THREE ESSAYS ON POLITICAL UNCERTAINTY IN CHINA

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by

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ABSTRACT

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The view that uncertainties emanating from the political system increase the information asymmetry between firms' insiders and outside investors has reached an agreement (Bird et al., [2017]; Chen et al., [2018]; Dai and Ngo [2018]). In this three-chapter dissertation, which contains three papers, I contribute to this relatively new area of research by examining how information asymmetry induced by political uncertainty impacts the stock market, i.e. probability of information based trading; managerial decision making, i.e. earnings management; and whether government subsidies pervasive in the specific setting of China provide an additional channel to affect this managerial decision making.

Chapter 1, titled POLITICAL UNCERTAINTY AND THE PROBABILITY OF INFORMATION BASED TRADING (PIN), examines the effect of political uncertainty on information asymmetry, measured by the Probability of Information Based Trading (PIN) - which is positively associated with information asymmetry - between firms' insiders and outside investors using local government turnover in China as a source of plausibly exogenous variation in uncertainty. The effect is analyzed through a two-way fixed effect model on publicly listed Chinese firms from 2001 to 2010. The results indicate that PIN decreases during the year of city Party Secretary turnover, suggesting a positive effect of political uncertainty on reducing information asymmetry between firms' insiders

and outside investors. The results of event study suggest that the effect is very short run, dissipating after a year.

Chapter 2, titled POLITICAL UNCERTAINY AND EARNINGS MANAGEMENT, examines the effect of political uncertainty on firms' accruals-based earnings management and real earnings management using local government turnover in China as a source of plausibly exogenous variation in uncertainty. Two-way fixed effect models are combined with hand-collected data on changes of government officials over the period from 2007 to 2017 to study this question. The results suggest that firms on average move 0.5% more of total assets into discretionary accruals during the year of local government turnover. Nevertheless, real earnings management is not affected by local government turnover. An event-study analysis shows that the effect on accruals management dissipates after one year.

Chapter 3, titled POLITICAL UNCERTAINY AND GOVERNMENT SUBSIDIES, examines whether the amount of government subsidies received by firms change during the year of political uncertainty, measured by the turnover of top official at city level. The question is tested using a two-way fixed effect model controlling city fixed effect, industry fixed effect, and year fixed effect. Historical changes of top official for each city are hand-collected, and then financial data of all firms publicly listed in Shenzhen and Shanghai Stock Exchanges in China from 2007 to 2018 are merged to construct the final sample. The results suggest that firms receive qualitatively unchanged subsidies from government during the year of city Party Secretary. An event-study analysis indicates that city Party Secretary turnover does not affect government subsidies allocation in the long run.

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To my husband Cong Ni, my parents, Jinbi Jiang and Liangcheng Lai, my son Jeremy Ni, and my daughter Cecilia Ni.

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CHAPTER 1

POLITICAL UNCERTAINTY AND PROBABILITY OF INFORMATION BASED TRADING (PIN)

1.1 Introduction

Researches about political uncertainty have been emerged in recent years. The subject of how the effects of uncertainties emanating from the political system affect the information asymmetry between firm insiders and outside investors has reached an agreement. Chen et al., (2018) examine how political uncertainty affect Chinese firms' information environment by disclosing less information to investors. They find that the reduction of information disclosed is not negated in spite of the increased production of information during periods of political uncertainty from information intermediaries such as financial analysts and the media. Bird et al., (2017) provide evidence that in order to mitigate the increased information asymmetry leading up to a close gubernatorial United States election, firms increase voluntary disclosure to enhance corporate transparency. Dai and Ngo (2018) propose and validate a positive relationship between political uncertainty and accounting conservatism as a response of increased information asymmetry during election periods. In this paper, I contribute to this relatively new area of research by examining how information asymmetry induced by political uncertainty impacts the stock market, i.e. Probability of Information Based Trading (PIN).

PIN is a metrics of information asymmetry invented by Easley et al., [2012]. The PIN metrics represents the expected fraction of trades that are private information based, which are trades that occur because of private information and would not have been made

had the information been kept unknown for the trader. Different from firms' disclosure such as seasonal and annual financial reports which are available to public, private information regarding firms' operation or performance is available only to a small group of traders, i.e. insiders. Therefore, PIN is negatively associated with firms' transparency and positively related to firms' information asymmetry. A higher PIN indicates less transparency and higher level of information asymmetry between firms' insiders and outside investors. PIN is calculated using number of buy- and sell-trades and hence involves investors' activity directly.[1] The use of PIN in my paper provides a major advantage. Specifically, it helps answer whether political uncertainty affects information asymmetry in general. Previous literature has shown that during the period of political uncertainty, (1) firms tend to disclose more voluntary information (Bird et al. [2017]); and (2) intermediary and third party information production increase (Chen et al., [2018]) to mitigate information asymmetry. However, based on my knowledge, there is no one directly examines how the information asymmetry changes in general due to political uncertainty. That is, do the actions taken by firms or other parties to mitigate information asymmetry caused by political uncertainty help bring down information asymmetry to its normal level, or even further?

Understanding how information asymmetry between firms' insiders and outside investors is affected by political uncertainty is important to investors, the number of which grows rapidly. With the fast development of stock markets, especially in emerging

[1]Trades are classified into buys and sells using the technique developed by Lee and Ready (1991). More details are included in section 1.3.2.1 and Appendix.

countries, more and more individuals have become market participants. By December 21, 2018, there are 0.146 billion citizens in China holding an A share investment account, and this number increases by 1.2 million in each month (China Securities Depository & Clearing Corporation).[2] The information available to investors is essential in making optimal investment decisions. Listed firms are required by the China Securities Regulatory Commission (CSRC), which regulates the securities industry in China, to disclose information to public.[3] The goal of this mandated disclosure is to decrease the level of information asymmetry between firms' insiders and outside investors. Firms also disclose voluntary information to mitigate information asymmetry. For example, firms may voluntarily disclose information about their ongoing R&D projects and hence attract investors. Firms may disclose more or less information during times of political uncertainty (Bird et al., [2017], Chen et al., [2018]). Nevertheless, it is unclear if the changed amount of information disclosure helps to bring the level of information asymmetry to its normal level. The purpose of this paper is to answer the above question by empirically examining the effect of political uncertainly on PIN.

There are several mechanisms through which political uncertainty may affect information asymmetry. Prior literature (Bird et al., [2017], Chen et al., [2018]) highlight

[2]There are three types of shares in China, A shares, B shares, and H shares. A shares, also called domestic shares, are shares that denominated in Renminbi (currency used in China) and traded in the Shanghai and Shenzhen stock exchanges. B shares are denominated in foreign currency (currencies other than Renminbi) and traded in Shanghai and Shenzhen stock exchanges. H shares are denominated in Hong Kong dollar and traded in the Stock Exchange of Hong Kong.

[3] According to Administrative Measures for Information Disclosure of Listed Companies, a regulation released by China Securities Regulatory Commission (CSRC), the mandatory information listed companies should disclose primarily includes prospectus, statements, periodical reports, and temporary reports.

how political uncertainty can affect information asymmetry through altering the amount of information (both mandatory and voluntary) firms disclose. Political uncertainty also affects the information production of intermediaries such as media and financial analysts (Chen et al., [2018]). This paper provides additional channels through firms' activities. That is, political uncertainty can affect information asymmetry via affecting firms' activities. Due to increased political uncertainty, firms might choose to stop, curtail, or delay some on-going projects, and thus have decreased activities. Such reduced activities lead to less and easier mandatory information disclosure, which is easier for investors, especially less educated investors, to understand. A better understanding of available information reduces the information asymmetry between investors and the insiders, which allows investors to improve their investment decisions. More details of mechanisms are discussed in section 1.2.3.

In this study, I contribute to the literature by quantifying the effects of political uncertainty on PIN. Specially, I use city level government leader's turnover in a large and emerging market – China – as a measure of political uncertainty. My focus on China allows me to test the empirical importance of local government as that is where many decisions particularly relevant to local firms are made (e.g., local infrastructure projects). Studies using data from the U.S. usually examine the effect of presidential elections, which are much larger in scale and plausibly influence different types of firms and behaviors than local elections. In China, there is only one party, and there is no uncertainty regarding the outcome of presidential elections. However, the political uncertainty in China is associated with the turnover of local government officials, which could happen due to corruptions, malfeasance, or promotions. Compared to free markets such as the U.S. or European

countries, China is a market more likely to capture the effect of political uncertainty on firms' activities due to its unique socioeconomic system and political bureaucracy. First, the economy in China is controlled by the market and government. The Chinese government often uses the "visible hand" to directly control resources and allocate wealth, which causes uncertainties for firms and financial markets (Luo et al., [2017]). In China, land is owned by the government, who controls land usage and price. Second, the Chinese government is actively involved in firms' operations. For example, the government in China holds majority ownership of a large number of firms (over 50%).

To examine whether political uncertainty affects PIN, I take advantage of plausibly exogenous variation in political uncertainty that is generated by elected official turnover driven by local elections. I leverage high frequency data from stock market to measure annual firm level PIN over the period from 2001 to 2010. The annual firm level data are then used to evaluate the degree to which PIN changes when local government turnovers. Firm characteristics provided by China Stock Market and Accounting Research (CSMAR) allows me to include a rich set of fixed effects (city, year, industry, and firm) and firm level characteristics in regression models.[4] The results imply that PIN decreases during the year of city Party Secretary turnover by 0.3%. The results are robust to sensitivity checks and falsification exercises.

My approach focuses on the effect of political uncertainty affecting investors. This approach allows my study to make several contributions. First, using PIN which is calculated using market transactions, my study provides assurance to investors of the

[4]CSMAR is developed by the GTA Information Technology Company. CSMAR is one of the most popular financial databases for academic and practical purposes in China.

quality of information they have, and thus be more confident while making investment decisions. Second, this assurance maintains investors' regular investment and thus alleviates the panic of the stock market during the period of political uncertainty caused by local government leader turnover. Third, this study contributes to the extant literature by providing positive effect of political uncertainty. Political uncertainty has been largely documented to have adverse effect on firms, such as a higher cost of capital (Li et al., [2018]), reduced investment (An et al., [2016]), and higher market volatility (Luo et al., [2017]). This study shows that political uncertainty potentially has some positive spillovers as well. My analysis reveals robust evidence that local Party Secretary turnover reduces the level of information asymmetry between firm insiders and outsiders, at least in the short-run. Possible channels of such decreased information asymmetry are (1) increased amount of voluntary or third party disclosure, and (2) easier reports due to firms' fewer activities.

The rest of this paper is organized as follows. Section 1.2 reviews prior literature, describes political background in China, and develops hypotheses. Section 1.3 introduces data, research model, and variables. Section 1.4 lists results. Section 1.5 provides robustness tests. Section 1.6 concludes the paper.

1.2 Literature review, Background, and Hypotheses

1.2.1 Literature in Political Uncertainty and Information Asymmetry

There is a large number of historic literature on the importance of political influence for economic outcomes and firm behaviors. Political events such as government official turnover have been examined in both developed and emerging markets. Prior literature

using data from the U.S. and other developed countries generally focus on presidential elections, which have broad effect on economic activities. For example, leading up to presidential elections, firms' managers engage in less risky investment strategies (Julio & Yook [2012]; Jens [2017]). Political uncertainty from elections also increases the cost of capital for firms and the risk premia (Pastor & Veronesi [2013]), and stock market volatility (Bialkowski, Gottschalk, and Wisniewski [2008]; Pasquariello & Zafeiridou [2014]).

Studies focusing on the setting of China on the other hand generally adopt local government turnover or specific political event. As noted in Section 1.1 there is no uncertainty in presidential elections due to one-party rule in China. Cities have fewer Initial Public Offerings (IPO) activities during years of local government turnover (Luo et al., [2017]). Firms' decisions and market values are also affected by political uncertainty. Firms hold less cash during the first year of a new city government official's appointment (Xu et al., [2016]). Less corporate investment during local government turnover years is reported (An et al., [2016]). Firms' cost of equity is higher when facing political uncertainty (Li et al., [2018]).[5] An increased firm risk is found during firm years with government official turnover (Luo et al., [2017]).

The above studies are most relevant to this paper, which also focuses on the effect of political uncertainty on firms' behaviors. Whether political uncertainty affects the total amount and quality of information available to corporate investors and hence information asymmetry between firm insiders and outsiders is unclear. Chen et al., (2018) examine how political uncertainty affects the total amount of information about a firm that is available

[5]The cost of equity is the return (rate of return) a firm pays to its equity holders to compensate the risk they undertake by investing their capital.

to the market. They find that firms disclose less information and there is a net loss of information in spite of the increased information disclosure from third parties such as financial analysts and the media. My study differs from the above one by comparing the level of information asymmetry in firm years with and without local government leader's turnover. Instead of focusing on information resources, I investigate the outcome.

1.2.2 Government Structure in China

The government administration in China consists of five levels: central government, province, city, county, and township. There are 290 cities governed by 31 provinces, and four additional centrally administrated cities - Beijing, Shanghai, Tianjin, and Chongqing. The leader of each provincial and city government is the Party Secretary, followed by the governor or mayor.

This paper focuses on city leader's turnover, which is controlled by National People's Congress. The tenure of city leader, i.e. Party Secretary is five years. However, city official turnover can happen prior to the end of tenure due to corruption, malfeasance, or leave for another position. I choose to focus on city level turnover for the following reasons. First, city government officials have greater authority and flexibility on local economic resources compared to county and township government officials. As a result, the Party Secretary of a city plays an important role in policy decision-making and thus generates greater impact on local economic growth. Second, compared to presidential and provincial turnover, city government turnover involves more uncertainty. In particular, the president in China is usually nominated by previous central government, while the provincial leaders are determined by the current central government.

1.2.3 Mechanisms Linking Local Government Turnover and Information Asymmetry

City government turnover can affect firms' information asymmetry in several ways. First, local government is closely tied to local firms. On one hand, local government plays an important role in the performance of local firms. Local government designs local economic policies and strategies based on the budget from the central government. Besides economic policies and strategies, local government also decides land usage; establishes business rules, codes and regulations; and provides investment opportunities and financial credit for local firms (Luo et al., [2017]). The activities of local government also involve daily business operations, such as work safety inspections and investment project approval (Gordon & Li [2012]). On the other hand, the performance of local firms has great effect on the career evaluation and promotion of city officials (Wu et al., [2013]; Deng et al., [2015], Luo et al., [2017]). City leaders such as Party Secretary and mayor are appointed by the provincial government and are evaluated based on local economic performance. Tax revenue from local firms plays an important role in economic performance. Therefore, the performance of local firms as a whole has direct effect on the term of their government officials. The possibility of reverse causality is low since it is hard for all local firms to act in the same way to affect the turnover of their local government leader.

