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Catching the Political Leader's Signals: Economic Policy Uncertainty and Firm Investment in China¹

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Abstract

This study uses a text dataset of the Chinese President's speeches and reports from November 2012 to December 2021 to construct an original economic policy uncertainty (EPU) index: President Xi Jinping's EPU (XiEPU). XiEPU moderately correlates with a previous study's representative EPU, showing notably different peaks. Our index spiked in April 2016 after a sharp decline in the Chinese stock market index and late 2020, reflecting the global COVID-19 pandemic. Using firm-level panel data, we find that a higher value of XiEPU is associated with a lower investment rate at the quarterly level and has a larger and longer-lasting effect than the existing China EPUs. Moreover, there are noteworthy heterogeneous effects among firms and periods. Specifically, we find a stronger effect of XiEPU on manufacturing sectors, a weaker effect on state-owned enterprises, and a stronger effect in the second term of Xi Jinping's presidential tenure after November 2017.

Keywords: Economic Policy Uncertainty, firm investment, policy maker, Xi Jinping, China

JEL classification: D80, E66, G18, P16

Abbreviations—BBD: Baker–Bloom–Davis; CCP: the Chinese Communist Party; EPU: Economic policy uncertainty; HL: Huang–Luk; SOE: State-owned enterprise; XiEPU: Xi Jinping's EPU.

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1. Introduction

In recent years, there have been significant concerns about policy uncertainty in China and the rest of the world. Many studies have measured economic policy uncertainty (EPU) to assess its impact on economic activity. Baker et al. (2016) developed an EPU index using a dictionary method that counted keyword-searched newspaper articles in the United States and 12 other countries (hereafter referred to as BBD). They showed that the EPU negatively affects firm investment, employment, and other macroeconomic variables, such as gross domestic product (GDP), industrial production, and unemployment rates. Many recent studies have confirmed the generally negative effects of EPU on various economic activities (Altig et al., 2020).² These results are generally consistent with theoretical predictions (Bernanke, 1983; Bloom, 2009).

China has been the second largest economy in the world since 2010, and the BBD for China measures EPU using a Hong Kong-based English newspaper, *South China Morning Post*, as its data source. This baseline has allowed progress in developing BBD-like indices using different data sources and keywords (Davis et al., 2019; Huang and Luk, 2020). Such studies have used readily available newspaper articles to measure EPU, empirically suggesting that it negatively affects China's economy (Wang et al., 2014; Chen et al., 2018; Huang and Luk, 2000). Nevertheless, some studies have found no significant or positive effects (Arouri and Roubaud, 2016; He et al., 2020).

When considering the impacts of economic policy uncertainty, we believe that more emphasis should be placed on decision-makers' statements rather than on newspapers in general. Several studies on former US President Donald Trump have shown that his tweets impacted global stock markets and specific company valuations (Bianchi et al., 2019; Burggraf et al., 2020; Brans and Scholtens, 2020). Xi Jinping has been the most important decision maker in China in the recent decade (Economy 2018; Shambaugh, 2021); he has served as General Secretary of the Chinese Communist Party (CCP) since November 15, 2012, and the President of the People's Republic of China since March 14, 2013. China's political leaders have long held strong authority in economic governance, which has become more pronounced under the Xi Jinping administration. It is widely accepted among China observers that Xi Jinping has played a decisive role in the policy process, with some going so far as to refer to him as "the Chairman of everything" (The Economist, 2016; Hernández, 2017; Allison, 2017).

This study seeks to understand how the tone of President Xi's statements has changed during his tenure and how those statements and tone changes have impacted the Chinese economy. Unlike

² See Kang et al. (2014) for an early work using BBD's EPU as an explanatory variable of firm-level investment decisions, and see Al-Thaqeb and Algharabali (2019) for a more general literature review.

President Trump, President Xi Jinping does not use social networking services like Twitter or Weibo. Instead, the Chinese state media extensively and intensively reports his statements, political meeting notes, diplomatic visit reports, and other activity reports at least daily.

This study uses a text dataset of the Chinese president's speeches and reports from November 2012 to December 2021 to construct an original EPU for Xi Jinping (XiEPU). It moderately correlates with the BBDEPU (China EPU measured by BBD) while showing notably different peaks, spiking in April 2016 and January 2017, possibly reflecting macroeconomic uncertainty, including a sharp decline in the stock market index, and in late 2020 due to a deepening global risk of COVID-19. We argue that XiEPU is a proxy index of President Xi and his administration's perceptions of economic uncertainty and a signal for related uncertainties, containing important information regarding midlong-term risks and policy directions facing Chinese firms in particular. In this sense, the XiEPU is conceptually different than existing EPUs, i.e., indicators of economic policy uncertainty commonly circulated in the major media regardless of the author or source. Our data source, the state-run *People's Daily*, contains its own institutional bias in choosing which speeches to publish. Still, it is essential to note that even though different media may involve particular biases, most Chinese firms take these speeches as Xi's direct message to Chinese society and the economy, regardless of any political motivations involved in the editing process.

This paper examines the impact of the XiEPU on the real economy. After validating the XiEPU, we estimate the firm-level investment decision function and find a strong negative effect of XiEPU at the quarterly level. Considering the magnitude of this uncertainty effect, a 100% increase in XiEPU leads to a 24.5% decrease in the investment rate. The results are qualitatively robust in alternative specifications and support previous theoretical and empirical research. In short, Chinese firms indeed respond to decision-makers' signals. Furthermore, there are significant heterogeneous effects of XiEPU among Chinese firms by sector, ownership, and period.

This research contributes to two strands of the literature. First, we extend and refine the literature on the EPU, focusing on political leaders' remarks on the economy while adopting conventional estimation methods. Although extant EPU studies use newspaper articles, politicians' speech data provide a compelling alternative examination. Second, the literature on the Chinese political economy has drawn much attention to the effect on various economic outcomes of political factors, such as political connection at the firm level (Li et al., 2008; Wu et al., 2012), administrative reforms (Ang, 2016), factional conflict, or patron-client networks within the party (Shih, 2007; Jiang and Zhang, 2020). Thus far, few attempts have been made to systematically analyze how an individual leader's

(changing) policy preference and rhetoric impact the real economy. This analytic void looms as the decision-making process has been centralized to an unprecedented level under the leadership of President Xi Jinping. Our study quantitatively demonstrates how the Chinese president's words influence the economy, filling the void mentioned above.

The remainder of this paper is organized as follows. Section 2 reviews previous EPU studies, while Section 3 describes measuring XiEPU and the validation test method. Section 4 presents the impact of XiEPU on capital investment of Chinese listed firms, and Section 5 concludes this paper.

2. Related literature

2.1. EPU studies

BBD applies a dictionary-based method to measure EPU. Specifically, it constructs monthly EPU series based on "a monthly count of articles that contain the following trio of terms: 'uncertainty' or 'uncertain;' 'economic' or 'economy;' and one of the following policy terms: 'Congress', 'deficit', 'Federal Reserve', 'legislation', 'regulation', or 'White House' (including variants like 'uncertainties', 'regulatory', or 'the Fed')" (Baker et al., 2016, p.1599). The number of corresponding articles for each month is divided by the total number of monthly articles, and the EPU index is scaled to have a mean of 100 for the examined period. Empirical studies using EPUs have shown that firms generally act more conservatively when EPUs are higher (Al–Thaqeb and Algharabali, 2019). For example, US firms reduced investments by 32% during the global financial crisis, with remarkably more substantial effects depending on government procurements and sectors with high irreversible investments (Gulen and Ion, 2016).

