first) analyst has a non-Chinese name. A firm-year is identified as a bad year if its sales growth is in the lowest tercile of our sample stocks that year. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for analyst fixed effects, stock fixed effects, and quarter fixed effects in all columns. Standard errors are clustered by the first analyst and time (quarter), and p-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

	(1)	(2)	(3)	(4)	(5)
Variable			Forecast Bias		
After × Local × Bad Year	0.007**	0.008*	0.008**	0.008*	0.010
	(0.034)	(0.084)	(0.031)	(0.099)	(0.133)
After × Local	0.003	0.004	–0.003	0.003	0.004
	(0.299)	(0.308)	(0.195)	(0.201)	(0.402)
After × Bad Year	0.000	–0.000	–0.002	–0.003	–0.001
	(0.940)	(1.000)	(0.549)	(0.426)	(0.869)
Local × Bad Year	0.005	0.008	–0.001	–0.000	0.013**
	(0.236)	(0.184)	(0.809)	(0.970)	(0.014)
Bad Year	–0.003	–0.003	–0.000	0.005	–0.012**
	(0.472)	(0.558)	(0.975)	(0.304)	(0.013)
Constant	–0.000	–0.002	0.005***	–0.001	0.000
	(0.931)	(0.217)	(0.000)	(0.302)	(0.859)
Sample	All	COVID-19 sensitive	COVID-19 non-sensitive	COVID-19 sensitive	COVID-19 non-sensitive
Sensitivity measured by	-	Border Closure	Border Closure	Market Crash	Market Crash
Stock F.E.	Yes	Yes	Yes	Yes	Yes
Analyst (Team) F.E.	Yes	Yes	Yes	Yes	Yes
Quarter F.E.	Yes	Yes	Yes	Yes	Yes
Observations	7,526	3,909	3,594	3,215	4,294
R-squared	0.350	0.377	0.448	0.326	0.409

APPENDIX D (Continued)

C. Robustness Checks

This table presents three sets of robustness tests on the main results. In Columns 1 to 3, we restrict the sample to a balanced panel where an analyst covers the same stock before and after the NSL. In Columns 4 to 6, we use unadjusted forecast biases as the dependent variable. Unadjusted forecast bias = (EPS forecast – actual EPS) / last closing price. In Columns 7 to 9, we define a firm's bad year as a firm-year whose sales growth is the worst in its last three years. All other specifications are the same as in Table II. Our sample consists of firms that are continuously covered in the Hang Seng Index from January 2018 to December 2022. We control for (first) analyst fixed effects, stock fixed effects, and quarter fixed effects. Standard errors are clustered by the first analyst and time (quarter), and p-values are shown in parentheses underneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable	Forecast Bias (Balanced Panel)			Unadjusted Forecast Bias			Forecast Bias (Bad=Sales growth worst in 5 years)		
After × Local × Bad Year	0.006**	0.020***	0.003	0.011*	0.021***	0.008	0.007	0.023***	–0.003
	(0.042)	(0.001)	(0.366)	(0.070)	(0.009)	(0.190)	(0.188)	(0.000)	(0.561)
After × Local	0.004	–0.001	0.004**	0.001	–0.003	0.002	0.003	–0.006	0.007**
	(0.246)	(0.875)	(0.013)	(0.887)	(0.658)	(0.696)	(0.358)	(0.364)	(0.033)
After × Bad Year	0.001	–0.010	0.002	0.002	–0.008	0.004*	–0.004	–0.020**	0.003
	(0.729)	(0.374)	(0.114)	(0.546)	(0.489)	(0.057)	(0.419)	(0.025)	(0.434)
Local × Bad Year	0.006	0.006	0.003	0.002	0.005	–0.002	0.003	0.001	0.006
	(0.226)	(0.391)	(0.310)	(0.723)	(0.397)	(0.745)	(0.521)	(0.903)	(0.278)
Bad Year	–0.003	–0.007	–0.001	–0.003	–0.008	0.001	–0.000	0.003	–0.002
	(0.433)	(0.444)	(0.789)	(0.482)	(0.299)	(0.789)	(0.918)	(0.561)	(0.608)
Constant	–0.000	0.000	0.000	0.002	0.000	0.002	0.000	0.001	–0.000
	(0.765)	(0.992)	(0.766)	(0.458)	(0.880)	(0.249)	(0.749)	(0.622)	(0.771)
Sample	All	Central SOE	Non-central SOEs	All	Central SOE	Non-central SOEs	All	Central SOE	Non-central SOEs
Stock F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Analyst (Team) F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,775	1,768	4,007	7,521	2,278	5,233	7,521	2,278	5,233
R-squared	0.332	0.391	0.351	0.206	0.392	0.260	0.340	0.420	0.354