Due to the close connection between local firms' performance and government officials' term, the Party Secretary and mayor of cities could have direct effect on the amount of information a firm choses to disclose. For example, city officials might favor policies and projects which benefit their future promotion. During years of turnover, the on-going policies and projects might be discontinued due to different preferences of successors. Such increased policy uncertainty may limit access to capital for affected firms,

leading firms to voluntarily disclose more information (Bird et al., [2017]). On the other hand, this increased political uncertainty may lead to fewer business activities. Political uncertainty has been reported to have negative relationship with firms' cash holding (Xu et al., [2016]), investment (An et al., [2016]; Jens [2017]), and merger and acquisition activities (Julio & Yook [2012]). The lower level of business activities contributes to decreased amount of information in firms' mandatory reports. Thus, firms' information asymmetry could increase due to lower amount of information disclosure, or decrease because of the simpler reports, which are easier for investors to understand. Information asymmetry does not depend on the absolute but relative amount of information held by each party. Since both firms and investors face less information due to decreased activities during years of local government turnover, the direction of the change of information asymmetry is hard to predict.

In addition, political inspection might be enhanced during the time of turnover. The new government officials might require intense political inspection during their first year to familiarize themselves with the operations of local firms. The increased level of inspection could have a direct effect on the information firms disclose to the public. Firms may choose to hide information which is unfavorable, and reveal information which is beneficial.

Political uncertainty may also affect information asymmetry by changing the amount of information disclosure from third parties such as analysts and the media. The decreased predictability of economic policies during the periods of political uncertainty increases the volatility of investors' stock returns. To lower this volatility, investors may demand more information and thus cause a demand-driven supply of information from

other sources (Chen et al., [2018]). The increased supply of third party information can be gathered by investors themselves, analysts or media.

Since the possible channels for political uncertainty to affect information asymmetry in different ways, whether the level of information asymmetry increases or decreases during the year of local government turnover is an empirical question. Thus, the key contribution of this manuscript is to offer evidence on the direction of this relationship.

1.3 Data, Research Design, and Variables

1.3.1 Data Collection and Sample Construction

My data is obtained from three resources. First, I manually collect the data of local government official turnover from China's most popular search engine (www.baidu.com). Cities with missing turnover information on Communist Party secretary are excluded.[6] After matching with firms' registration data, six out of 266 cities with firm registration have missing local government turnover information.

Next, I obtain firm-level accounting data from China Stock Market and Accounting Research (CSMAR) database. CSMAR is developed by the GTA Information Technology Company and is one of the most popular financial databases for academic and practical purposes in China. My sample contains all A-share listed firms in China; that is firms listed on the Shanghai and Shenzhen Stock Exchanges. The sample period is 2001 to 2010. Standard exclusions are made for firm-year observations: (1) firms issuing other than A

[6]The missing data might be found from other resources such as newspaper. Considering the time and effort required to make up the missing data, I choose to exclude cities with missing government turnover data.

shares (i.e. B share, H share);[7] (2) firms in the financial industry;[8] and (3) firm-year missing related financial information.[9] Table 1.1 shows how many observations I lose in each step.

Table 1.1: Data Selection Process

Process	No. of Observations
- Total A-share firm observations from 2000 - 2010	15,147
- Financial firms	207
- Firm observations with missing financial information	1,017
- Firm observations with missing PIN	10,432
- Firm observations with missing local government turnover	638
- Firm observations with extreme (>95% percentile or <5% percentile) PIN	288
Final sample	2,575

Last, I collect high frequency stock market data from China Center for Economic Research (CCER) to calculate PIN. CCER is a scientific research and teaching institution subordinate to Peking University.

[7]B/H shares are denominated in foreign/Hong Kong currency. I exclude firms issuing B and H shares since, compared to A shares, these two types of shares are more likely to be affected by global political uncertainty. Thus, my focus on A shares allows me to study shares that are most likely impacted by local government uncertainty.

[8]Financial firms are excluded since their operation and reports are very different from other firms.

[9]CSMAR collects firms' information from their reports. The possible explanation of missing data in CSMAR is the missingness from firm's reports. Following mainstream literature (inert citations to support this statement), this paper excludes firm year observations with missing financial information.

After collecting the above data, I then merge them by matching the city and fiscal year. Following previous studies (Chen et al., [2018]; Li et al., [2018]), I classify the city where a firm is located according to the location of the firm's registration city. The number of observations used for analyses is 3,895 after trimming the top and bottom 5% of data by distribution of dependent variable, i.e. PIN. The final sample covers 134 cities. In general, 266 cities have firm registration information. Six of them are lost due to missing local government turnover information. And then 124 cities are lost during the process of PIN calculation, which is discussed in section 1.3.2.1.

1.3.2 Variable Definitions

1.3.2.1 Dependent Variable

I use model in Easley et al., (2002) to calculate PIN. The benefit of PIN is that this metrics can directly measure information asymmetry, and thus helps answer whether political uncertainty changes information asymmetry in general, and/or whether traders with private information use those information to trade on stock market.

The calculation of PIN relies on the number of buy trades and sell trades for a firm. Trades are classified as buys and sells using the technique developed by Lee & Ready (1991). More specifically, trades at prices above (below) the midpoint of the bid and ask are classified as buys (sells). Trades occur at the midpoint of the bid and ask are classified using the "tick test", which compares the trading price of current order with that of most recent order. More details about classification method are included in Appendix.

The number of buys and sells are then used to estimate the following parameters through maximum likelihood estimate: the probability of private information events occur in a trading day (α); the probability of private information containing bad events (δ); the

arrival rate of uninformed buyers (ε_b) and uninformed sellers (ε_s); and the arrival rate of risk neutral and competitive informed traders when an information event takes place (μ). I eliminate all firms that have less than 28 days of buy and sell data in any year of the sample period. This is done to ensure that there are enough data points to calculate PIN in any given year.

Finally, PIN is calculated using Eq. (1.1):

$$PIN = \frac{\alpha\mu}{\alpha\mu+\varepsilon_b+\varepsilon_s} \tag{1.1}$$

A larger PIN value corresponds to higher level of information asymmetry. More detail of intuition and modelling of PIN is included in the Appendix.

1.3.2.2 Explanatory Variables

To examine how political uncertainty influences, I construct one dummy variable: D. For each firm-year observation, D takes the value of one if the firm's registration city experiences a Party Secretary turnover and zero otherwise.

Following the literature (Xu et al. [2016]), the exact month of the newly appointed official taking office is used to determine the official's first year in office. Specifically, the indicators take the value of one for current (following) year if the newly appointed official taking office in the first (second) half year. Figure 1.1 plots the distribution of average Party Secretary turnover rate during the sample period from 2001 to 2010. A higher value of average Party Sectary turnover rate indicates higher level of political uncertainty. Figure 1.1 show that the majority of cities (75%) included in the sample experience two or three Party Secretary turnover from 2001 to 2010. Around 12% of cities change Party Secretary

very often (>= 4 times), and 9% of cities are quite stable and change Party Secretary only once during the 10 years window.

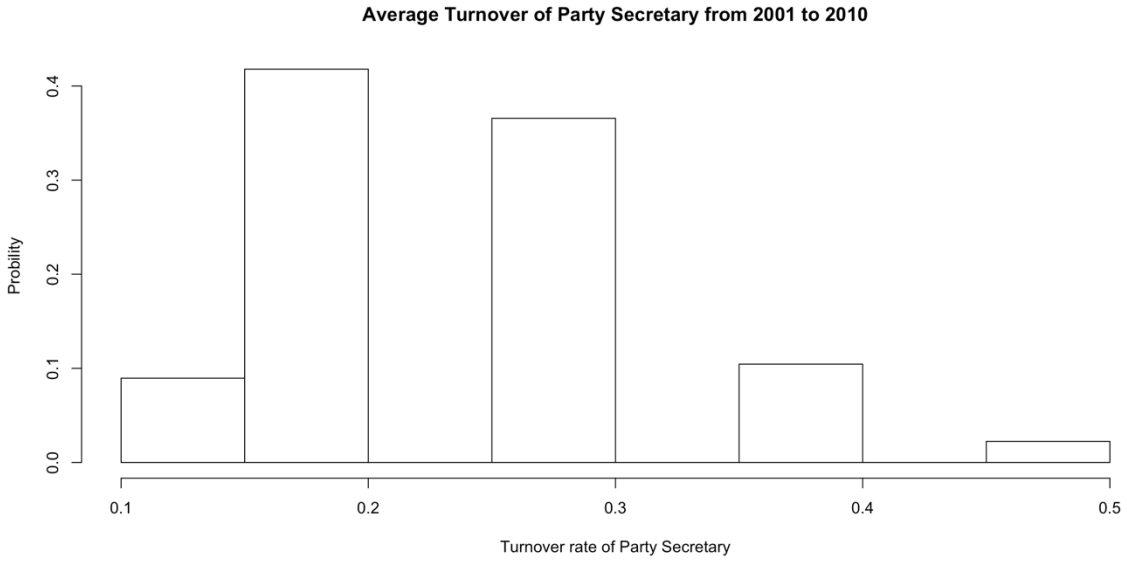

Figure 1.1: Average Turnover Rate of Party Secretary from 2001 to 2010

I include a number of moderating factors on the impact of political uncertainty on firms' information asymmetry. These moderating factors represent firm attributes that can change political extraction risk to firms but are not potential outcome of political uncertainty. First, I identify if the firm is a state owned enterprise (SOE). Firms' annual reports are used for this identification. A firm is defined as an SOE if either central or local government is the actual or ultimate controller.

Other firm characteristics that are common to the information asymmetry literature are also included. Firm characteristics included are: market value of a firm's equity to its book value (BM), which is a proxy for a firm's growth opportunities; return on assets (ROA), which captures firms' profitability; dummy variable indicating loss (loss), which

takes the value of one if the firm's net income is negative, and zero otherwise; logarithm of firms' asset (*size*); leverage (*lev*); institutional ownership (*InstOwn*); number of analysts observing the firm (*Analyst*); and annual turnover rate of the firm's share (*turnover*). The annual value is calculated from monthly turnover rate; annual return volatility of a firm's share (*volatility*). The annual value is calculated from monthly return data.

1.3.3 Empirical Model

To examine the impact of political uncertainty on information asymmetry, I apply the following two-way fixed effect model:

$$PIN_{ict}=\theta D_{ct} + X_{ict}\beta + \alpha_t + \alpha_c + \varepsilon_{ict} \quad (1.2)$$

where PIN_{ict} represents PIN value of firm i in city c in year t. D_{ct} is the indicator of political uncertainty in city c in year t, which takes the value of one if city c experiences a Party Secretary turnover in year t and zero otherwise. The level of political uncertainty of city c can be captured by the average value of D_c during the sample period. A higher average value of D_c indicates higher political uncertainty for city c. α_t are year fixed effects. α_c are firm fixed effects. X_{ict} includes firm characteristics described in section 1.3.2.2. ε_{cit} is a random error term that can be correlated within a city across years. The standard errors clustered on cities are estimated. The coefficient of primary interest is θ, indicating the difference in average value of PIN between the treatment group (firm year observations with local government turnover) and comparison group (firm year observations without local government turnover). Table 1.2 describes definition of all variables involved in this paper.

Table 1.2: Variable Definitions

Variable	Definition
PIN	Probability of information (private) based trading. A larger PIN indicates higher level of information asymmetry between firm insiders and outside investors.
$D_{c,t}$	Indicator of Party Secretary turnover taking the value of 1 if city *c* experiences Party Secretary turnover in year *t*.
OI	Order Imbalances. OI = E[S-B]/[S+B], where E is expectation operator, and B/S is the number of daily buy/sell orders. Similar to PIN, a larger OI corresponds to higher level of information asymmetry.
ROA	Return on firms' assets.
BM	Book-to-Market Ratio, i.e. the ratio of the book value of equity to the market value of equity.
size	Logarithm of firms' asset
leverage	The ratio of liability to total assets.
InstOwn	Percentage of ownership from institutions.
Analyst	Number of analysts observing the firm.
turnover	Annual turnover rate of the firm's share. The annual value is calculated from monthly turnover rate
volatility	Annual return volatility of a firm's share. The annual value is calculated from monthly return data.
loss	A dummy variable taking the value of one if the firm's net income is negative, and zero otherwise.
SOE	An Indicator equaling to one if the firm is owned by central or local government, and zero otherwise.

The effect of political uncertainty can be identified using year-to-year variation within cities driven by Party Secretary turnover, controlling for firm fixed effects, industry fixed effect, year fixed effect, and time-varying firm characteristics. Figure 1.2 shows the year-to-year variation on local Party Secretary turnover.

1.4 Results

1.4.1 Summary Statistics

Table 1.3, columns (1) and (2) show the distribution of sample observation and local government turnover by year from 2001 to 2010. The number of observations used

for analyses is 2,575, after removing observations on top and bottom 5 percentile by distribution of PIN. The final sample includes 134 cities.

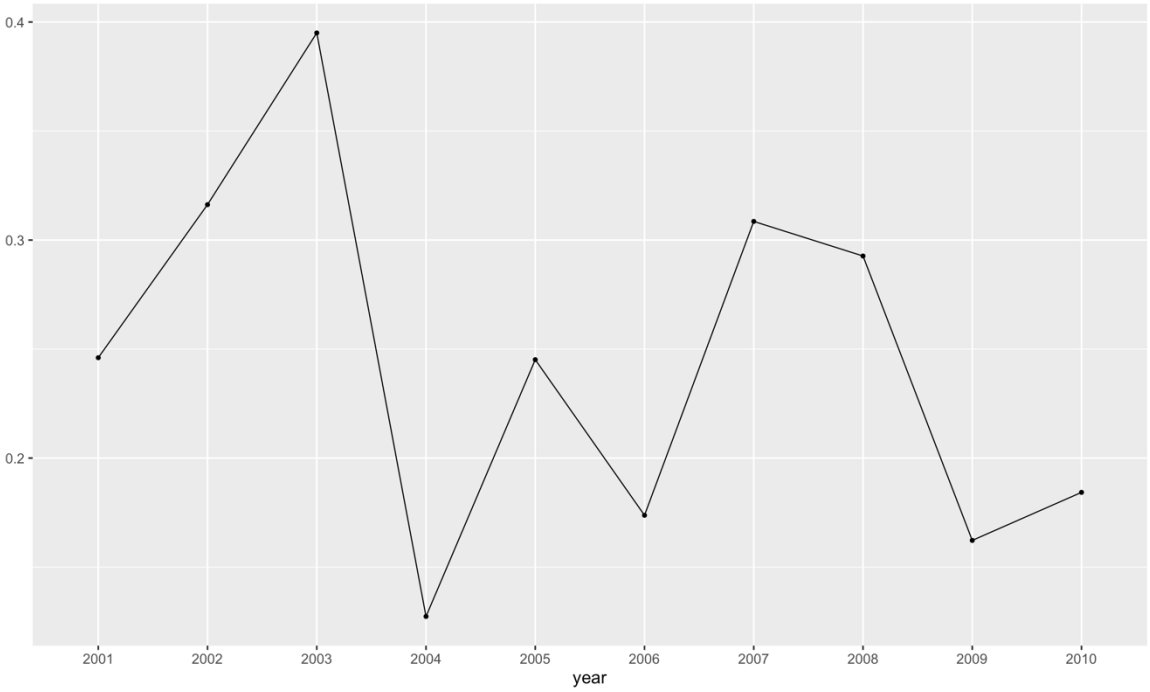

Figure 1.2: Year-to-Year Variation of Local Government Leader's Turnover

Table 1.3, columns (3) describes the distribution of local Party Secretary turnover by year. The maximum number of local government turnovers occurred in 2003, followed by minimum number of turnover in 2004. The average turnover rate of both the Party Secretary and mayor is 24%.