These results are consistent with theoretical expectations. When planning an investment, firms must weigh the cost of postponing their investment against the value of new information gained by waiting; hence, increased uncertainty incentivizes firms to delay investment (Bernanke, 1983). Another explanation states that heightened uncertainty changes the employment (e.g., new hires, retentions, and firings) and investment thresholds (e.g., new investment, status quo measures, and reduced investment), resulting in temporary declines in both. Notably, these items recover sharply when such uncertainty is resolved (Bloom 2009). Additionally, the EPU has become widely used by financial and information institutions, including central banks; the BBD's website lists 27 country indices as of January 2022.³

³ See "Economic Policy Uncertainty" [https://www.policyuncertainty.com/]. Accessed June 10, 2022.

2.2. EPU for China

EPU research is ongoing in China; besides BBD calculations, Davis et al. (2019) and Huang and Luk (2020) each measured EPU using Chinese newspapers and unique keyword searches (see Table 1). Figure 1 shows the existing China EPUs.

BBD indicates that the EPU has peaked several times since the People's Republic of China was founded in 1949, especially during the political turmoil in the 1950s and the Cultural Revolution in the 1960s; some values exceeded 400. The EPU has remained relatively stable in the early 2000s, surging to around 200 before and after the 2008 global financial crisis. In the 2010s, as shown in Figure 1, China's EPUs have risen notably since 2018, primarily reflecting the intensification of US–China trade frictions and the impact of COVID-19 in 2020.

	D.	D		(a) Economic	(b) Policy	(c) Uncertainty	(d) Additional
Paper	Data	Period	iviethod	keywords	keywords	keywords	keywords
Baker et al (2016, 2022)	South China Morning Post	1995- (monthly updated)	Dictionary (three categories plus China keyword)	economic or economy	{{policy or spending or budget or political or "interest rates" or reform} and {government or Beijing or authorities}) or tax or regulation or regulatory or "central bank" or "People's Bank of China" or PBOC or deficit or WTO	uncertainty or uncertain	China, Chinese
Davis et al (2019)	People's Daily and Guangming Daily	October 1949- 1978, 1979-1999, 2000-December 2018	Dictionary (three categories, modified policy keywords)	经济, 商业	财政, 货币, 证监会, 银监会, 财政部, 人 民银行, 国家发改委, 开放, 改革, 商务 部, 法律, 法规, 税收, 国债, 政府债务, 央行, 外经贸部, 关税, 政府赤字	不确定,不明确,不明朗,未 明,难料,难以预计,难以估 计,难以预测,难以预料,未 知	N.A.
Huang and Luk (2020)	Beijing Youth Daily, Guangzhou Daily, Jiefang Daily, People's Daily Overseas Edition, Shanghai Morning Post, Southern Metropolis Daily, The Beijing News, Today Evening Post, Wen Hui Daily, and Yangcheng Evening News	January 2000- October 2018	Dictionary (three categories, modified key words)	经济, 金融	政策,制度,体制,战略,措施,规章,规 例,条例,政治,执政,政府,政委,国务 院,人大,人民代表大会,中央,国家主 席,总书记,国家领导人,总理,改革,整 改,整治,规管,监管,财政,税,人民银 行,央行,赤字,利率	不确定,不明确, 波动, 震荡, 动荡,不稳, 未明,不明朗,不 清晰, 未清晰, 难料, 难以预 料, 难以预测, 难以预测, 难以预计, 难 以估计, 无法预料, 无法预测, 无法预计, 无法估计, 不可预 料, 不可预测,不可预计,不 可估计	N.A.

Table 1. Dictionary keywords from previous studies

Source: Authors' compilation



Figure 1. Chinese EPUs from previous studies

Note: BBD (SCMP) refers the EPU constructed by BBD based on *South China Morning Post*; Davis (PD and GM) refers the EPU from Davis et al (2019) based on *People's Daily* and *Guangmin Ribao*; BBD-Davis Hybrid is an averaged EPU based on BBD (SCMP) and Davis (PD and GM); HL (10 papers) refers the baseline EPU developed by Huang and Luk (2020). Source: "Economic Policy Uncertainty" HP (<u>https://www.policyuncertainty.com/index.html</u>) for BBD, Davis, and Hybrid methods. "EPU IN Mainland China" HP by Dr. Sheung Kan Luk

(https://economicpolicyuncertaintyinchina.weebly.com/) for HL.

Empirical studies have described the impact of China's EPU on macroeconomic and firm behaviors, generally indicating that a higher EPU negatively impacts certain economic variables; the report of He et al. (2020) is an exception (Table 2). By combining the BBD index and stock market data, Chen et al. (2018) found that one standard deviation of an EPU increase is associated with a 1.2% decrease in expected monthly returns. Huang and Luk (2020) performed a structural vector autoregression using macroeconomic variables, finding that one standard deviation of an EPU increase led to an immediate equity reduction of approximately 3%. He et al. (2020) focused on the impact of EPU on innovation activities using listed company data to estimate the firm-level knowledge production function. They found that firms increased their number of patent applications during higher EPU periods, suggesting that they attempted to differentiate under economic

pressures. ⁴ Concerning heterogeneous effects of EPU, Liu et al. (2021) found that political connection mitigates the negative effect. Besides existing approaches, Liu and Zhang (2020) adopted a quasi-experimental approach focused on sudden governmental policy changes, finding that increasing EPU leads to negative investment effects, whereas state-owned enterprises (SOEs) are unaffected.

Paper	Time coverage	EPU	Dependent variable(s)	Results
Wang et al (2014)	2003Q1 -2012Q1 (quarterly)	BBD	Firm investment	Negative effect
Arouri and Roubaud (2016)	January 2003 - January 2014 (monthly)	BBD	Stock market return, stock market volatility	No significant effect
Wang et al (2017)	2002 - 2012 (yearly)	Turnover of Mayor or Party Secretary	R&D investment	Negative effect, especially for politically connected companies
Chen et al (2018)	January 1996 - December 2013 (monthly)	BBD	Stock market return	Negative effect
Huang and Luk (2020)	January 2000 - October 2018 (monthly)	HL	Equity price, output, and umemployment rate	Negative effects on outcome varibles
He et al (2020)	2000 - 2017 (yearly)	HL	Patent application	Positive effect
Liu and Zhang (2020)	2013Q1-2017Q3 (quarterly)	Quasi-experimental design	Firm investment	Negative effect for private firms, no significant effect for SOEs
Liu et al (2021)	2004Q1-2017Q4	BBD	Firm investment	Political connectins mitigate the risk of uncertainty

Table 2. Previous research on the impact of EPUs in China

Source: Authors' compilation

2.3. Statements of political leaders and their impact on economies

Scholars have scrutinized the impact of political leaders' statements on economic activities, particularly concerning the effects of US presidents' words on national and global economies. For example, drawing on monthly time-series measures constructed from US presidential remarks, Wood (2007, Ch.6) explored whether and to what extent "presidential rhetoric" shapes consumer behaviors

⁴ Bloom (2007) partially explained this mechanism, revealing mixed results concerning the effect of uncertainty on research and development expenditures.

in the US and macroeconomic performance. Dybowski and Adammer (2018) investigated when and how the U.S. president communicates his tax policy to the public, finding that optimistic policy statements stimulate consumption, investment, and output. Furthermore, Burggraf et al. (2020) analyzed more than 3,200 tweets related to US–China trade frictions based on President Trump's tweets, finding a negative impact on Standard-and-Poors-500 index returns and a positive impact on the Chicago Board Options Exchange's Volatility Index. Bianchi et al. (2019) focused on President Trump's tweets that criticized the Federal Reserve and examined whether they influenced central bank-related variables, finding that President Trump's tweets attacking Federal Reserve policy had negative and statistically significant effects on the Fed Funds futures index, with the magnitude growing from horizon to horizon.