Table 1.4 reports summary statistics of dependent, treatment and control variables. The average value of PIN is 0.11. The standard deviation of PIN is 0.04, indicating a smooth distribution. The sample firms are generally big since the average value of logarithm of total assets is 21.52, but high levered. The average leverage of the sample firms is 0.51, meaning 51% of their assets are debt. The sample has a low institutional ownership, and limited analyst coverage on average. The return volatility is 0.13 on

average, and is smoothly distributed. The share turnover rate is 0.22 on average, indicating a mild trading volume. The mean value of loss indicator is 0.09, meaning only 9% of sample observations have negative net income. Finally, among the sample observations, 43% are SOEs.

Table 1.3: Sample Description of Local Government Turnover

Year	Distribution of Sample		Distribution of Local Party Secretary Turnover
	No. of Observations	No. of cities	(%)
	(1)	(2)	(3)
2001	126	64	25
2002	234	91	32
2003	200	86	40
2004	212	89	13
2005	257	101	25
2006	282	106	17
2007	269	103	31
2008	287	107	29
2009	339	111	16
2010	369	115	18
Total:	2,575	134	Average: 24

1.4.2 Results of Two-Way Fixed Effect Model

Table 1.5 reports the regression results of PIN on local Party Secretary turnover. From column (2) to column (3), I sequentially add control variables, fixed effects to the

simple linear regression with Party Secretary turnover as the only independent variable. Column (4) shows the results of full model with clustered standard error by firm.

Table 1.4: Effect of City Government Turnover on Information Asymmetry - Summary Statistics

Variable	Mean (1)	Std. Dev (2)	25th (3)	Median (4)	75th (5)
Outcome					
PIN	0.11	0.04	0.07	0.11	0.15
Treatment					
Party Secretary Turnover	0.24	0.43	0	0	1
Firm Characteristics					
Return on Assets	0.03	0.08	0.01	0.03	0.40
Book-to-Market Ratio	0.68	0.23	0.52	0.72	0.87
Log(assets)	21.52	1.00	20.81	21.44	22.14
Leverage	0.51	0.23	0.38	0.51	0.62
Institutional Ownership	5.76	9.20	0.14	1.37	7.46
No. of Analysts Observing	4.59	7.46	0.00	1.00	6.00
Return Volatility of Share	0.13	0.06	0.09	0.12	0.16
Turnover Rate of Share	0.22	0.19	0.08	0.16	0.31
Loss Indicator	0.09	0.29	0.00	0.00	0.00
SOE Indicator	0.43	0.49	0.00	0.00	0.00

Notes: This table presents the summary statistics of variables used in two-way fixed effect model. Number of observations for all variables are 2,575. The column (3) and (5) show the values at first and third quartile respectively.

In column (1), the coefficient estimate on Party Secretary turnover is -0.005 but not statistically distinguishable from zero ($p>0.1$). In column (2), after adding control variables, the coefficient estimate on Party Secretary turnover is -0.003, which is statistically distinguishable from zero ($p<0.05$). In column (3), the results of two-way fixed

Table 1.5: Effect of City Government Turnover on Information Asymmetry – Two-Way Fixed Effect Models

	(1)	(2)	(3)	(4)
Party Secretary turnover	-0.005	-0.003**	-0.003**	-0.003**
	(0.002)	(0.001)	(0.001)	(0.001)
Control	No	Yes	Yes	Yes
City effect	No	No	Yes	Yes
Industry effect	No	No	Yes	Yes
Year effect	No	No	Yes	Yes
Cluster	No	No	No	Yes
R^2	0.00003	0.52	0.73	0.73

Notes: This table presents the results of regressions. Number of observations for all analyses are 2,575. Column (1) only includes indicator of political uncertainty. Column (2) adds firm characteristics. Column (3) adds firm fixed effects, industry fixed effect, and year fixed effects. Column (4) is estimated on clustered standard errors by firms. Standard errors of coefficient estimates are included in parenthese. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

effect model controlling firm, industry, year fixed effects and time varying firm characteristics is reported. The coefficient estimate on Party Secretary turnover is statistically distinguishable from zero (p<0.05). The coefficient estimate is -0.003, suggesting that on average, PIN value for treatment group (firm year observations operating in a city with Party Secretary turnover) is lower by the amount of -0.003 than that for comparison group (firm year observations operating in a city without Party Secretary turnover). The result remains qualitatively unchanged after clustering the standard errors by firm.

1.4.3 Event Study

In this sub section, I use Eq. (1.3) to perform event study to examine if the main effect occurs in a short or long term. Specifically, I extend the main model by adding leads and lags of Party Secretary change. The effect of Party Secretary change may continue after the year of turnover. However, differential trends prior to the event could raise the concern that the data do not satisfy the parallel trends assumption.

$$PIN_{cit}=\sum_{k=-3}^{3}\rho_k D_{c,t}^{k}+\varphi_c+\varphi_{ind}+\varphi_t+\alpha \mathrm{X}_{cit}+\varepsilon_{cit} \quad (1.3)$$

where the treatment dummy $D_{c,t}^{k}$ equals 1 if city c experienced Party Secretary change k years from year t and 0 otherwise. This definition implies that $k = 0$ represents the first year following the Party Secretary turnover, and $k = -1$ is the year prior to treatment. All other variables are defined the same as in Eq. (1.2).

Table 1.6 shows the results of event study. The results suggest that Party Secretary turnover has no lead effect on PIN. The coefficient of $D_{c,t}^{-3}$ is 0.003, which is distinguishable from zero at significance level 0.01. The sign is opposite to the main result. Figure 1.3 shows the visual trend of coefficient estimates on Party Secretary in the window of [t - 3, t + 3]. The figure implies that the coefficient has a downward trend from year t - 3 to t, and an upward trend from year t to year t + 3. A possible explanation is that, stock market investors tend to be more and more conservative with regard to their trades for years leading up to local Party Secretary turnover, and more and more aggressive with regard to their trades for years following local Party Secretary turnover.

Table 1.6: Effect of City Government Turnover on Information Asymmetry - Event Study

	Coefficient Estimate	Adj. R2
	(1)	(2)
$D_{c,t}^{-3}$	-0.0001 (0.001)	0.73
$D_{c,t}^{-2}$	-0.0005 (0.001)	0.73
$D_{c,t}^{-1}$	-0.0007 (0.001)	0.73
$D_{c,t}^{1}$	0.001 (0.001)	0.73
$D_{c,t}^{2}$	-0.0001 (0.001)	0.73
$D_{c,t}^{3}$	0.003*** (0.001)	0.73

Note: This table shows the results of event study as shown in Eq. (1.3), where $D_{c,t}^{-3}$, $D_{c,t}^{-2}$, $D_{c,t}^{-1}$, $D_{c,t}^{1}$, $D_{c,t}^{2}$, $D_{c,t}^{3}$ are the indicators of Party Secretary turnover in year $t-3$, $t-2$, $t-1$, $t+1$, $t+2$, and $t+3$ respectively. Firm fixed effect, industry fixed effect, and year fixed effect are included. Standard errors are clustered by firm. Standard error of coefficient estimates are shown in parentheses. Number of observations for all analyses are 2,575. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

1.5 Robustness Tests

In this section, I perform several tests to check the robustness of my baseline results. Re-assuringly, my results are not sensitive to alternative variable definitions, sample, and specifications.

1.5.1 Alternative Measurement of Information Asymmetry

Because order imbalances play an important role in information asymmetry, I also include it as a measurement for information asymmetry. The definition of order imbalances

in my study follows that of Lee and Ready (1991), and Chordia et al. (2002). Order imbalances (OI) is defined as $OI = E[S-B]/[S+B]$, where E is expectation operator, and B/S is the number of daily buy/sell orders. Similar to *PIN*, a larger *OI* corresponds to higher level of information asymmetry.

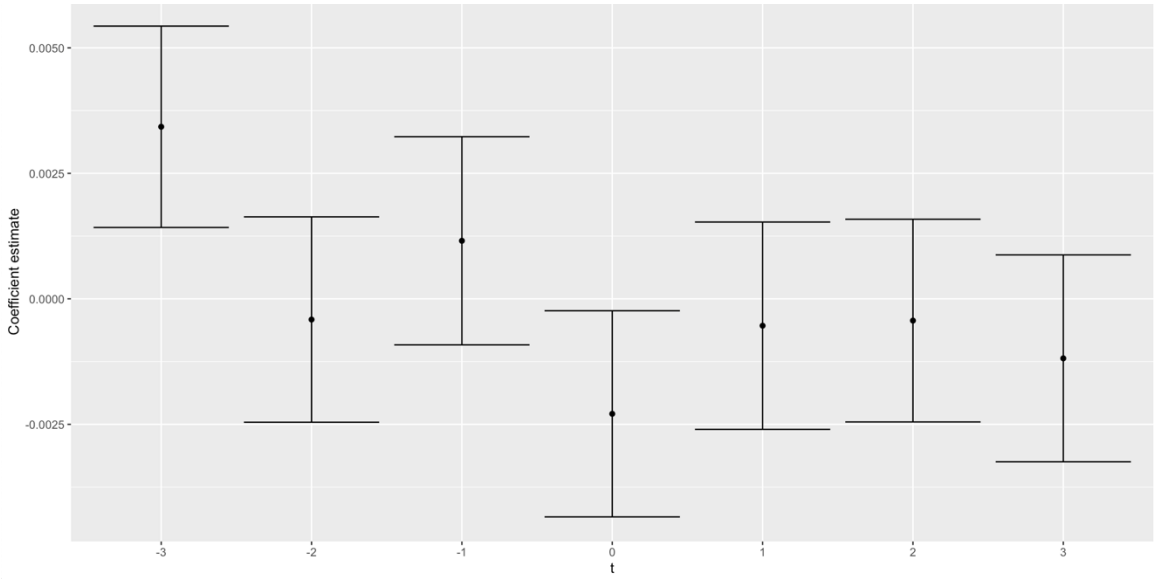

Figure 1.3: Coefficient Estimates and Confidence Interval of Event Study

Table 1.7, column (1) shows the result using order imbalances as a measurement of information asymmetry. The coefficient of Party Secretary turnover is negative (-0.003) and statistically distinguishable from 0 (p<0.05). The baseline result is confirmed.

1.5.2 Matched Sample

According to Table 1.3, the average value of Party Secretary is 0.24, indicating 24% of the sample falls in treatment group. To control the imbalance of the number of observations between my treatment group and comparison group, I match each treatment firm (a firm operating in a city with Party Secretary turnover) with a comparison firm (a firm operating in a city without Party Secretary turnover) in the same year and industry

having similar size, logarithm of assets. Treatment firms unable to match a comparison firm are excluded (38/623).

Table 1.7, column (2) shows the result of matched sample, which is in line with the baseline result.

Table 1.7: Effect of City Government Turnover on Information Asymmetry - Robustness Checks

	Alternative Proxy: OI	Matched Sample	Firm Fixed Effect
	(1)	(2)	(3)
Party Secretary Turnover	-0.003***	-0.003**	-0.003***
	(0.001)	(0.001)	(0.001)
City Fixed Effect	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes
Cluster	Yes	Yes	Yes
Sample No.	1,910	1,344	2,575
Adj. R^2	0.73	0.65	0.73

Notes: This table represents the results of robustness checks. Column (1) shows the results using alternative proxy of information asymmetry: order imbalances. Colum (2) shows the results of matched sample, where each observation in treatment group is matched with an observation in comparison group with similar firm size. Column (3) lists the results of two-way fixed effect model with firm fixed effect. Standard errors of coefficient estimates are included in parenthese. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

1.5.3 Additional Robustness Tests

In this section, I add two more robustness tests: leave one out exercise, and falsification exercise. For leave one out exercise, I sequentially exclude each one of 134 cities in the sample, and re-estimate the two-way fixed effect model to ensure that the

results are not sensitive to any particular city. The robustness of the baseline results is confirmed.

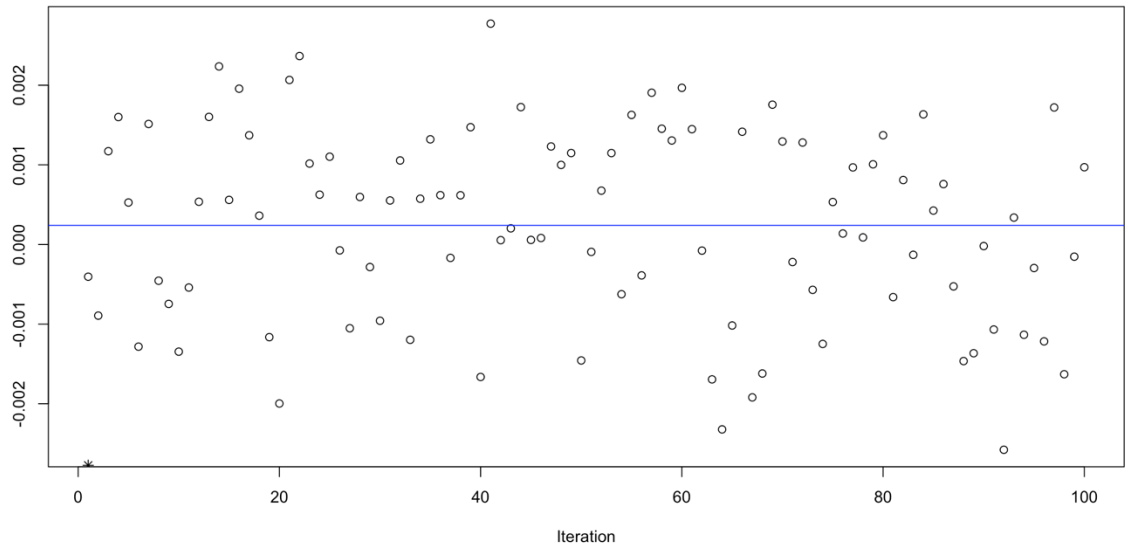

Figure 1.4: Falsification Exercise-Treatment Status Reshuffling

Notes: For this falsification exercise, Party Secretary turnover is randomly re-assigned 100 times, and the baseline two-way fixed effect model is re-estimated for each re-assignment. The star point on the left bottom reflects the main estimate of Party Secretary turnover. The horizontal line indicates the mean value for the estimates of placebo test.

For falsification exercise, I randomly re-assign the indicator of Party Secretary turnover across city and year, and re-estimate the baseline two-way fixed effect model. This re-assignment is repeated for 100 times. The logic behind this falsification exercise is that, if I am capturing the 'true' effect of local government turnover, the main estimate of Party Secretary turnover should be an outlier relative to the placebo point estimates. Figure 1.4 and 1.5 confirm that the baseline estimate is an outlier although not the single one.

1.6 Conclusion

Propositions on political uncertainty increases information asymmetry between firm insiders and outside investors has been a consensus. Efforts have been made to show the consequences of the enlarged information asymmetry (Dai & Ngo [2018]), and how firms and other parties take actions to mitigate such increase on information asymmetry

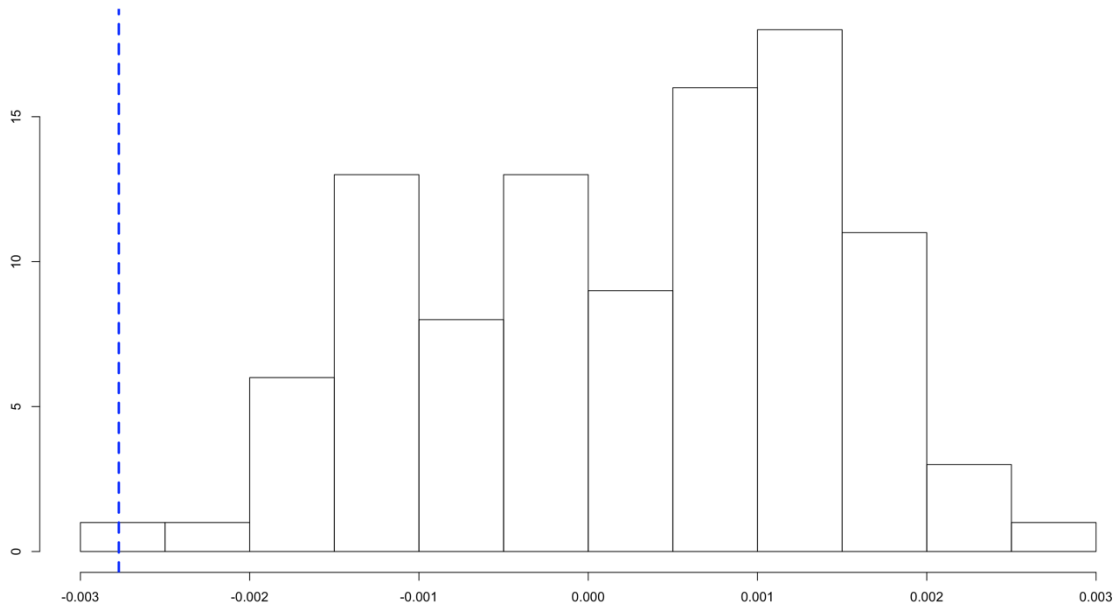

Figure 1.5: Histogram of Treatment Status Reshuffling

Notes: This figure shows the results of falsification exercise in another way using histogram instead of scatter plot. The dashed vertical line reflects the main estimate of Party Secretary turnove.

(Chen et al., [2018], Bird et al., [2018]). My paper aims to examine how political uncertainty affects PIN, a metrics used to measure information asymmetry. The design helps to answer the final effect of political uncertainty on information asymmetry. That is,

do actions taken by firms and other parties help to bring information asymmetry down to its normal level, and/or even reverse the bad effect caused by political uncertainty.

Using Chinese data from 2001 to 2010, the results show that PIN decreases substantially in the year of city Party Secretary turnover. The results suggest that Party Secretary turnover has positive effect on information asymmetry through reducing the level of PIN by 0.005. Furthermore, the result of event study shows that PIN does not change significantly prior the year of city Party Secretary turnover. Nevertheless, PIN increases by 0.003 three years after the turnover of city Party Secretary. This result suggests that Party Secretary turnover only reduces information asymmetry in a short run and this effect can be reversed gradually in a long run.

My paper has some limitations. First, the turnover of local government leader is not completely random. Cities with high frequency turnover in the past tend to have high frequency in a near future due to adherent corruption. This fact casts doubt on the unbiasness of the estimates. Second, the PIN measurement may not disentangle the effect of political uncertainty from investors' trading behavior. That is, the reduction of PIN can be explained by local government turnover, and/or the fact that investors holding private information do not take advantage of those information in stock market. Which effect dominates is unclear.

Despite above limitations, the analyses do support a causal interpretation of the results. The empirical approach controls year fixed effect, firm fixed effect and firm characteristics. The sensitivity of results is also tested by clustering the standard errors. Robustness checks such as alternative proxy of dependent variable, matched sample, and event study provide further support for baseline results.

These results offer encouraging evidence for the effect of political uncertainty, which is commonly documented to have negative effect on economic activities and firm behaviors. The findings are particularly relevant to stock market participants and firm investors having concern for information available while facing political uncertainty. The positive effect of Party Secretary turnover on information asymmetry suggests that there is no necessity for stock market participants or firm investors to pause or reduce their investment activities during time of political uncertainty.

My results may or may not extend to developed markets such as U.S. or European countries where legal institutions and mature market mechanisms help to prevent the distortionary impact of political regimes. Developing markets such as certain Asian countries (ex. North Korea) might have similar trend since the research setting is similarly highly politicized and less transparent.

CHAPTER 2

POLITICAL UNCERTAINTY AND EARNINGS MANAGEMENT

2.1 Introduction

In this paper, I examine the association between political uncertainty and firm's earnings management using the exogenous variation in political uncertainty induced by local government turnover in China. Earnings management or disclosure management is defined by Schipper (1989) as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)". This earnings management has multiple detrimental effects on investors such as reducing the precision of the earnings signal, increasing outsiders' uncertainty, as well as potentially leading to information asymmetries among firm insiders and to decreases in investment efficiency.

There are two types of earnings management: accruals management and real activities manipulation. Accruals management aims to obscure or mask true economic performance (Dechow & Skinner [2000]) through the use of accounting choices within generally accepted accounting principles (GAAP). Real activities manipulation aims to influence the output of the accounting system by changing the timing or structuring of an operation, investment, and/or financing transaction (Gunny [2010]). Real activities manipulation affects operations and is thus more costly, while accrual management only affects the representation of operating activities. In this paper, I measure both types of earnings management and examine their association with local government turnover.

The effect of political uncertainty on economic activities (Darby et al., [2004]; Mei & Guo [2004]; Aaberge et al., [2017]; Gholipour [2019]) and firm behavior (An et al., [2016]; Xu et al. 2016; Zhou 2017) is well-studied in prior literature. For example, Mei & Guo (2004) examine the impact of political uncertainty on financial crises and find out that eight out of nine of the financial crises happened during the periods of political election and transition. An et al., (2016) examine the effect of political uncertainty on corporate investment and find that political turnover leads firms to significantly reduce corporate investment. Nevertheless, there are only a handful of studies exploring the association between political uncertainty and a firm's accounting practices such as accounting conservatism (Dai & Ngo [2018]), earnings management (Ramanna and Roychowdhury [2010]). Accounting practices have direct effect on earnings quality which has important guidance to investors with regard to their investment decisions. For example, the stock price often changes substantially around a listed firm's seasonal financial reports. Therefore, understanding how political uncertainty affects a firm's accounting practices is important both academically and for industry.

Conservatism, a different dimension of financial accounting choices, is produced by the asymmetric verifiability requirements while recognizing economic gains and losses in a firm's financial statements, which result in accounting information that reflects economic losses in a timelier manner than gains (Basu 1997; Lara et al., 2012). Dai and Ngo (2018) find a positive relationship between political uncertainty and accounting conservatism. My paper contributes to the literature by focusing on a different dimension of financial accounting choices – earnings management. Both earnings management and conservatism introduce bias in financial reports. Earnings management introduces bias by

altering accounting numbers to either mislead some stakeholders on the companies' underlying performance or to influence contractual outcomes that are dependent on said numbers (Healy and Wahlen [1999]; Yang et al., [2012]). While accounting conservatism corresponds to the asymmetric verifiability of accounting gains versus losses, i.e., the verifiability threshold for gains is greater than that for losses (Basu [1997]; Watts [2003a]; Watts [2003b]). The choice of accounting conservatism stems from following accounting standards and has to be disclosed, whereas earnings management is an individual choice and is often concealed. Therefore, how accounting conservatism affects a firm's economic performance can be well predicted, while the economic effect of a firm's earnings management is uncertain since little is known about the direction of the underlying manipulation.

In this paper, the political uncertainty examined is induced by Party Secretary turnover at the city level in China. The government administration in China consists of five levels: central government, province, city, county, and township. There are 290 cities within 31 provinces. In addition, Beijing, Shanghai, Tianjin, and Chongqing are centrally administrated cities and not governed by any province. The Party Secretary is the top leader of each provincial and city government, and this position is therefore arguably important to firms because Party Secretary can affect business through public policies and government decisions such as government subsidies. One term of the city Party Secretary is five years, and they are allowed to take a maximum of two terms. However, city Party Secretary turnover can occur before the end of term due to corruption or malfeasance, or leave office for another position.

City level government turnover is often preferred by researchers examining political uncertainty in China for the following reasons. First, city government officials have greater authority and flexibility on local economic resources compared to county and township government officials, which are not allowed to make local decrees and rules. In addition, city governments are empowered to supervise subordinate county and county-level city governments. Therefore, the Party Secretary of a city plays an important role in policy decision-making and thus can have an impact on the local economy. Third, compared to presidential and provincial turnover, a city Party Secretary turnover involves less manipulation. The president in China is usually nominated by previous central government, while the provincial leaders are determined by current central government. Different from the turnover of government officials of these two levels, the turnover of city government officials are determined by the rule of career evaluation and promotions thus involves less manipulation.

The close association between city Party Secretary and local firms lends theoretical support to the view that political uncertainty can impact a firm's earnings management. City Party Secretary plays an important role in the performance of local firms by designing local economic policies and strategies based on the budget from central government. In turn, the performance of local firms has great effect on the career evaluation and promotion of city Party Secretary (Wu et al., [2014]; Deng et al., [2015]; Luo et al., [2017]). The existence of reverse causality is highly unlikely in spite of such close association since it's hard for local firms to manipulate earnings altogether in the same way to interrupt the turnover of city officials. In a local government turnover year, firms face uncertainty induced by the incumbent of new government official. Political uncertainty plausibly

affects earnings management in two principle ways. On one hand, the increased information asymmetry between firm insiders and outside investors through policy change following government leader's turnover makes it easier for manager to conceal their earnings management activities. On the other hand, the decreased government subsidies due to possible change of government funding allocation provides firm more incentive to manage earnings upward to meet the thresholds set by central government. These possible channels do not affect earnings management in the same way, thus the direction will be tested empirically.[10]

After removing firm year observations with missing local government turnover, financial and earnings management data, extreme value of earnings management, the accruals management (real earnings management) analysis is conducted on a sample of 12,221 (14,039) firm-years comprising 248 (252) cities during 2007 – 2017.[11] The proxy I use for accruals management is discretionary accruals, which is obtained by decomposing total accruals into discretionary and nondiscretionary components, using a within industry cross-sectional variation of the modified Jones model (Dechow et al. [1995]). Abnormal cash flow obtained by adopting the approach applied in Roychowdhury (2006) is used for proxy of real earnings management.

The evidence suggests that, firms on average manage accruals upward during the year of city Party Secretary turnover by moving 0.5% more of total assets into discretionary

[10]A threshold of 6% for average Return on Equity (ROE) over the previous three years is required for a listed firm to lauch a rights issue. A listed firm face the risk of being de-listed if a net loss for a continuous three year period is reported.

[11]The top and bottom 5% of observations in the empirical distribution of the dependent variable are removed. Different trimming standards are applied for robustness check in section 6.

accruals. The result is robust to a battery of sensitivity checks. Nevertheless, real earnings management remains qualitatively unchanged during the year of city Party Secretary turnover. The event study shows that the effect on accruals management is short-run, dissipating after one year.

My paper contributes to several strands of literature. First, it contributes to earnings management literature. The incentives of earnings management are widely documented. My paper provides evidence that earnings management could be affected by political uncertainty. Second, it contributes to the literature of political uncertainty. There are several studies focusing on the effect of political uncertainty on economic activities (Darby et al., [2004]; Mei & Guo [2004]; Aaberge et al., [2017]; Gholipour [2019]), firm behavior (An et al., [2016]; Xu et al., [2016]; Zhou [2017]) and firm's information environment (Bird et al., [2017]; Chen et al., [2018]). Only a few reach to the area of accounting choices. Prior literature suggests a positive relationship between political uncertainty and accounting conservatism. My paper shows that political uncertainty can also affect another different dimension of accounting choices – earnings management, which involves much more complicated choices of managers and thus not detectable by firm's outside investors.

The rest of this paper is organized as follows. Second 2.2 reviews prior literature. Section 2.3 develops mechanisms. Section 2.4 introduces data, research model, and variables. Section 2.5 lists results. Section 2.6 provides robustness tests. Section 2.7 concludes the paper.

2.2 Literature Review

My paper is related to three streams of literature. First, my paper relates to the literature of political uncertainty. The first strand of previous studies in political uncertainty mainly focus on economic activity such as household savings (Aaberge et al., [2017]), real estate activities (Gholipour [2019]), stock market volatility (Mei & Guo [2004]), and public expenditure and growth (Darby et al., [2004]). Another widely available strand of previous studies in political uncertainty with regard to firm behavior such as cash holdings (Xu et al., [2016]), investment (An et al., [2016]), asset price (Zhou [2017]). A few number of previous studies of political uncertainty examine the effect of political uncertainty on firms 'information environment. These studies suggest a decreased level of available information (Chen et al., [2018]) and corporate transparency (Bird et al., [2017]) during the periods of political uncertainty induced by local government turnover or presidential election.

Second, my paper relates to the literature of earnings management. Earnings management in China is distinct from that in United States or European countries. In common law countries such as the United States or European countries, managers are insiders and often have the motivation to manage earnings for their job tenure and executive compensation, which depend on reported profits. While China is a civil law country, ownership is highly concentrated and hence the controlling shareholders are insiders who can effectively control the managers. In China, both the managers and controlling shareholders have incentives to manage the earnings for specific corporate event such as Initial Public Offerings (Kao, Wu and Yang [2009]), right issues (Yu, Du and Sun [2006], Chen and Yuan [2004]), or de-listing (Liu and Lu [2007]). Prior literature

find that local governments in China provide subsidies to help firms boost their earnings above the regulatory threshold (set by central government) of rights offering and delisting (Chen et al., [2008]).

Last, my paper closely relates to a very limited number of literature connecting uncertainty and firms 'accounting choices. Uncertainty has been documented to have a negative effect on earnings management. Yung & Root (2019) find evidence that policy uncertainty is associated with earnings management. Specifically, firms increase (decrease) earnings management when policy uncertainty is high (low). Ghosh & Olsen (2009) report that managers use discretionary accruals to reduce the variability in reported earnings more when firms operate in high environmental uncertainty. In common with the above two papers, this study examines the effect of uncertainty on earnings management. Nevertheless, the type of uncertainty I focus on is different. Instead of a broad policy or environmental uncertainty, this study examines the uncertainty induced by a specific event – local government turnover. Firm environment heavily relies on policy and the economy, the uncertainty of which are measured by complicated metrics thus they are more of interest to researchers but not investors. The measurement of the specific event - local government turnover examined in my paper is a simple indicator, which, however, can have substantial implication to investors or stock market regulators.