For China, the political leaders' statements have historically provided a critical source of information about the general economic outlook and potential policy change (Coase and Wang, 2012; Lampton, 2014; Shambaugh, 2021). This trend appears to have strengthened since Xi Jinping became general secretary of the CCP and grasped all the levers of power in the party and the state (The Economist, 2016). As of 2017, he chaired 8 central policy coordinating bodies, known as Leading Small Groups, including the one on Comprehensively Deepening Reform, which reportedly became a "shadow State Council," issuing significant policies relating to economic affairs (Shirk, 2018, pp. 23–4). Xi's increased role in economic policymaking has drawn much attention because the Premier of the State Council has traditionally been the practical decision maker for economic policy in China (Economy, 2018; Naughton, 2016).

Furthermore, it is essential to note that Xi Jinping's control over the policy process appears to have increased as he started his second term as the paramount leader. At the Sixth Plenary Session of the 18th Central Committee of the CCP in October 2016, Xi became the "core" of the Party leadership. Following this, at the October 2017 Party Congress, Xi put his personal philosophy into the party constitution (only Mao had done so while still in power), cemented his control over the selection of new Politburo Standing Committee members, and unveiled a new leadership lineup that conspicuously lacked a clear successor. The abolition of term limits in March 2018 was only the latest, albeit most glaring, in a series of steps to enhance his power (Fewsmith, 2021). Given President Xi's consolidation and expansion of power over the entire party-state organization, it can be assumed that China's political and economic actors pay more attention to Xi's speeches than any other government officials in China. Nevertheless, we still have very little evidence to validate the system-wide effects of Xi's power consolidation, that is, how Xi has changed the collective behavior patterns of concerned

actors. This study attempts to quantify Xi's impact on the real economy by focusing on presidential remarks on the economy and its impacts on firm-level behaviors.

3. Measuring XiEPU

3.1. Text data

We obtained text data from the *Database of Xi Jinping's Important Speech Series (Xi Jinping Xilie Zhongyao Jianghua Shujuku, 习近平系列重要讲话数据库*),⁵ a web-based source of Xi Jinping-related speeches and reports. The articles began on November 15, 2012, the day Xi Jinping took office as the General Secretary of the CCP. The material is mainly from the Chinese state media, including the *People's Daily* (domestic and international editions), *Xinhua News Agency*, local newspapers, and several state or CCP publications, such as *Qiushi*. The articles include speeches, activity reports, field visits, press conferences, meetings, telegrams (e.g., ceremonial), and others. Although the data contain Xi Jinping's statements and activities, they also contain important notes and reports from CCP and central government meetings.

The precleaning dataset contained 11,718 articles from November 15, 2012, to December 31, 2021, including 17,054,592 Chinese characters and an average of 1,455 characters per article. We dropped duplicated articles, typically those published by both *People's Daily* and the *Xinhua News Agency*, and excessively long or short articles (>30,000 and <200 characters, respectively). Figure 2 describes the dataset in our analysis; the total number of articles is 7,416, the total number of characters is 13,227,569, and an average of 1,783 characters per article.⁶

There are advantages and limitations to using the chosen data. As all articles are publicly available and are published mainly by major state-run news agencies, the dataset is not fundamentally different from national and local newspaper articles used by Davis et al. (2019) and Huang and Luk (2020). Nevertheless, this study's advantage is that the dataset contains many specific statements made by the highest policymaker; compared with existing newspaper articles, this dataset contains a high concentration of outreach by the supreme decision maker. Conversely, there are several limitations. First, the number of articles is relatively small compared with global or national

⁵ The URL of the database: <u>http://jhsjk.people.cn/</u>

⁶ One point worth noting is that the number of articles related to Xi Jinping has declined slightly over the years. A potential reason for this decline is the Eight-point Regulation of the Centre, first announced on 4 December 2012, which points out the need for compressing the number of reports, word count, and length related to the CCP Central Politburo.

newspaper datasets, which typically exceed 100 thousand. Second, our dataset is built directly from state-owned media; thus, it may suffer media bias issues (Yuan, 2016; Qin et al., 2018). Indeed, our dataset is based on information published by state-owned media, as represented by the *People's Daily*; therefore, the text inevitably included preferential messages about the Chinese government, the CCP, and economic perceptions. Additionally, the data are limited to publicly available information transcribed by state media. It cannot be denied that the data contain a certain amount of propaganda; however, this issue does not detract from the value of our empirical analysis, as most Chinese firms react based on the same publicly available media. Indeed, SOEs and those with political connections can obtain early and highly accurate signals from the regime center. Thus, the XiEPU is expected to have heterogeneous effects on SOEs and politically connected firms, which we statistically test.





3.2. XiEPU construction

We construct XiEPU, an original EPU index based on *the Database of Xi Jinping's Important Speech Series*, using existing representative dictionary keywords from Davis et al. (2019) and Huang and Luk (2020). Table 1 lists the keywords. In our construction, we used the categories of "economy" and "uncertainty" proposed by Davis et al. (2019) and Huang and Luk (2020), whereas the "policy" category is not used, as all articles related to Xi Jinping are naturally and inevitably policy related in the Chinese contexts. We then constructed an index, as described in the BBD paper (i.e., the monthly number of corresponding articles is divided by the total number of articles per month and scaled to one standard deviation and a mean of 100) (Baker et al., 2016, pp. 1598–1599). The Appendix provides some example articles. For example, an article entitled, "Xi Jinping accepts interview with the Wall Street Journal (*Xi Jinping Jieshou Huaerjie Ribao Caifang*)" from September 22, 2015, contained both "economic" and "uncertainty" keywords in terms of the approach of Huang and Luk (2020). Such articles signal the increasing probability of policy change because the policy maker publicly mentions and recognizes the existence of economic uncertainties.

Figure 3 presents the constructed XiEPUs using data from 2012 to 2021. XiEPU-BBD includes results based on BBD keywords, and XiEPU-HL is based on the method of Huang and Luk (2020). Additionally, we calculated a XiEPU-Hybrid that used keywords from both BBD and Huang–Luk (HL). As shown, several spikes are observed. The first occurred in April 2016, reaching 314. The 2015–2016 period coincides with macroeconomic and financial uncertainties in China. One possible reason for this spike is high asset outflows. Foreign exchange reserves at the end of January 2016 stood at 3.2 trillion US dollars (USD), a decline of more than 500 billion USD from the beginning of 2015. Furthermore, stock prices fell sharply during the same period, with the Shanghai stock market index dropping in January 2016. The higher XiEPU in April 2016 may be a reaction to these macroeconomic uncertainties. Following this peak, the next spike appeared in January 2017, reaching 340, when the macroeconomic policy's emphasis shifted from stimulating the economy to exterminating the housing bubble. Around the October 2016 National Day holiday, many local governments, including Shenzhen and Shanghai, tightened restrictions on home purchases.