Two studies closely relate to my paper are Dai and Ngo (2018), and Ramanna and Roychowdhury (2010). These two studies use U.S. data. The former one finds that the asymmetric timeliness of news recognition increases with political uncertainty induced by the U.S. gubernatorial election, suggesting a positive relationship between political uncertainty and accounting conservatism. While the later one finds that politically

connected firms with more extensive outsourcing activities have more income-decreasing discretionary accruals in U.S. election year 2004. This paper differs from Dai and Ngo (2018) by using a different dimension of accounting choice – earnings management. Both accounting conservatism and earnings management introduce bias to financial reports. However, conservatism is just a recognition choice stemming from following accounting standards, whereas earnings management involves much more individual discretions of managers. The choice of conservatism has to be reported. Nevertheless, nothing is known by stakeholders of the specific discretions chosen by managers. This paper differs from Ramanna & Roychowdhury (2010) by collecting sample from a different setting – China, where as mentioned above, the incentives of earnings management are different, and the sample period covers more years from 2007 to 2017. Overall, more effort is needed to discover the association between earnings management and political uncertainty induced by local government turnover in China.

2.3 Earnings Management in Periods of Political Uncertainty: Mechanisms

There are a number of reasons to believe that earnings management can be changed in periods of local government turnover. First, political leadership turnover is often followed by reforms of local policies. For example, the new governor may change tax policies, discontinue ongoing firm projects and/or promote other projects, and/or change the allocation of government subsidies. These policies changes will in turn increase uncertainty about firms' performance through cash flows, cost of capital etc. As firm insiders, managers have better assessment in terms of how firms' performance can be influenced by these policies changes due to political leadership turnover. As a

consequence, the information asymmetry between firm insiders and outside investors can be increased. Such increased information asymmetry provides managers more opportunities to manipulate earnings since it will be easier for them to conceal the manipulation activities. Alternatively, the increased information asymmetry due to political leadership turnover can affect earnings management in the opposite way. Being aware of the increased information asymmetry, the investors will be more prudent and ask more information disclosure to increase transparency. Therefore, the cost of earnings management will be increased.

Second, firms may receive fewer subsidies from local government during political leadership turnover. In China, firms are closely tied to local government. Politicians' promotion is primarily dependent on local economy measurement such as regional GDP growth and unemployment rates (Li and Zhou 2005).[12] Since local revenue is predominantly derived from local firms, local governments are incentivized to prop up local firms. According to Chen et al. (2008), local governments provide subsidies to help firms boost their earnings to meet the central government's regulatory threshold of rights offering and delisting. According to Table 2.1, 70% or more of listed firms received government subsidies during the year 2007 to 2016. Every year, the local government receives budget from central government. Each city Party Secretary has the authority to determine the distribution and timing of government subsidies to firms under his/her

[12]The turnovers of city Party Secretary are dominated by appointments from governments of upper level. Municipal Chinese Communist Party (CCP) Congress, which is held every five years, also elects city Party Secretary.

jurisdiction. During the periods of a city Party Secretary turnover, economic policies affecting subsidies might

Table 2.1: Government Subsidies by Year

year	no. of firms	mean of subsidies (Millions)	total no. of firms	firms receiving subsidies (%)
2003	46	511.23	1287	3.57
2004	49	321.85	1377	3.56
2005	56	778.67	1381	4.06
2006	59	645.77	1434	4.11
2007	1099	1674.33	1570	70
2008	1237	1756.96	1625	76.12
2009	1423	1806.17	1718	82.83
2010	1555	254.99	2063	75.38
2011	1709	2867.51	2342	72.97
2012	1796	335.30	2494	72.01
2013	1835	3509.26	2489	73.72
2014	1926	3753.49	2613	73.71
2015	2247	4711.50	2827	79.48
2016	2460	4865.73	3052	80.60

be temporarily halted until the new city Party Secretary fully takes office, thus curtaining access to funds through the form of subsidies and forcing firms to manage earnings upward to meet the threshold of rights offering and delisting. The decrease in government subsidies may motivate firms to engage in an even higher level of income-increasing earnings management to meet the thresholds set by central government.

Third, a political cost hypothesis (Watts and Zimmerman 1978, 1986) suggests that in a local government turnover year, firms may manipulate accounting numbers to reduce costs related to adverse political scrutiny. It's highly likely that the new governor is unfamiliar with the city, and hence the political investigation activities will be increased at the beginning of his/her term. Highly profitable firms who often catch political leader's attention have incentives to manage earnings in order to reduce the probability and/or the amount of government-imposed wealth transfers (Makar & Alam [1998]).

The above mechanisms affect earnings management in different ways, hence the question will be empirically tested.

2.4 Data, Variables, and Methods

2.4.1 Data Collection

I use two main sources of data: (i) city Party Secretary turnover data, and (ii) listed firm's financial information. I manually collected city Party Secretary turnover information from China's most popular search engine (www.baidu.com). The key words

I use are "historical city Party Secretary" and the name of each city such as "Shanghai". Cities (6/248) with missing turnover information on Party Secretary are excluded.[13]

The second part is obtained from China Stock Market and Accounting Research (CSMAR) database.[14] My sample contains all A-share listed firms in both Shanghai and Shenzhen Stock Exchanges.[15] The sample period covers from 2007 to 2017. Following prior literature such as An et al., (2016), Xu et al., (2016), Zhou (2017), and Chen et al., (2018), standard exclusions are made on firm-year observations: (1) firms issuing other than A shares (i.e., B share, H share);[16] (2) firms in the financial industry;[17] (3) firm-year missing related financial information.[18]

After collecting the above data, I then merge them by matching the city, and fiscal year. Following previous studies (Chen et al., [2018]; Li et al., [2018]), I assign firms to cities according to the location of the firm's registration city. After removing the top and

[13]Future work will be made on missing Party Secretary turnover data.

[14]CSMAR is developed by the GTA Information Technology Company. CSMAR is one of the most popular financial databases for academic and practical purposes in China.

[15]A-shares are the stock shares of companies (1) with mainland China-base and (2) trading on the two Chinese Stock Exchanges, the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE). By September 2020, there are 1,639 A share firms in STE and 2,179 A-share firms in SZSE.

[16]B and H shares are denominated in foreign/Hong Kong currency. I exclude firms issuing B and H shares since these firms are subject to different regulation standards due to either different trading currency or different market regulation.

[17]China Securities Regulatory Commission (CSRC) classifies listed firms in China into 13 industries: agriculture, forestry and fishing; mining; manufacturing; utilities; construction; transportation; information and technology; finance; wholesale trade; real estate; services; entertainment; and conglomerates.

Financial firms are excluded since their operation and reports are very different from other firms. For example, financial firms such as banks have very high leverage ratio, which will affect the estimation of the regression model.

[18]CSMAR collects firms' information from their reports. The possible explanation of missing data in CSMAR is the missingness from firm's reports.

Table 2.2: Data Selection for Discretional accruals management (Real earnings management)

Process	No. of Observations
Total A-share firm observations from 2007 – 2017	21,841
- Financial firm observations	476
- Firm observations with missing financial information	1,111
- Firm observations with missing local government turnover data	1,824
- Firm observations with missing earnings management data	4,851 (2,831)
- Firm observations with extreme (>95% percentile or <5% percentile) earnings management	1,358 (1,560)
Final sample	12,221 (14,039)

Note: This table shows the detail of data selection process for accruals management analysis (real earnings management analysis).

bottom 5% of observations in the empirical distribution of the dependent variable, the number of observations remaining in the sample is 12,221 (14,039) for accruals management analysis (real earning management anslysis).19 The final sample for accruals management analysis covers 248 (1,937) cities (firms) and is unbalanced in terms of cities or firms. On average, a city (firm) is observed 8.7 (6.3) times. The balanced sample includes 65 (37) cities (firms). The final sample for real earnings management analysis covers 252 (2,140) cities (firms) and is unbalanced in terms of cities or firms. On average,

[19]Different trimming standards are applied for robustness check in section 2.6.

a city (firm) is observed 6.1 (6.6) times. The balanced sample includes 145 (263) cities (firms). Table 2.2 shows more detail about data collection process for accruals management (real earnings management).

2.4.2 Measurement of Accruals Management

Following previous studies (Bo and Wu 2009, Liu and Lu 2007), I use discretionary accruals to measure accruals management. In particular, I use a modified Jones model (Dechow et al. 1995) to measure discretionary accruals.

The modified Jones model is described in Eq. (2.1),

$$TA_{it} = \alpha_1 + \alpha_2(\Delta REV_{it} - \Delta REC_{it}) + \alpha_3 PPE_{it} + \alpha_4 IB_{it} + \varepsilon_{it} \quad (2.1)$$

where TA_{it} is total accruals (net income – cash flow from operations) of firm *i* in year *t*; ΔREV_{it} is change in revenue of firm *i* from year *t-1* to year *t*; ΔREC_{it} is change in receivables of firm *i* from year *t-1* to year *t*; PPE_{it} is property, plant, and equipment of firm *i* in year *t*; IB_{it} is income before extraordinary items of firm *i* in year *t*. All above variables including the intercept are scaled by lagged total assets, i.e., total assets in previous year.

The residual from Eq. (2.1) is the discretionary accruals component or abnormal accruals. That is, the component of total accruals that cannot be explained by firm activity is intentional (due to earnings management). Equation (1) is performed on cross-section data within industry classified by China Securities Regulatory Commission (CSRC) since the behavior of earnings management might be different by industry and year.

2.4.3 Measurement of Real Earnings Management

I use abnormal cash flow to proxy real earnings management. The approach from Roychowdhury (2006), Eq. (2.2) is used to estimate normal cash flow from operation.

$$cfo_{it} = \gamma_1 + \gamma_1 sale_{it} + \gamma_2 \Delta sale_{it} + \varepsilon_{it} \quad (2.2)$$

where cfo_{it} is cash flow from operation for firm *i* in year *t*; $sale_{it}$ is net sales for firm *i* in year *t*; $\Delta sale_{it}$ is the change in net sales from year *t-1* to year *t* for firm *i*. All variables including the intercept are scaled by lagged total assets, i.e., total assets in previous year.

The residual ε_{it} of Eq. (2.2) is the abnormal cash flow from operation, the component of cash flow from operation that cannot be explained by net sales or change of net sales. Similarly to Equation (1), Eq. (2.2) is performed on cross-section data within industry classified by CSRC.

2.4.4 Explanatory Variables

To examine how political uncertainty influences, I constructed the dummy variables: *D*. For each firm-year observation, *D* takes the value of one if the firm's registration city experiences a Party Secretary turnover and zero otherwise. The average value of *D* for a city across the sample period from 2007 to 2017 indicates the level of political uncertainty for that city. A higher average value of *D* suggests a higher level of political uncertainty. The distribution of average Party Secretary turnover rate across cities is plotted in Figure 2.1. The average Party Secretary turnover rate is 0.3 for 40% of cities. Around 25% of cities have a chance of 20% or 40% to change Party Secretary in a given year. Another 10% of cities have quite stable or unstable Party Secretary turnover.

Following the literature (Xu et al. 2016), the exact month of the newly appointed official taking office is used to determine the official's first year in office. Specifically, the indicators take the value of one for current (following) year if the newly appointed official taking office in the first (second) half year.

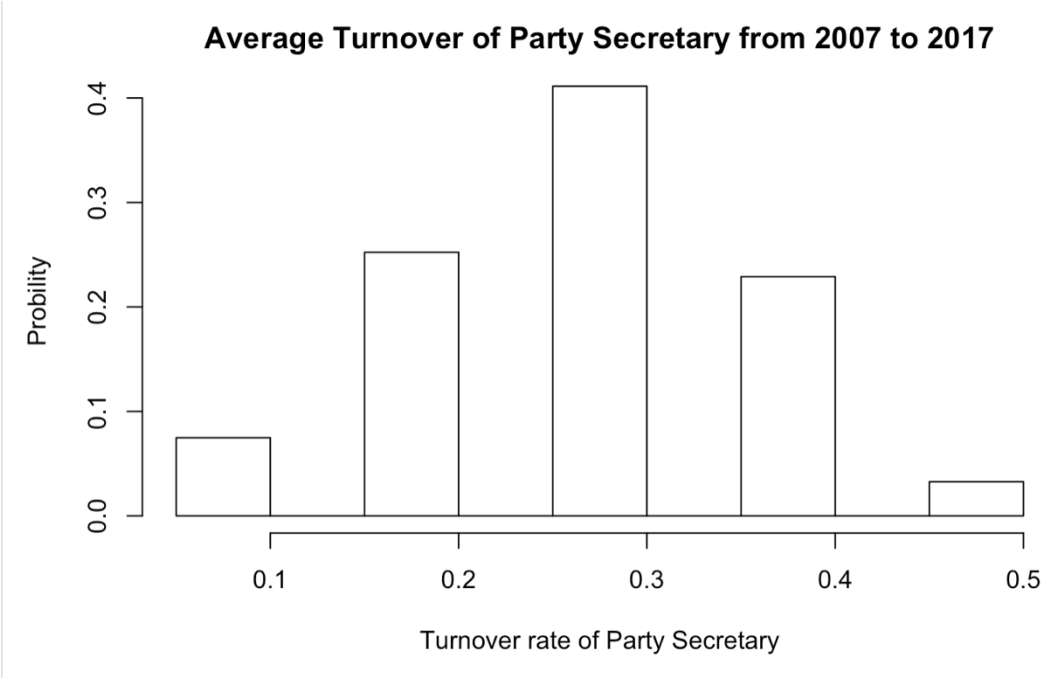

Figure 2.1: Distribution of Average Turnover Rate of Party Secretary from 2007 to 2017

Firm characteristics that are common to the earnings management literature (Ghosh & Olsen [2009]; Cohen & Zarowin [2010]; Kuo et al., [2014]; Yung & Root [2019]) are included to address omitted variable bias. Firm characteristics included are: logarithm of firm size (*size*); debt scaled by lagged total assets (*lev*); cash flow from operation scaled by lagged total assets (*cfo*); and firm industry (*ind*). Balanced tests are conducted in section 6 to reassure above firm characteristics are not outcome of local Party Secretary turnover.

2.4.5 Empirical Model

To examine the impact of political uncertainty on accruals management, I apply the following two way fixed effect model:

$$DA_{cit}=\theta D_{ct} + \beta_c + \beta_t + \beta_i + \beta X_{cit} + \varepsilon_{cit}, \quad (2.3)$$

where DA_{cit} is discretionary accruals measured from Eq. (2.1) of firm *i* in city *c* in year *t*; D_{ct} is the indicator of political uncertainty in city *c* in year *t* (coded one if there is change of Party Secretary and zero otherwise); β_c are city fixed effects; β_t are year fixed effects, β_i are firm fixed effects; and X_{cit} includes control variables, ε_{cit} is a random error term that can be correlated within a city across years. The two-way standard errors clustered on cities are estimated. Variable definition involved in this paper is available in Table 2.3.