The higher values in the second half of 2020 can be interpreted as a policy maker's reflection on the significant deterioration of the domestic and global economy caused by the COVID-19 pandemic. Notably, XiEPU did not react during intensified trade friction between the US and China, beginning in 2018. This is likely due to Xi Jinping's restraint in expressing risk perceptions in his external communications. Regarding the COVID-19 pandemic in 2020, XiEPU rose in November 2020, reaching 379, and in January 2021, reaching 386, the highest monthly value throughout the examined period. These expressions may be considered a late reaction as an emergency response, given that the most severe urban quarantine measures were taken in China, especially in Wuhan, during the first quarter of the year; however, these XiEPU peaks may reflect the fact that the highest policy maker publicly recognizes and publicly states the existence of deepening economic uncertainties. The question is what kind of an impact these seminal peaks have. As financial data for listed firms are unavailable after 2020, our following regression analyses examine the impact of XiEPU on business

investment until the end of 2019; we do not directly analyze the impact of the pandemic shock since January 2020.



Figure 3. The three XiEPUs (November 2012–December 2021) Source: Authors' calculations

After aggregating each index at the quarterly level, Figures 4 and 5 show the relationship between EPUs from previous studies and our constructed XiEPUs, as well as a stock market volatility index. BBDEPU and XiEPU coincide with several peaks, and their correlation coefficient is 0.37. Conversely, no clear relationship exists between HLEPU (Huang–Luk economic policy uncertainty) (Huang and Luk, 2020) and XiEPU indices, and their correlation coefficients are as low as 0.08. Another indicator to compare is a volatility index for the Chinese market (VXFXICLS), which represents the market's expectations for volatility in stock price over the subsequent 30 days. XiEPU and BBDEPU have lower or negative correlations with VXFXICLS, while HLEPU strongly correlates with VXFXICLS (R=0.49). These relations imply that HLEPU captures a more short-term and financial uncertainty, whereas BBDEPU and XiEPU capture qualitatively different signals; however, we can confirm that XiEPU shows a moderate correlation with a representative China EPU, BBDEPU.



Figure 4. BBD, HL, Volatility Index, and XiEPU (Quarterly, Q4 2012– Q4 2021) Note: BBDEPU is a hybrid index constructed by Baker et al. (2013)'s EPU which uses Hong Kongbased SCMP, and Davis et al. (2019)'s EPU which uses mainland news sources. The index is available at "Economic Policy Uncertainty" [https://www.policyuncertainty.com/], accessed June 10, 2022. VXFXICLS (volatility index for the Chinese stock market) is obtained from the Chicago Board Options Exchange (2022). All indices are re-standardized

Source: Authors' calculations



Figure 5. Correlation matrix of EPUs and Volatility Index (Quarterly, Q4 2012–Q4 2021) Note: All indices are re-standardized. Source: Same with Figure 4

4. Policy uncertainty and firm investment

We use quarterly firm-level data on Chinese listed firms to investigate whether policy uncertainty captured by XiEPU matters for economic outcomes (capital investment rate in this study). This section first develops four testable hypotheses and then presents data, specifications, and empirical results.

4.1. Testable hypotheses

The real options theory predicts that uncertainty may reduce current investment in irreversible capital through the "wait-and-see" mechanism (Bernanke, 1983; Bloom et al., 2007). When the cost of investment is irreversible, economic uncertainty reduces the investment because firms are incentivized to avoid taking action until the uncertainty is resolved. Using BBDEPU, Baker et al. (2016) and Gulen and Ion (2016) documented a strong negative relationship between policy uncertainty and firm-level capital investment. Similarly, our central hypothesis (H1) states that an increase in XiEPU negatively affects firm investment in China, implying that Chinese listed firms obtain notable signals and perceive policy uncertainty from President Xi's speeches, thus postponing their investment.

(H1) The estimated coefficient of XiEPU is negative, implying that policy uncertainty is associated with reduced investment.

Besides the baseline estimation, we test the heterogeneous effects of EPU on firm investments by sector, ownership, and period. First, we consider sectoral heterogeneity. Using an original survey of Japanese firms, Morikawa (2016) shows that manufacturing and service firms perceive policy uncertainty differently and are affected by different policy uncertainties. According to Liu and Zhang (2020)'s calculation using China's 2012 national input–output table, asset reversibility is generally higher in tertiary sectors while manufacturing sectors tend to be lower. In other words, higher asset irreversibility exists in manufacturing firms: they are 1.28% and 0.95%, respectively, in the case of Chinese listed firms from 2012 to 2019. As an extension of the aforementioned theoretical predictions, we expect that manufacturing firms are more sensitive to uncertainties.

(H2) The estimated coefficient of the interaction term between XiEPU and the manufacturing dummy is negative, implying that the manufacturing sector is more sensitive to XiEPU than other sectors due

⁷ Liu and Zhang (2020, p.6) present asset reversibility for 57 industries.

to higher asset irreversibility.

The second heterogeneity pertains to ownership. As well-examined in the literature on the Chinese economy, SOEs have better access to financing (Huang et al., 2016) and tend to have a stronger influence on policy than private firms (Zhang, 2018). SOEs also have better access to policymaker discussions, including various CCP meetings. This political accessibility gives SOEs more advanced access to political signaling than private firms and foreign-invested firms. As mentioned, we built our XiEPU using publicly available information. If SOEs obtain early signals from the regime center through exclusive connections, they are expected to be less sensitive to XiEPU than other firms (Liu et al., 2021). Nevertheless, another mechanism could cause SOEs to be more sensitive to XiEPU than other firms. According to Kutlina–Dimitrova (2018), SOEs account for about 85% of the government procurement market in China. As SOEs are relatively more dependent on government procurement, they may respond more strongly when policymakers' economic uncertainty perceptions become severe. We test these competing hypotheses as follows:

(H3a) The estimated coefficient of the interaction term between XiEPU and SOEs dummy is positive, implying that XiEPU affects SOEs less due to political connections.

(H3b) The estimated coefficient of the interaction term between XiEPU and SOEs dummy is negative, implying that XiEPU affects SOEs more because of their high dependency on government procurement.

We employ an additional estimation as a robustness check to empirically test the former mechanism, using political connection variables explained later.

Third, we consider the different effects by period. President Xi entered his second term after the fourth quarter of 2017, and it is widely believed that his authority strengthened, as discussed in Sections 2–3. To test this observation, we set H4 as follows:

(H4) The estimated coefficient of the interaction term between XiEPU and the second term dummy is negative, implying the effect of XiEPU is stronger in President Xi's second term (Q4 2017–Q4 2019) than in his first term (Q4 2012–Q3 2017).

4.2. Data and specification

Our dataset includes comprehensive information about Chinese firms listed in the A-share segment of the Shanghai and Shenzhen stock exchanges. We obtain quarterly accounting data from the China Stock Market & Accounting Research Database (CSMAR) from 2012 to 2019. Since 2003, China Securities Regulatory Commission (CSRC) has required all publicly listed firms to publish

quarterly reports.⁸ We start our analysis with Q4 2012 because our XiEPU index starts from the same quarter. Our data includes listed firms in manufacturing and non-manufacturing sectors, and we exclude the financial sector because its investment behavior is quite different from other sectors.

The calculated XiEPU is used to estimate the impact on firm investment behaviors. As a baseline, we adopt a model used by Gulen and Ion (2016) as follows:

$$\frac{Inv_{i,t}}{TA_{i,t-1}} = \alpha_i + \beta_1 \log (EPU_{t-1}) + \beta_2 TQ_{i,t-1} + \beta_3 \frac{CF_{i,t}}{TA_{i,t-1}} + \beta_4 SG_{i,t} + \delta GR_t + QRT_t + \varepsilon_{it},$$
(1)

where *i* indexes firms and *t* indexes calendar quarters. The dependent variable $\frac{Inv_{i,t}}{TA_{i,t-1}}$ is the firm-level capital investment rate, where $Inv_{i,t}$ is firm *i*'s capital investment during period *t*, normalized by total assets (TA) during the previous period t-1 (henceforth *I/K*). Capital investment is the sum of cash paid for acquiring fixed, intangible, and other long-term assets in the quarterly statement of cash flows. We controlled for several financial and macroeconomic factors, such as Tobin's Q (*TQ*), operating cash flow (*CF*), sales growth (*SG*), and gross domestic product growth rate (*GR*). Specifically, *TQ* is measured as the market value of equity plus the book value of assets minus the book value of equity plus deferred taxes, all divided by the book value of assets. *CF* is operating cash flow scaled by total assets. *SG* is calculated as the year-on-year growth in quarterly sales, controlling for investment opportunities. GR is the year-on-year real GDP growth rate. Additionally, α_t is the firm fixed effects, and *QRT* contains a set of quarterly dummy variables to control for capital investment seasonality. We cannot control for time fixed effects as they are collinear with our key variable EPU index. Following Gulen and Ion (2016), standard errors are clustered at the quarter and firm level to correct for potential cross-sectional and serial correlation in the error term. Our results are robust to standard errors clustered at the year-quarter level (see Table A1 in the Appendix).

Our key variable, EPU_t , is the arithmetic average of the XiEPU (Hybrid) index over three months. According to Hypothesis 1, we expect the economic policy uncertainty coefficient, β_1 , to be negative. For Hypotheses 2–4, XiEPU interaction terms are added to Equation (1) to test for heterogeneities. Specifically, we added heterogeneity dummies (HET_i): manufacturing firm dummy, SOE dummy, and Xi second term dummy.

⁸ Previous studies also use quarterly financial statements and examine the impacts of economic policy uncertainty on firm investment in the US (Gulen and Ion, 2013) and China (Wang et al., 2014).

To conduct a validation test, we also estimated Equation (1) using existing EPUs to compare their effects with XiEPU. Specifically, we used the BBDEPU and HLEPU.

As we adopt firm-level panel estimations, missing values and outliers may cause econometrical issues. First, we exclude the listed firms with abnormal financial conditions which received "Special Treatment" (ST shares) according to the stock listing rules. To be included in our estimation, a firm must have no missing observations in Equation (1) for at least 2 years (eight quarters). To reduce the impact of outliers, we drop the top and bottom 1% values of continuous variables in Equation (1), apart from EPU. After these cleaning procedures, we obtain 3,279 unique firms with 74,364 firm-quarter observations. Our sample period is from Q4 2012 to Q4 2019.

Table 3 shows the descriptive statistics for the firm-level data used in the investment estimation equation. In Panel A, the average capital investment ratio is 1.24%, and the standard deviation in the sample period is 1.41%. In our sample, 66% of observations are manufacturing firms, and 35% are SOE firms. To measure firms' political connections, we create two variables. The first, GOV, is a dummy variable equal to one if any of the firm's board members have experience working as a government official. The second measure, CCP, is equal to one if any of the firm's board members are CCP members. The share of politically connections firms (observations) through GOV is about 14%, whereas that of CCP is 54%. In Panel B, we test whether there is a significant difference in investment ratio in the high and low XiEPU periods. Using the median value of the XiEPU index, we divide the high XiEPU period from the low XiEPU period; we then conduct a *t*-test for testing the mean and a Wilcoxon *z*-test for testing the median. There are significant differences in investment ratio is relatively lower during the high uncertainty period.

Variable	Defination	Obs	Mean	Std. Dev.	Min	Max
Xiepu	EPU index, Xi Jinping	74,364	94.14	28.22	31.69	163.46
HLEPU	EPU index, HL method	74,364	137.27	17.91	105.16	194.91
BBDEPU	EPU index, BBD method, Hybrid	74,364	301.04	175.48	102.48	621.82
I/K	Capital investment/ lagged total assets (%)	73,667	1.24	1.41	0.00	8.53
Tobin	Tobin's Q	74,364	2.63	1.80	0.85	12.49
Cash flow	Cash flow/ lagged total assets (%)	74,364	1.64	5.63	-16.62	20.35
Sales growth	Year-on-year growth in quarterly sales (%)	59,748	13.34	34.37	-76.81	100.00
GDP growth	Year-on-year quarterly growth in real GDP (%)	74,364	6.35	2.81	-6.90	8.10
Manuf.	Manufacturing firm dummy	74,364	0.66	0.47	0	1
SOE	SOE dummy	73,938	0.35	0.48	0	1
Term2	Xi Jinping's second term dummy	74,364	0.41	0.49	0	1
	GOV dummy equal to one if any of the board members					
GOV	of the firm has working experience as a government official	74,364	0.14	0.34	0	1
ССР	CCP dummy equal to one if any of the board members of the firm is Chinese Communist Party member	74,364	0.54	0.50	0	1

Panel B: I/K in high XIEPU period vs. low XIEPU period

Difference	<i>t</i> -test (<i>p</i> value)	z-score (p value)
(high - low)	-5.4724 (0.0000)	-5.601 (0.0000)

Table 3. Descriptive statistics of firm investment analysis

Source: Authors' calculations

4.3. Empirical results

Table 4 presents the baseline estimation results. Models 1–3 provide estimations with only the EPUs as explanatory variables, whereas Models 4–6 include additional control variables. All estimation equations controlled for firm and quarter fixed effects. In the estimation results of Models 4–6, control variables, such as Tobin's Q, cash flow, sales growth rate, and GDP growth rate, generally show their expected signs and are statistically significant at the 1% level. These results are consistent with previous studies (Gulen and Ion, 2016).

The XiEPU coefficient is of interest to us and is negative and statistically significant at the 1% level; this finding supports Hypothesis 1. Taking Model 4 as an example and controlling for other factors, the coefficient of -0.304 suggests that a doubling in the level of XiEPU is associated with an approximately 24.5% (=-0.304/1.24) decrease in firms' investment rate. This result is in line with standard theoretical predictions of investment-under-uncertainty models (Bernanke, 1983; Bloom et al., 2007). This result is also consistent with the estimated policy uncertainty-investment relationship literature (Baker et al., 2016; Gulen and Ion, 2016). Our estimate is also quantitatively similar to that

of Gulen and Ion (2016), which shows that when policy uncertainty (BBD) doubles, investment in the next quarter declines by 0.168 standard deviations (equivalent to 24.1% of the average investment level in their sample). Notably, the estimated coefficients of HLEPU and BBDEPU report negative effects in Models 5–6; however, their absolute values are smaller than that of XiEPU, implying a stronger explanatory power of XiEPU.

I/K	(1)	(2)	(3)	(4)	(5)	(6)
L.logXiEPU	-0.292***			-0.304***		
	(0.0159)			(0.0179)		
L.logHLEPU		0.0499			-0.152***	
		(0.0346)			(0.0397)	
L.logBBDEPU			-0.270***			-0.260***
			(0.00919)			(0.0116)
L.tobin				0.0381***	0.0358***	0.00248
				(0.00520)	(0.00522)	(0.00532)
cashflow				0.00888***	0.00918***	0.0108***
				(0.00136)	(0.00136)	(0.00136)
sales_growth				0.00104***	0.000941***	0.00108***
				(0.000160)	(0.000160)	(0.000159)
gdp_growth				0.0297***	0.0319***	0.0103***
				(0.00156)	(0.00162)	(0.00166)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
N	67443	67443	67443	55026	55026	55026
R-sq	0.386	0.382	0.394	0.396	0.392	0.400

Table 4. Baseline results of firm investment estimation

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level quarterly investment rate in all regressions.