Table 2.3: Variable Definitions for Earnings Management Analysis

Variable	Definition
DA	Discretionary accruals measured from Eq. (2.1). A higher value of *DA* indicates higher level of discretionary earnings management.
Abcfo	Abnormal cash flow from operation measured from Eq. (2.2). A higher value of *Abcfo* indicates higher level of real earnings management.
$D_{c,t}$	Indicator of Party Secretary turnover taking the value of 1 if city *c* experiences Party Secretary turnover in year *t*.
B/M	Book-to-Market Ratio, i.e. the ratio of the book value of equity to the market value of equity.
Size	Logarithm of firms' asset.
Lev	Debt scaled by lagged total assets.
cfo	Cash flow from operation scaled by lagged total assets.
Ind	Firm industry categorized by China Securities Regulatory Commission (CSRC).
TA	Total accruals equaling to net income – cash flow from operations.
sale	Firms' net sales revenue scaled by lagged total assets.
$\Delta sale$	Change of net sales revenue scaled by lagged total assets.
ΔREV	Change of revenue scaled by lagged total assets.
ΔREC	Change in account receivables scaled by lagged total assets.
PPE	Property, plant, and equipment scaled by total assets.

Similarly, Eq. (2.4) is used to examine the impact of political uncertainty on real earnings management.

$$abcfo_{cit}=\theta' D_{ct} + \beta'_c + \beta'_t + \beta'_i + \beta' X_{cit} + \varepsilon'_{cit}, \quad (2.4)$$

where $abcfo_{cit}$ is abnormal cash flow from operation measured from Eq. (2.2) for firm i in city c in year t.

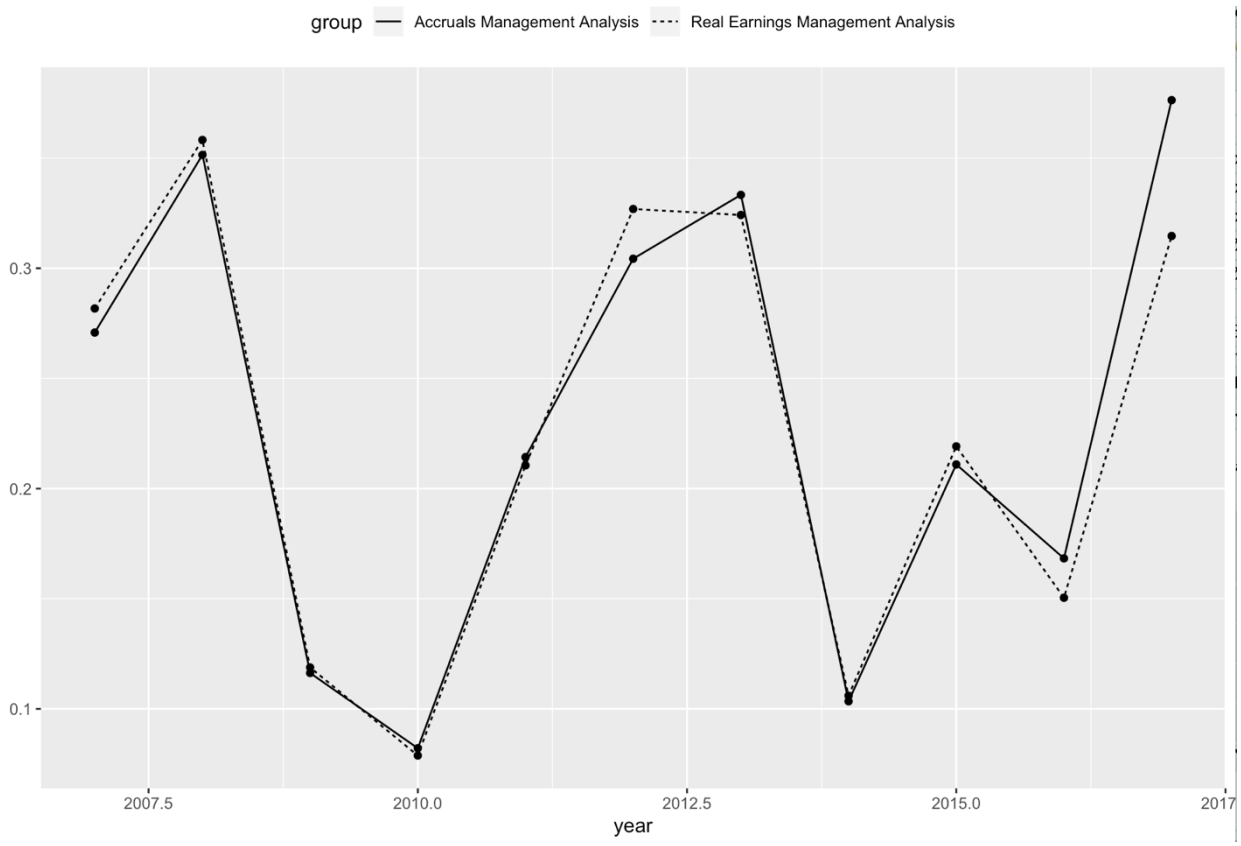

Figure 2.2: Ratio of Cities with Party Secretary Turnover by Year

The effect of political uncertainty can be identified using year-to-year variation within cities driven by Party Secretary turnover (Figure 2.2), controlling for city fixed effects, year fixed effect, individual firm fixed effect, and time-varying firm characteristics.

2.5 Results

2.5.1 Descriptive Statistics

Table 2.4: Sample Description of City Party Secretary Turnover for Accruals Management Analysis (Real Earnings Management Analysis)

year	No. of observations	No. of cities	Distribution of Party Secretary turnover (%)
2007	910 (869)	192 (180)	29 (35)
2008	1,070 (958)	202 (187)	31 (32)
2009	1,120 (1,007)	215 (202)	13 (13)
2010	1,140 (1,028)	207 (203)	17 (17)
2011	1,269 (1,183)	210 (209)	19 (20)
2012	1,561 (1,317)	230 (208)	27 (27)
2013	1,631 (1,410)	240 (219)	37 (37)
2014	1,565 (1,398)	232 (217)	10 (10)
2015	1,612 (1,413)	237 (219)	24 (24)
2016	192 (1,551)	101 (226)	20 (26)
2017	151 (1,905)	93 (232)	34 (41)
Total	12,221 (14,039)	248 (252)	Average: 23 (26)

Notes: This table presents sample distribution by year, and city Party Secretary turnover by year. Column 4 shows the percentage of observations with Party Secretary turnover by year.

Table 2.4 presents sample distribution by year, and city Party Secretary turnover by year. Column 4 shows the percentage of observations with Party Secretary turnover by year. The average share of cities exposed to a city Party Secretary turnover is 23% and 26% for accruals management analysis and real earnings management analysis, respectively.

Table 2.5: Summary Statistics for Accruals Management Analysis (Real Earnings Management Analysis)

Variable	Min	25th	Mean	75th	Max	Sd.
Outcome						
Discretionary Accruals	-0.39	-0.13	-0.07	0.01	0.18	0.11
Treatment						
Party Secretary Turnover	0.00 (0.00)	0.00 (0.00)	0.23 (0.26)	0.00 (1.00)	1.00 (1.00)	0.42 (0.44)
Firm Characteristics						
Abnormal Cash Flow	-0.13	-0.03	0.03	0.09	0.26	0.09
Logarithm of total assets	15.58 (15.42)	21.08 (21.24)	21.92 (22.08)	22.63 (22.79)	27.70 (28.07)	1.21 (1.21)
Leverage	0.01 (0.01)	0.36 (0.36)	0.83 (0.57)	0.74 (0.73)	2054.2 (22.78)	22.7 (0.45)
Cash Flow	-0.06 (0.02)	0.07 (0.08)	0.19 (0.15)	0.23 (0.21)	118.40 (0.49)	1.14 (0.09)
Book/Market	0.00 (0.00)	0.42 (0.43)	0.60 (0.60)	0.79 (0.78)	6.55 (6.55)	0.24 (0.24)

Notes: This table shows summary statistics of dependent variable discretionary accruals, abnormal cash flow from operation, Party Secretary turnover, and control variables in Eq. (2.3)(2.4).

Table 2.5 lists summary statistics involved in Eq. (2.3)(2.4) - the two way fixed effect model. Firm's discretionary accruals (abnormal cash flow from operation) ranges from -0.39 (-0.13) to 0.18 (0.16). The range of firm size for accruals management analysis is 12.12 with mean 21.92; while the range of firm size for real earnings management analysis is 12.7 with mean 22.08. The standard deviation of firm leverage is 22.70 for accruals management analysis. This large standard deviation is driven by a small number (n = 2) of observations with extreme leverage. The results remain qualitatively unchanged after removing observations with extreme leverage. A firm's cash flow from operation for accruals management (real earnings management) has minimum value -0.07 (0.02), mean value 0.19 (0.15), and maximum value 118.40 (0.49). The ratio of firm's book value to market value range from 0.00 to 6.55, with mean value 0.6 for both types of earnings management analysis.

2.5.2 Results of Two-Way Fixed Effect Model

Table 2.6 presents the results of Eq. (2.3-2.4). Column (1-2) show the results of accruals management analysis. Column (3-4) show the results of real earnings management analyais. Column (1)(3) include indicator of political uncertainty, control variables, city effect, firm effect, and year effect. The coefficient estimate on Party Secretary turnover for accruals management analysis is 0.005, which is distinguishable from zero at significance level 0.05. The result remains qualitatively unchanged after clustering standard error by city (column 2). The coefficient estimate of Party Secretary turnover for real earnings management is 0.000, which is indistinguishable from zero.

In summary, table 2.6 suggests that firms on average have a higher level of discretionary accruals by 0.005 during years of Party Secretary turnover. In Eq. (2.1), all

variables are scaled by total assets, meaning 0.5% more of total assets fall into discretionary accruals during the year of a city Party Secretary turnover. Nevertheless, real earnings management does not change during the year of local Party Secretary turnover.

Table 2.6: Effect of City Government Turnover on Earnings Management - Two-Way Fixed-Effects Models

	Accruals Management		Real Earnings Management	
	(1)	(2)	(3)	(4)
Party Secretary turnover	0.005** (0.002)	0.005** (0.002)	0.00009 (0.00007)	0.00009 (0.002)
controls	Yes	Yes	Yes	Yes
city effect	Yes	Yes	Yes	Yes
firm effect	Yes	Yes	Yes	Yes
year effect	Yes	Yes	Yes	Yes
cluster	No	Yes	No	Yes
Sample No.	12,221	12,221	14,039	14,039
Adj. R2	0.33	0.34	0.86	0.86

Notes: This table presents the coefficient estimate on local Party Secretary turnover of two way fixed effect model Equation (3-4). Standard errors are shown in parentheses. Column (1-2) show the results of accruals management analysis. Column (3-4) show the results of real earnings management analysis. Column (1)(3) include indicator of political uncertainty, control variables, city effect, firm effect, and year effect. Column (2)(4) report coefficient of PS and its significance level after clustering standard error by city. ***, **, * indicate significance level at 1%, 5%, and 10% respectively.

2.5.3 Event Study

The effect of local government turnover on a firm's accruals management could last in a long period given that the local policy changes can be effect in long run. Alternatively, firms can find other capital resources for government subsidies substitutes. In this way, the changed allocation of government subsidies due to local government turnover would not affect a firm's accruals management in long run. To test if the effect of local government turnover on a firm's accruals management occurs in a short or long run, an event study is performed. Specifically, I use leads and lags of local Party Secretary turnover (Eq. [2.5]). The effect of Party Secretary turnover may continue after the year of turnover. However, it should not appear prior the turnover considering its randomness.

$$DA_{cit}=\sum_{k=-3}^{3}\rho_k D_{c,t}^{k}+\varphi_c+\varphi_{ind}+\varphi_t+\alpha \mathrm{X}_{cit}+\varepsilon_{cit} \tag{2.5}$$

where the treatment dummy $D_{c,t}^{k}$ equals to 1 if city *c* experienced Party Secretary change k years from year *t* and 0 otherwise. This definition implies that $k=0$ represents the first year following the Party Secretary turnover, and $k=-1$ is the year prior to treatment. All other variables are defined the same as in Eq. (1.2).

Table 2.7 shows the results of event study and Figure 2.3 plots coefficient estimates and confidence interval of event study. The results suggest that Party Secretary turnover has no lead or lag effect on discretionary accruals.

2.6 Robustness Checks

In this section, I perform several tests to check the robustness of the main results. Reassuringly, the results are not sensitive to alternative measurement of earnings management, and event study.

Table 2.7: Effect of City Government Turnover on Earnings Management - Event Study

	Coefficient Estimate	Adj. R^2
	(1)	(2)
$D_{c,t}^{-3}$	-0.002 (0.002)	0.34
$D_{c,t}^{-2}$	-0.003 (0.003)	0.34
$D_{c,t}^{-1}$	-0.0002 (0.003)	0.34
$D_{c,t}^{1}$	-0.001 (0.002)	0.34
$D_{c,t}^{2}$	-0.004 (0.002)	0.34
$D_{c,t}^{3}$	0.002 (0.002)	0.34
Sample No.	12,221	

Notes: This table shows the results of event study as shown in Equation (5), where $D_{c,t}^{-3}$, $D_{c,t}^{-2}$, $D_{c,t}^{-1}$, $D_{c,t}^{1}$, $D_{c,t}^{2}$, $D_{c,t}^{3}$ are the indicators of Party Secretary turnover in year t – 3, t - 2, t - 1, t + 1, t + 2, and t + 3 respectively. City fixed effect, year fixed effect, and industry fixed effect are included. Standard errors are clustered by city. Standard error of coefficient estimates are shown in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

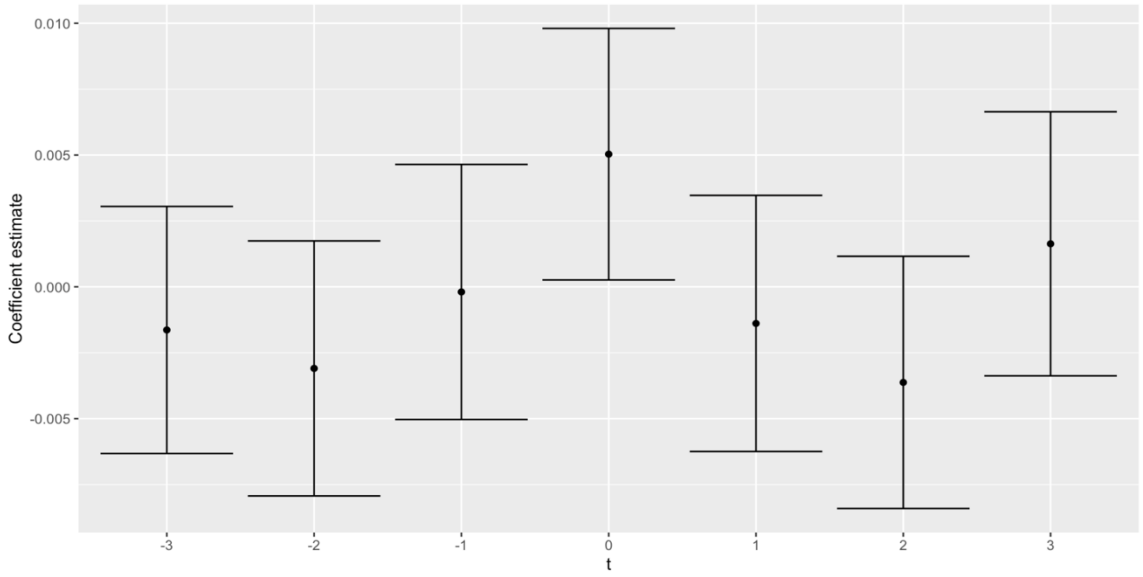

Figure 2.3: Coefficient Estimates and Confidence Interval of Event Study

2.6.1 Alternative Measurement of Discretionary Accruals

First, I use alternative measurement of discretionary accruals based on Jones model (Eq. [2.6]). Compared to the modified Jones model, Eq. (2.6) does not subtract account receivables from sales revenue thus Jones model assumes that discretion is not exercised over revenue in either the estimation period or the event period, while modified Jones model assumes that all changes in credit sales in the event period result from earnings management (Dechow et al., [1995]).

$$TA_{it} = \alpha'_1 + \alpha'_2 \Delta REV_{it} + \alpha'_3 PPE_{it} + \alpha_4 IB'_{it} + \varepsilon_{it} \quad (2.6)$$

All variables are defined the same as the in Eq. (2.1). Table 2.8, column (1) shows the result of this robustness check. The coefficient estimate of the city Party Secretary turnover is 0.004, which is distinguishable from zero at significance level 0.1.