Table 5 shows the results of hypothesis testing related to heterogeneity (H2–H4). According to the results, which include the interaction term between the manufacturing firm dummy and XiEPU in Models 1–3, manufacturing firms tend to be more affected by EPUs in Models 1–2. Model 1 shows that when XiEPU doubles, manufacturing firms reduce their investment rate by roughly 24.7% ([-0.292-0.0137]/1.24), though the estimated coefficient of the interaction term in Model 1 is not

statistically significant. During our sample period, manufacturing firms generally have higher investment rates (1.32%) than non-manufacturing firms (1.08%). Therefore, compared with the non-manufacturing sector, the irreversibility of investments likely causes the effect of XiEPU in the manufacturing sector. When comparing existing EPUs related to China, no heterogeneity across sectors exists in the HLEPU, whereas the BBDEPU detected an effect approximate to that of the XiEPU. This result supports Hypothesis 2.

Table 5 also examines ownership heterogeneities in Models 4–6. The interaction term between the SOE dummy and XiEPU in Model 4 is positive and significant, indicating that the impact of XiEPU is smaller for SOEs than non-SOEs. We estimate that a doubling in the level of XiEPU is associated with an average decline in quarterly investment rates of approximately 18.1% ([-0.340+0.115]/1.24) relative to the average SOE investment rate but about 27.4% for non-SOEs. This finding supports Hypothesis 3a.

Similarly, Models 7–9 in Table 5 present the results of the heterogeneous effect per period. As assumed, the results are negative and significant for the interaction term of President Xi's second period and XiEPU. A stronger effect is reported for the later period of the president's term, consistent with the patterns of XiEPU in Figure 3. This result also supports Hypothesis 4.

I/K	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	HET =	Manufacturing	dummy	HE	ET = SOE dum	my	HE	T = Term2 dur	nmy
L.logXiEPU	-0.292***			-0.340***			-0.221***		
	(0.0305)			(0.0222)			(0.0184)		
L.logXiEPU*HET	-0.0137			0.115***			-0.0335***		
	(0.0366)			(0.0345)	-0.165***		(0.00305)		
L.logHLEPU		-0.179***			(0.0486)			-0.456***	
		(0.0594)			0.0444			(0.0426)	
L.logHLEPU*HET		0.0480			(0.0692)			-0.0560***	
		(0.0713)				-0.316***		(0.00305)	
L.logBBDEPU			-0.238***			(0.0141)			-0.240***
			(0.0189)			0.166***			(0.0134)
L.logBBDEPU*HET			-0.0261			(0.0207)			-0.00630**
			(0.0217)			(0.0199)			(0.00269)
L.tobin	0.0380***	0.0363***	0.00523	0.0363***	0.0347***	-0.000820	0.0160***	0.000177	-0.000415
	(0.00496)	(0.00499)	(0.00508)	(0.00493)	(0.00496)	(0.00509)	(0.00564)	(0.00556)	(0.00556)
cashflow	0.00839***	0.00870***	0.0101***	0.00840***	0.00876***	0.0103***	0.00937***	0.0104***	0.0108***
	(0.00130)	(0.00130)	(0.00130)	(0.00130)	(0.00131)	(0.00130)	(0.00136)	(0.00136)	(0.00136)
sales_growth	0.00108***	0.000985***	0.00112***	0.00107***	0.000978***	0.00104***	0.00100***	0.000900***	0.00106***
	(0.000155)	(0.000155)	(0.000155)	(0.000156)	(0.000156)	(0.000156)	(0.000160)	(0.000160)	(0.000160)
gdp_growth	0.0292***	0.0313***	0.00986***	0.0296***	0.0316***	0.0104***	0.0230***	0.0217***	0.00981***
	(0.00151)	(0.00156)	(0.00160)	(0.00152)	(0.00157)	(0.00160)	(0.00159)	(0.00160)	(0.00167)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	55026	55026	55026	54752	54752	54752	55026	55026	55026
R-sq	0.396	0.392	0.400	0.396	0.392	0.401	0.397	0.397	0.400

Table 5. Heterogeneous effects by sector, ownership, and period

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is firm-level quarterly investment rate in all regressions. Manufacturing dummies and SOE dummies are included in Models 1–3 and 4–6, respectively; however, they are dropped because the firm fixed effects are controlled in all regressions.

4.4. Placebo test

In Table 6, we consider the impact of XiEPU on sales as a placebo test. We regress quarterly firm-level sales growth rates on XiEPU. While the real options literature highlights how uncertainty suppresses demand for input factors (capital investment) with adjustment costs, the short-run impact on output should be smaller according to this class of theories (Baker et al., 2016). Consistent with this prediction, the estimated effect of XiEPU is positive but not statistically significant, while the control variables remain positive and significant. Our results suggest that an increase in XiEPU is associated with a significant decline in the investment rate, but the association with sales growth is muted. This result is also largely consistent with existing EPU indices.

Sales growth rate	(1)	(2)	(3)	(4)	(5)	(6)
L.logXiEPU	0.0293			0.0197		
	(0.0281)			(0.0296)		
L.logHLEPU		0.101*			0.0193	
		(0.0555)			(0.0594)	
L.logBBDEPU			0.00483			0.0335*
			(0.0145)			(0.0173)
L.tobin				0.0161**	0.0159*	0.0208**
				(0.00817)	(0.00819)	(0.00860)
cashflow				0.00754***	0.00750***	0.00732**
				(0.00286)	(0.00286)	(0.00286)
gdp_growth				0.00643**	0.00642**	0.00898***
				(0.00262)	(0.00264)	(0.00282)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
N	39992	39992	39992	39992	39992	39992
R-sq	0.285	0.285	0.285	0.285	0.285	0.285

Table 6. Placebo test: Sales growth rate

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level year-on-year quarterly sales growth rate in all regressions.

4.5. Discussion

The effects of EPUs are not necessarily one-period lag effects (Gulen and Ion 2016). Table A2 in the Appendix shows the results containing the two-period lag effects. Model 4 shows a negative

effect over two periods for XiEPU. Models 5 and 6 show the results of the other EPUs, which reveal only negative effects for the first period lag of the other EPUs. Compared with the other EPUs, XiEPU has a longer-lasting effect on investment rates. Our sample period is relatively short (36 quarters), so we do not consider more lags here; however, XiEPU affects investments at least four quarters into the future, and the results are available upon request.

Our main results in Table 4 and additional results in Table A2 consider the dynamics in firmlevel investment rate responses to our XiEPU measure. To investigate the contemporaneous relationship between policy uncertainty and firm-level investment rates, following Baker et al. (2016), we add the changes of XiEPU (Δ logXiEPU) in Equation (1) and re-run the regressions. Results are presented in Table A3 in the Appendix. Δ logXiEPU has a significant negative coefficient of -0.241(Model 4), which is quantitatively similar to Δ logBBDEPU (-0.290). Importantly, our main results of lagged XiEPU remain robust.

These results are qualitatively similar to previous studies that found that increased uncertainty leads to decreased business investment. Moreover, the results of heterogeneity estimates indicated strong effects of XiEPU on manufacturing and non-SOEs, and the effects of XiEPU are stronger in the latter period of President Xi's term. Our estimation results show that SOEs tend to be less affected by XiEPU relative to private firms; we interpret that SOEs have more favorable access to information related to policymaking. In other words, political connections may mitigate the adverse effects of EPUs on firms relying on government procurement. The EPU effects are qualitatively smaller for SOEs resonates with Liu et al. (2021), who found that politically connected firms mitigate the adverse effects of the EPU. Although the Chinese economy has become more market-oriented since the 1980s, the Party retains strong authority over economic matters. Thus, we assumed that listed firms observe policymakers' statements as an essential source of strategic decisions. Using detailed information on listed firms' board members, we formally examine the effect of political connections on the uncertainty-investment relationship. Table A4 in the Appendix presents the estimation results. Model 1 shows that the coefficient of the interaction term between GOV and XiEPU is positive (not significant); however, the coefficient of the interaction term between CCP and XiEPU in Model 4 is positive and statistically significant at the 1% level.⁹ Notably, the estimated coefficient of the CCP

⁹ The coefficient of GOV interaction is not statistically significant, probably because (1) as a part of the anticorruption campaign, all government officials (including current officials and those who have retired in the last three years) are prohibited from working in private firms after 2013, and (2) our sample period starts from Q4 2012.

interaction is quantitatively similar to that of the SOE interaction in Table 5; this result again supports our Hypothesis 3a. Our results suggest that policy uncertainty affects politically connected firms less. In other words, political connections, especially being CCP members, may help Chinese firms access reliable political and policy information, mitigating the impact of policy uncertainty.

This analysis is vital to the relationship between extant EPUs and the newly created XiEPU. Overall, XiEPU is as influential as (or in some cases stronger than) existing China-related EPUs. Appendix Table A5 compares using the same estimation equation, showing that the extant EPUs (BBD) have a larger impact on absolute value, whereas the XiEPUs negatively impact firm investment rates. Figure 4 shows that the XiEPU has several peaks that differ from the China-related EPUs. The results in Appendix Table A5 suggest that both existing EPU and XiEPU have significant effects; although existing EPU indices reflect general economic policy uncertainty in China, the XiEPU also contains meaningful signals for Chinese firms.

5. Conclusion

This paper constructs an EPU index (XiEPU) using President Xi Jinping's text data and analyzes the impact of policy uncertainty on firms' investment behaviors. The constructed XiEPU shows a reasonable correlation at the quarterly level with extant representative EPUs for China (BBDEPU); conversely, a low correlation is found for the EPU calculated by a previous study (HLEPU). Some unique timing spikes in the XiEPU are observed in April 2016, January 2017, and late 2020, reflecting macroeconomic uncertainties, including stock market decline and the global pandemic. Our analysis of firm-level data shows that the XiEPU negatively impacts firms' investment behaviors, and the magnitude implies a 24.5% decrease in investment rates when the XiEPU doubles from the baseline estimation. Compared with other China-related EPUs, our results suggest that XiEPU has a stronger and longer-lasting effect on firm investment in China. Furthermore, heterogeneity estimates of the different impacts by industry sector, ownership, and subperiod show stronger effects for manufacturing, non-SOEs, and later in Mr. Xi's presidency.

Compared to existing EPUs, our analysis reveals that the XiEPU exhibits both homogeneity and heterogeneity with existing EPUs. The homogeneity is evident because XiEPU uses a data source similar to existing studies: data from newspaper articles in China. In this respect, the XiEPU is an index that captures uncertainty in a broad sense, as existing EPUs do. At the same time, the XiEPU contains additional information (as revealed in Table A5). We think XiEPU has the signaling effect as the information is directly transmitted by the top policymaker acknowledging or mentioning issues.

Our analysis suggests that the XiEPU contains information on Chinese firms' important medium- and long-term risks and policy directions.

Our empirical results have several implications for the field of EPU and the Chinese political economy. First, EPU effects have been extensively tested via general newspaper article analyses. This paper uses textual data directly from the most crucial decision maker to construct an index of uncertainty that better reflects the perceptions of CCP leadership. We show that it is possible to construct an index that can directly influence or reflect firms' behaviors and broader economic activities. Second, our empirical results provide not only direct but more nuanced evidence to the conventional belief in the political economy literature regarding the connection between political leaders' remarks and economic outcomes. Our analysis shows that Chinese firms react to the information directly sent from the President to a greater extent than those generally emanated from the state media; additionally, there is significant variation in the intensity of the reaction, especially ownership structures. Moreover, we demonstrate that the tone of a presidential speech affects firms' investment decisions more strongly in the later period of Xi's tenure. This result is particularly significant since it gives quantitative evidence to some recent claims regarding Xi's power consolidation and its system-wide consequences. The signals from the President, backed by his increasing personal authority over the system, ring true to the economy.

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Appendixes

Appendix Note: Examples of EPU articles based on Xi Jinping text (Underlined words are corresponding keywords)

Example 1. "Xi Jinping accepts interview with the Wall Street Journal" (Xinhua News Agency 2015) Original Chinese text

在回答关于中国全面深化改革等问题的提问时,习近平指出,当前,中国<u>经济</u>体制 改革的重要方向就是使市场在资源配置中起决定性作用和更好发挥政府作用。简言之, 就是"看不见的手"和"看得见的手"都要用好。

股市涨跌有其自身的运行规律,一般情况下政府不干预。政府的职责是维护公开、 公平、公正的市场秩序,保护投资者特别是中小投资者的合法权益,促进股市长期稳定 发展,防止发生大面积恐慌。前段时间,中国股市出现了异常<u>波动</u>,这主要是由于前期 上涨过高过快以及国际市场大幅<u>波动</u>等因素引起的。为避免发生系统性风险,中国政府 采取了一些措施,遏制了股市的恐慌情绪,避免了一次系统性风险。

English translation

In response to a question about China's comprehensive deepening reform, Xi pointed out that the important direction of China's <u>economic</u> system reform is to make the market play a decisive role in the allocation of resources and to better play the role of the government. In short, both the "invisible hand" and "visible hand" should be used well.

The stock market has its own laws of operation; generally, the government does not intervene. The government's responsibility is to maintain an open, fair and just market order, protect the legitimate rights and interests of investors, especially small and medium-sized investors, and promote the long-term stable development of the stock market to prevent widespread panic. Some time ago, the Chinese stock market experienced unusual volatility, mainly caused by factors such as too high and too fast a rise in the previous period and sharp fluctuations in international markets. The Chinese government took measures to curb panic in the stock market to avoid systemic risk.

Example 2. "Xi Jinping Attends Opening Ceremony of the Fifth Foreign Ministers' Meeting of the Conference on Interaction and Confidence-building Measures in Asia and Delivers Important Speech" (CPC News 2016)

Original Chinese text

习近平指出,今天的亚洲,和平稳定是大势所趋,发展繁荣是民心所向。亚洲<u>经济</u>领跑全球,区域合作和一体化进程方兴未艾,亚洲在全球发展全局中的战略地位不断上 升。同时,亚洲局部<u>动荡</u>冲突等传统安全问题仍然存在,恐怖主义等非传统安全威胁日 益突出,区域安全合作亟待加强。

English translation

Xi Jinping pointed out that in today's Asia, peace and stability are the general trends, and development and prosperity are the people's desires. Asia's <u>economy</u> is leading the world, regional cooperation and integration processes are flourishing, and Asia's strategic position in

global development is rising. At the same time, traditional security issues such as local <u>instability</u> and conflict still exist in Asia, non-traditional security threats such as terrorism are becoming increasingly prominent, and regional security cooperation needs strengthening.