2.6.2 Matched Sample

According to Table 2.3, the average value of Party Secretary is 0.23, indicating 23% of the sample falls in treatment group. To control the imbalance of the number of observations between treatment group and comparison group, I match each treatment firm

Table 2.8: Effect of City Government Turnover on Earnings Management - Robustness Checks

	Alternative Measurement	Matched sample
	(1)	(2)
Party Secretary turnover	0.004** (0.002)	0.007** (0.003)
city	Yes	Yes
firm	Yes	Yes
year	Yes	Yes
industry	Yes	Yes
Cluster	Yes	Yes
Sample No.	12,221	5,680
Adj. R^2	0.31	0.47

Notes: This table represents the results of robustness checks. Column (1) shows the results using alternative measurement of earnings management based on Jones model. Column (2) shows the results of matched sample, where each observation in treatment group is matched with an observation in comparison group with similar firm size. Standard errors of coefficient estimates are included in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

(a firm with party secretary turnover) with a comparison firm having closest firm size in the same year and industry.

Table 2.8, column (2) shows the result of matched sample. The coefficient of Party Secretary turnover is 0.006, which is distinguishable from zero at significance level 0.05.

2.6.3 Balanced Tests

Balanced tests are conducted to reassure firm characteristics for accruals management analysis are not potential outcomes of local Party Secretary turnover. The causal interpretation of the model result will be affected if any control variable is a potential outcome of the treatment (Pei et al., [2019]). Specifically, simple linear regression using

Table 2.9: Effect of City Government Turnover on Earnings Management - Balanced Tests

	Coefficient Estimate	Adj. R^2
	(1)	(2)
Logarithm of total assets	-0.026 (0.026)	0.32
Cash Flow From Operation	-0.002 (0.024)	0.94
Leverage	-0.24 (0.487)	0.62

Notes: This table represents the results of balanced tests. Column (1) shows estimated coefficient on Party Secretary turnover for the simple linear regression with firm characteristics as dependent variable. Standard errors of each coefficient estimate are shown in parentheses. Column (2) shows corresponding adjusted R^2. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

each firm characteristics as dependent variable and local Party Secretary turnover as independent variable are estimated. The coefficients on local Party Secretary turnover are

expected to be indistinguishable from 0. Table 2.9 reports the results of the balanced tests, which reassures that no firm characteristics is potential outcome of my treatment.

Table 2.10: Effect of City Government Turnover on Earnings Management - Different Trimming Standards

	No Trimming	Trimming	
	(1)	<10%, >90% (2)	<5%, >95%, extreme lev (3)
Party Secretary turnover	-0.001 (0.006)	0.003* (0.002)	0.005** (0.002)
city	Yes	Yes	Yes
firm	Yes	Yes	Yes
year	Yes	Yes	Yes
industry	Yes	Yes	Yes
Sample No.	13,581	10,865	12,221
Adj. R^2	0.2	0.30	0.35

Notes: This table represents the results of different trimming standards. Column (1) shows the results with no trimming. Column (2) shows the results after trimming the top and bottom 10% of data by distribution of dependent variable *da*. Column (3) shows the results after trimming the top and bottom 5% of data by distribution of dependent variable *da*, and observations with extreme value of control variable *lev*.

***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

2.6.4 Different Trimming Standards

Table 2.10 shows the results based on different trimming standards for accruals management analysis. The main results are based on sample after trimming the top and bottom 5% of observations by distribution of dependent variable. Without trimming any observation, the coefficient of Party Secretary turnover is -0.001, which is not distinguishable from zero. After trimming the top and bottom 10% of observations by distribution of dependent variable, the coefficient of Party Secretary turnover is 0.003, which is distinguishable from zero at significance level 0.1. Table 2.5 suggests a high standard deviation of leverage due to extreme values. After removing those extreme values, the results remain qualitatively unchanged.

2.6.5 Falsification Exercises

Last, two more robustness checks are added for accruals management analysis: leave one out exercise, and treatment status re-shuffling exercise. For leave one out exercise, I sequentially exclude each one of 248 cities in the sample, and re-estimate the two-way fixed effect model to ensure that the results are not sensitive to any particular city.

For treatment status re-shuffling exercise, I randomly re-assign the indicator of Party Secretary turnover across city and year, and re-estimate the baseline two-way fixed effect model. This re-assignment is repeated for 100 times. The logic behind this exercise is that, if I am capturing the 'true' effect of Party Secretary turnover, the main estimate of Party Secretary turnover should be an outlier relative to the placebo point estimates. In Figure 2.4, the main effect reflected by the red dot does not stand out in an obvious way. However, the vertical red line showing the main effect in Figure 2.5 suggests that the main

effect falls in the right tail of the histogram. Therefore, the main result of accruals management analysis passes the falsification exercise of treatment status re-shuffling.

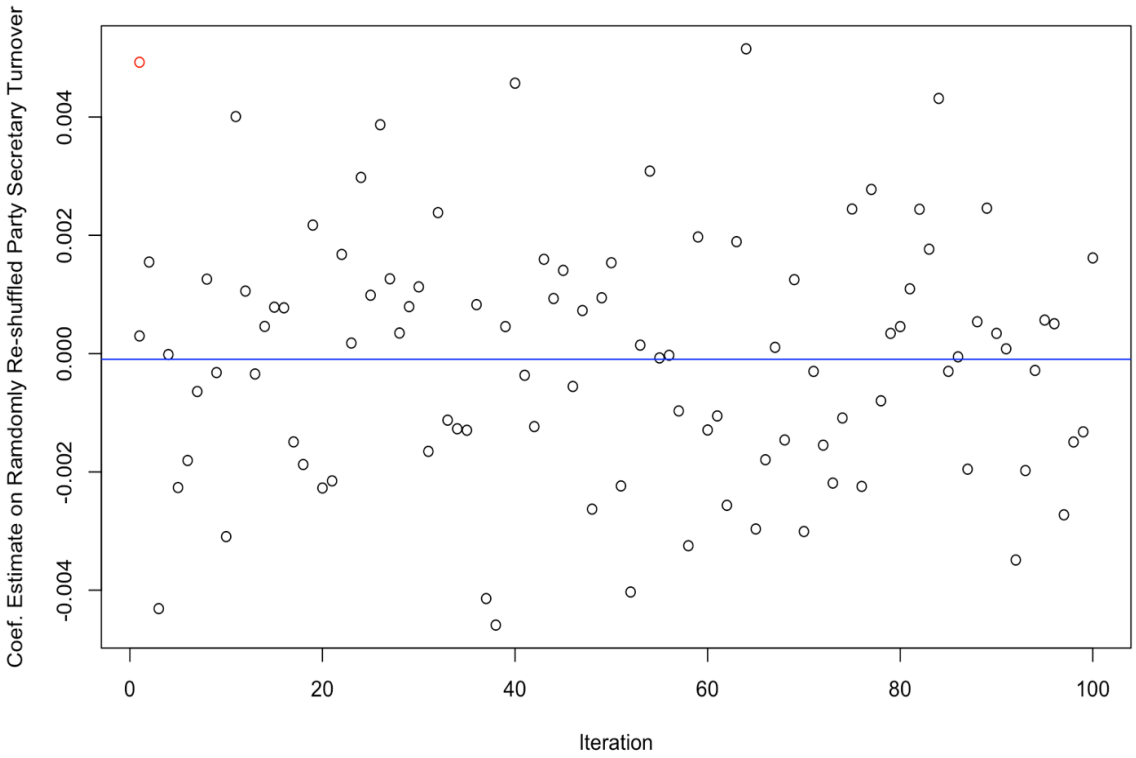

Figure 2.4: Falsification Exercise

Notes: For this falsification exercise, Party Secretary turnover is re-assigned 100 times, and the baseline two-way fixed effect model is re-estimated for each re-assignment. The red point reflects the main estimate of Party Secretary turnover. The blue horizontal line indicates the mean value of the estimates of placebo test.

2.7 Conclusion

Political uncertainty has been shown to influence both economic activities and firms. However, less is known about the effect of political uncertainty on firms' earnings management. Using accrual-based earnings and real earnings management measurement,

my paper extends the lines of both political uncertainty and earnings management literature.

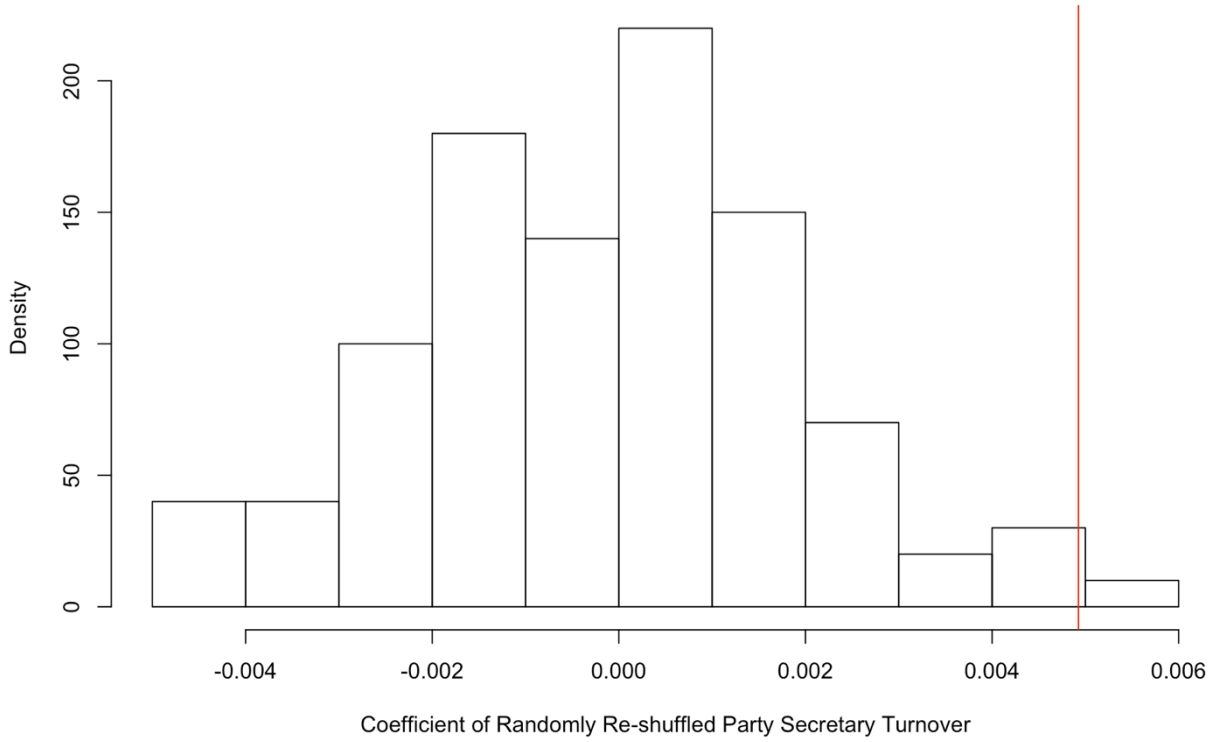

Figure 2.5: Histogram of Falsification Exercise

Notes: This figure shows the results of falsification exercise in another way using histogram instead of scatter plot. The vertical line reflects the main estimate of Party Secretary turnover.

Using Chinese data from 2007 to 2017, the results show that discretionary accruals increase significantly in the year of city Party Secretary turnover. Specifically, discretionary accruals measured by Modified Jones model increase by 0.005 in the year of city Party Secretary turnover. The results are robust to a wide range of robustness checks.

Nevertheless, real earnings management measured by abnormal cash flow operations is not affected by local Party Secretary turnover.

The event study shows that discretionary accruals do not change before the year of city Party Secretary turnover. While in year $t + 2$, discretionary accruals decrease by 0.005. A possible explanation is that, in year t (year of city Party Secretary turnover) firms manipulate earnings upward to meet the thresholds set by central government. Expecting subsidies in year $t + 1$, firms 'earnings management returns to normal level. In year $t + 2$, firms manipulate earnings downward to ask for more subsidies. Overall, the event study suggests no lead effect and a reversed lag effect of city Party Secretary turnover on earnings management.

The key policy implication from this paper is that in an emerging market contest, thresholds set by central government can lead to biased earnings reports by inducing firms to manage earnings upward. The reliance of city Party Secretary's promotion on local economy provides further support for the behavior of earnings management. Thus, the findings should be informative to governments, highlighting the importance of censoring subsidy recipients 'financial reporting quality. At the same time, the findings provide a vital warning for investors when they refer to financial reports to make investment decisions.

My results may or may not extend to developed markets such as U.S. or European countries where distortionary impact of political regimes can be prevented by legal institutions and mature market mechanisms. My mechanisms may not apply to these markets since incentives for earnings management are different due to difference in ownership structure and market regulation. Developing markets such as certain Asian

countries (ex. North Korea) might have similar trend due to similarly highly politicized setting and highly concentrated ownership.