Example 3. "Xi Jinping's keynote speech at the APEC Business Leaders' Dialogue" (Xinhua News Agency 2020) Original Chinese text

在全球共抗新冠肺炎疫情、探索世界<u>经济</u>复苏道路的重要时刻,很高兴通过视频 方式同大家见面。

人类正处在一个特殊的历史时期。新冠肺炎疫情全球大流行,推动世界百年未有 之大变局加速演进。世界<u>经济</u>深度衰退,全球产业链、供应链遭受冲击,治理赤字、信 任赤字、发展赤字、和平赤字仍在扩大。单边主义、保护主义、霸凌行径上升,经济全 球化遭遇逆流,加剧了世界经济中的风险和不确定性。

English translation

At this important moment when the world is fighting the new pneumonia epidemic together and exploring the path of world <u>economic</u> recovery, I am glad to meet with you by video.

Humanity is at a pivotal time in history. The global pandemic of Newcastle pneumonia has accelerated the evolution of a significant global change that has not been seen in a century. The world <u>economy</u> is in deep recession, the global industrial chain and supply chain have suffered shocks, and the governance deficit, trust deficit, development deficit, and peace deficit are still expanding. Unilateralism, protectionism, and bullying practices are on the rise, and economic globalization is experiencing headwinds, exacerbating the risks and <u>uncertainties</u> in the world <u>economy</u>.

I/K	(1)	(2)	(3)	(4)	(5)	(6)
L.logXiEPU	-0.292***			-0.304***		
	(0.0789)			(0.0741)		
L.logHLEPU		0.0499			-0.152	
		(0.200)			(0.197)	
L.logBBDEPU			-0.270***			-0.260***
			(0.0320)			(0.0380)
L.tobin				0.0381***	0.0358**	0.00248
				(0.0128)	(0.0149)	(0.0119)
cashflow				0.00888***	0.00918***	0.0108***
				(0.00163)	(0.00172)	(0.00182)
sales_growth				0.00104***	0.000941***	0.00108***
				(0.000184)	(0.000186)	(0.000152)
gdp_growth				0.0297***	0.0319***	0.0103*
				(0.00712)	(0.00909)	(0.00573)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Ν	67443	67443	67443	55026	55026	55026
R-sq	0.386	0.382	0.394	0.396	0.392	0.400

Table A1. Clustering at the year-quarter level

Note: Standard errors are clustered at the year-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level quarterly investment rate in all regressions.

I/K	(1)	(2)	(3)	(4)	(5)	(6)
L.logXiEPU	-0.240***			-0.268***		
	(0.0172)			(0.0196)		
L2.logXiEPU	-0.229***			-0.231***		
	(0.0166)			(0.0183)		
L.logHLEPU		-0.00537			-0.225***	
		(0.0396)			(0.0465)	
L2.logHLEPU		-0.0501			0.00652	
		(0.0371)			(0.0432)	
L.logBBDEPU			-0.252***			-0.249***
			(0.0196)			(0.0225)
L2.logBBDEPU			-0.0148			-0.0144
			(0.0201)			(0.0237)
L.tobin				0.0392***	0.0456***	0.00896
				(0.00568)	(0.00588)	(0.00583)
cashflow				0.00962***	0.00972***	0.0113***
				(0.00140)	(0.00141)	(0.00140)
sales_growth				0.00108***	0.000903***	0.00104***
				(0.000168)	(0.000168)	(0.000167)
gdp_growth				0.0274***	0.0273***	0.00525***
				(0.00158)	(0.00169)	(0.00174)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
N	61705	61705	61705	50868	50868	50868
R-sq	0.400	0.395	0.407	0.406	0.402	0.410

Table A2. Additional estimates with two-quarterly lag effects

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level quarterly investment rate in all regressions.

I/K	(1)	(2)	(3)	(4)	(5)	(6)
L.logXiEPU	-0.352***			-0.546***		
	(0.0223)			(0.0267)		
∆logXiEPU	-0.0589***			-0.241***		
	(0.0131)			(0.0167)		
L.logHLEPU		0.00902			-0.224***	
		(0.0417)			(0.0469)	
∆logHLEPU		-0.0672*			-0.122***	
		(0.0389)			(0.0447)	
L.logBBDEPU			-0.285***			-0.268***
			(0.00947)			(0.0117)
∆logBBDEPU			-0.211***			-0.290***
			(0.0185)			(0.0209)
L.tobin				0.0358***	0.0378***	0.0103*
				(0.00517)	(0.00530)	(0.00535)
cashflow				0.00880***	0.00920***	0.0106***
				(0.00136)	(0.00136)	(0.00136)
sales_growth				0.00117***	0.000920***	0.00103***
				(0.000159)	(0.000160)	(0.000159)
gdp_growth				0.0416***	0.0316***	0.0145***
				(0.00192)	(0.00162)	(0.00170)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Ν	67443	67443	67443	55026	55026	55026
R-sq	0.386	0.382	0.395	0.398	0.392	0.402

Table A3. Additional estimates with the changes of XiEPU

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level quarterly investment rate in all regressions.

I/K	(1)	(2)	(3)	(4)	(5)	(6)
	PC =Gover	nment working	experience	P	C = CCP memb	ber
L.logXiEPU	-0.308***			-0.379***		
	(0.0193)			(0.0287)		
L.logXiEPU*PC	0.0262			0.131***		
	(0.0473)			(0.0358)		
L.logHLEPU		-0.148***			-0.106*	
		(0.0422)			(0.0601)	
L.logHLEPU*PC		-0.0292			-0.0872	
		(0.105)			(0.0725)	
L.logBBDEPU			-0.264***			-0.364***
			(0.0124)			(0.0177)
L.logBBDEPU*PC			0.0239			0.177***
			(0.0304)			(0.0212)
L.tobin	0.0378***	0.0361***	0.00471	0.0374***	0.0358***	0.000611
	(0.00495)	(0.00498)	(0.00508)	(0.00496)	(0.00499)	(0.00507)
cashflow	0.00840***	0.00872***	0.0102***	0.00841***	0.00874***	0.0105***
	(0.00130)	(0.00130)	(0.00130)	(0.00130)	(0.00131)	(0.00130)
sales_growth	0.00108***	0.000984***	0.00112***	0.00107***	0.000981***	0.00105***
	(0.000155)	(0.000155)	(0.000155)	(0.000155)	(0.000155)	(0.000154)
gdp_growth	0.0292***	0.0313***	0.00984***	0.0294***	0.0311***	0.00983***
	(0.00151)	(0.00156)	(0.00160)	(0.00151)	(0.00156)	(0.00160)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
N	55026	55026	55026	55026	55026	55026
R-sq	0.396	0.392	0.4	0.396	0.392	0.401

Table A4. Political connections and the effects of XiEPU

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level quarterly investment rate in all regressions. GOV dummies and CCP dummies are included in Models 1–3 and 4–6, respectively.

I/K	(1)	(2)	(3)	(4)
L.logXiEPU	-0.292***	-0.121***	-0.302***	-0.157***
	(0.0159)	(0.0164)	(0.0179)	(0.0187)
L.logHLEPU	0.0637*		-0.125***	
	(0.0347)		(0.0399)	
L.logBBDEPU		-0.247***		-0.222***
		(0.00948)		(0.0122)
L.tobin			0.0389***	0.00892*
			(0.00521)	(0.00539)
cashflow			0.00902***	0.0104***
			(0.00136)	(0.00136)
sales_growth			0.00103***	0.00110***
			(0.000160)	(0.000159)
gdp_growth			0.0307***	0.0128***
			(0.00161)	(0.00168)
Firm FE	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
N	67443	67443	55026	55026
R-sq	0.386	0.394	0.396	0.401

Table A5. Conventional EPU vs. XiEPU

Note: Standard errors are clustered at the firm-quarter level. The significance levels are * 0.10, ** 0.05, and *** 0.01. The dependent variable is the firm-level quarterly investment rate in all regressions.