CHAPTER 3

POLITICAL UNCERTAINTY AND GOVERNMENT SUBSIDIES

3.1 Introduction

Government subsidies, direct monetary or non-monetary assets usually in the form of a cash payment from the government or a targeted tax cut, are a common phenomenon in both developed and emerging countries. These subsidies are generally used by governments to intervene in the economy. Governments usually grant companies subsidies as fiscal subsidies or tax allowances to inhibit the occurrence of undesired economic outcomes such as bankruptcy and financial crisis (Bergstrom [2000]; Humphries [2003]; Harris & Trainor [2005]; Yue et al., [2010]). Political connection (Wu et al., [2012]; Tao et al., [2017]; Aobdia et al., [2018]; Jiang et al., [2018]; Liu et al., [2018]) and financial distress (Masulis & McConnell [2006]; Tao et al., [2017]) have been documented as determinants of government subsidies in the prior economics and finance literature.

In this paper, I examine another determinant of government subsidies – political uncertainty, using data collected from Shanghai and Shenzhen Stock Exchange Market in China. I measure political uncertainty as the top government leader's turnover at the city level. The bureaucratic hierarchy of the Chinese government consists of five layers: central, province, city, county, and township. City level governments are often studied in the existing literature on political uncertainty (An et al., [2016]; Xu et al., [2016]; Zhou et al., [2017]) as they have the authority to make local decrees and rules and thus have substantial impact on local economies. Further, the turnover of city level governors is more random (which is discussed later) compared to the turnover of presidential and provincial

governors. The leading governors at the city and province level are the Party Secretary and the Mayor. As the leader of the local bureaucratic system, the city Party Secretary is in charge of local economic and political affairs. The mayor on the other hand concentrates more on daily affairs and implementing policies. Therefore, it is reasonable to expect that the turnovers of Party Secretary are more likely to affect local development.

The turnover of the city and province Party Secretary could occur due to either election or appointment. Specifically, the Municipal China Communist Party (CCP) Congress, which is held every five years, elects the Party Secretary. One term for a Party Secretary would last for five years and a maximum of two consecutive terms are allowed. Practically, few turnovers of the city or province Party Secretary occur via such elections but instead are dominated by appointments from central governments. Political connection is more important in the appointment of provincial leaders (Opper & Brehm [2007]), while economic performance plays a key role in the promotion of city officers (Jia et al., [2015]; Chen & Kung [2016]; Landry et al., [2017]). In contrast, according to the current government turnover system, the President of China is elected by the National People's Congress, which is comprised of 2987 members. Presidential terms last five years. In practice, the incumbent President is nominated by a previous President. For example, the current President Xi was appointed by the fourth president President Jiang, and previous President Hu (the fifth president) was appointed by the third president President Deng.

The motivations for government subsidies in China are similar to those in U.S.. Chinese governments often subsidize listed companies, i.e. companies with shares publicly tradable in the Shanghai or Shenzhen Stock Exchange Market, especially those falling into financial distress or facing the risk to be de-listed due to a net loss for a continuous three

years period. Compared to other ways to support listed firms, such as granting taxation preference or favoring listed firms in the project approval process, government subsidies are more direct and convenient. Each fiscal year, the central government sets specific fiscal policy on government subsidies, which are primarily used for strategic areas such as agriculture, public utilities, and high-tech industries, and to help financially distressed firms (Chen et al., [2008]). The central government grants local governments the discretion of subsidies allocation in their own jurisdictions.

Local government turnover can affect government subsidies received by local firms primarily through change of government fund allocations, which is often followed by the turnover of local governor leader, i.e. Party Secretary. At the beginning of each fiscal year, which is the same with calendar year in China, the local government receives budget from central government. The city Party Secretary has the discretion with regard to the distribution and/or timing of government subsidies. Thus, the manner in which the policies are adopted is based entirely on the preference of the Party Secretary. Government subsidy allocation can be altered in two ways. First, during the year of a city Party Secretary turnover, economic policies affecting subsidy allocation might be temporarily halted until the new city Party Secretary fully takes office. This way, government subsidies received by local firms will be delayed. Since the central government distributes funds to provinces, which then determines the funds allocation to cities each year, local firms might receive decreased government subsidies during the year of the local government turnover but and increased amount in the next one or few years. Second, the new official might have different preference with regard to subsidy allocation. The new official can increase subsidies allocation to boost his/her performance for future promotion. In summary, I

hypothesize an increase of government subsidies in post periods of the local government turnover while the amount of government subsidies received by local firms during the year of local government turnover might be unchanged or decreased.

To examine how political uncertainty affects government subsidies, I collect all firms publicly listed on the Shanghai and Shenzhen Stock Exchange Market from 2007 to 2018. My final sample includes 18,326 firm year observations and covers 259/294 cities. Based on two-way fixed-effect models, the empirical analyses show that government subsidies remain qualitatively unchanged during the year of local government turnover. The event study suggests no substantial change of government subsidies received by firms in pre and post local government turnover years. The neutral results indicate that the change of city Party Secretary does not affect allocation policy in terms of government subsidies.

My study has implications for Chinese firms seeking fiscal support from government. Publicly listed firms can raise capital from the stock market. However, the Chinese Securities Regulatory Commission (CSRC) sets stringent profitability requirements before firms are able offer and delist in the stock market so this option is not easily available to all firms, thus government subsidies are very important for many financially distressed firms. My results show that firms' financial stability is not affected by local government turnover through restricting/increasing financial access to firms.

The remainder of my paper is organized as follows. Section 3.2 reviews prior literature. Section 3.3 presents the empirical research design. Section 3.4 reports the main results. Section 3.5 shows the results of robustness checks. Section 3.6 concludes the study.

3.2 Literature Review

My paper relates to studies on political uncertainty, and government subsidies. Political uncertainty has been widely documented to affect economic outcomes such as household savings (Aaberge et al., [2017]), real estate activities (Gholipour [2019]), stock market volatility (Mei & Guo [2004]), and public expenditure and growth (Darby et al., [2004]). Recent studies examine the association between local government turnover and firm behavior such as cash holdings (Xu et al., [2016]), investment (An et al., [2016]), asset price (Zhou [2017]), and firms' earnings quality (Ghosh & Olsen [2009], Dai & Ngo [2018], Lai [2021a], Yung & Root [2019], Lai [2021b]). Generally, studies to date demonstrate that political uncertainty reduces measures of economic activity, firms' investment, and earnings quality.

There are two strands of literature on government subsidies. The first strand explores the impact of subsidies on economic outcomes. Government subsidies have been found to improve firm value (Lee et al., [2014]), firm performance (Tzelepis & Skuras [2004]; Balsari & Ucdogruk [2008]), research and design (R&D) investment (Yu et al., [2016]), and productivity (Harris & Trainor [2005]). My study adds to the second strand of literature that examines determinants of government subsidies. Political connection (Wu et al., [2012]; Tao et al., [2017]; Aobdia et al., [2018]; Jiang et al., [2018]; Liu et al., [2018]) and financial condition (Faccio et al., [2006]; Tao et al., [2017]) have been found to affect the amount of government subsidies.

Government subsidies have important and direct financial benefit to financially constrained firms. My paper contributes to prior literature by being the first study

investigating whether political uncertainty can affect the amount of government subsidies obtained by firms.

3.3 Data, model, and variables

3.4.1 Data

I manually collect city Party Secretary turnover information from the largest search engine in China: Baidu (www.baidu.com)[1]. Specifically, I use "historic Party Secretary" and the name of each city, such as "Shanghai," as keywords. After entering these terms, the search engine lists search results providing the term period (i.e., beginning month/year, and end month/year) and the name of the Party Secretary for the specific city. I extract this information for cities with registered firms over my study period. After collecting the historic term period and names of the Party Secretary, I then code city Party Secretary turnover as binary indicator variable. The coding method is discussed later in variable section.

My financial data include government subsidies and registration city for listed firms, and are downloaded from the China Stock Market and Accounting Research (CSMAR) database.[2] My sample contains all A-share listed firms in both the Shanghai and

[1]According to statista.com, Baidu.com has 75.54% of market share among search engines in China as of Marsh 2021 based on pageview.

[2]CSMAR is developed by the GTA Information Technology Company. CSMAR is one of the most popular financial databases for academic and practical purposes in China.

Shenzhen Stock Exchanges.[3] The sample period covers 2007 to 2018. Following prior literature such as An et al., (2016); Xu et al., (2016); Zhou (2017); and Chen et al., (2018), standard exclusions are made on firm-year observations: (1) firms issuing other than A shares (i.e., B share, H share),[4] (2) firms in the financial industry,[5] and (3) firm-year missing related financial information.[6]

Table 3.1: Data Selection for Government Subsidies Analyses

Process	No. of Observations
Total A-share firm observations from 2007 - 2018	24,659
- Financial firm observations	566
- Firm observations with missing subsidy data	3,797
- Firm observations with missing local government turnover data	1,684
- Firm observations with missing financial characteristics data	286
Final sample	18,326

[3]A-shares are the stock shares of companies (1) with mainland China-base and (2) trading on the two Chinese Stock Exchanges, the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE). By September 2020, there are 1,639 A share firms in STE and 2,179 A-share firms in SZSE.

[4]B and H shares are denominated in foreign/Hong Kong currency. I exclude firms issuing B and H shares since these firms are subject to different regulation standards due to either different trading currency or different market regulation.

[5]China Securities Regulatory Commission (CSRC) classifies listed firms in China into 13 industries: agriculture, forestry and fishing; mining; manufacturing; utilities; construction; transportation; information and technology; finance; wholesale trade; real estate; services; entertainment; and conglomerates.

Financial firms are excluded since their operation and reports are very different from other firms. For example, financial firms such as banks have very high leverage ratio, which will affect the estimation of the regression model.

[6]CSMAR collects firms' information from their reports. The possible explanation of missing data in CSMAR is the missingness from firm's reports.

Finally, I merge financial data with local government turnover information by registration city. Data selection process is reported in Table 3.1.

3.4.2 Methods

I estimate the following two-way fixed effect (TWFE) model:

$$Y_{c,i,t} = \alpha_0 + \alpha_1 D_{c,t} + \alpha_2 X_{c,i,t} + \alpha_3 \text{subsidy\_change} + \theta_{ind,i} + \tau_t + \beta_c + \varepsilon_{c,i,t} \quad (3.1)$$

where $Y_{c,i,t}$ is the logarithm of government subsidies received by firm *i* in city *c* in year *t* in 2015 dollars. $D_{c,t}$ is indicator of Party Secretary turnover of city *c* in year *t*, which equals to 1 if city *c* experienced Party Secretary turnover in year *t* and 0 otherwise. Average value of D_c in the sample period is an indicator of political uncertainty extent for city *c.* A higher average value of *D* suggests higher political uncertainty. Figure 3.1 plots the distribution of average Party Secretary turnover rate across the sample period from 2007 to 2018. A majority of cities (80%) have intermediate chance (17% to 33%) of Party Secretary turnover in a given year. Around 6% of cities have quite stable Party Secretary turnover. The rest of cities (11%) have higher uncertainty (42%) in terms of Party Secretary. $X_{c,i,t}$ are firm characteristics used in prior government subsidies literature (e.g., cash flow from operation scaled by total asset). *subsidy_change* is a dummy variable indicating policy change regarding government subsidies, which equals to 1 for years in and after 2017 and 0 for previous years.[7] $\varepsilon_{c,i,t}$ is the error term. Industry fixed effects ($\theta_{ind,i}$), city fixed effect (β_c), and year fixed effects (τ_t) are included in the regression model. The standard errors

[7] Figure 3.2 shows that the trend of government subsidies received by firms changed dramatically in 2017, indicating a policy change regarding government subsidies allocation. Therefore, I create a dummy variable to capture the effect of this policy change.

are clustered by city. The coefficient estimate of primary interest is α_1, capturing the average difference in subsidies between the treatment group (i.e., firm-year observations operating in a city with Party Secretary turnover) and comparison group (i.e., firm-year observations operating in a city without Party Secretary turnover) during the year of city Party Secretary turnover. Definition of variables involved in this paper is available in Table 3.2.

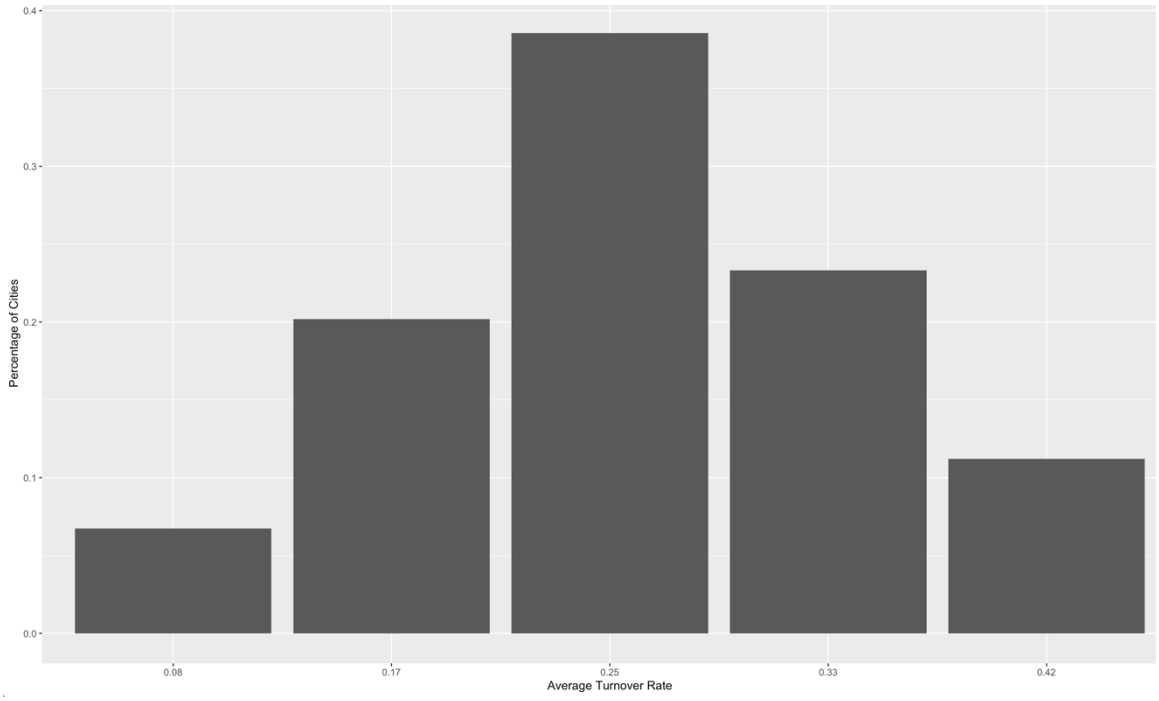

Figure 3.1: Distribution of Average Party Secretary Turnover Rate from 2007 to 2018

3.4.3 Variables

To examine how political uncertainty influences, I construct the following dummy variables: *D*. For each firm-year observation, *D* takes the value of one if the firm's registration city experiences a Party Secretary turnover and zero otherwise.

Table 3.2: Variable Definitions for Government Subsidies Analysis

Variable	Definition
subsidies	Logarithm of government subsidies adjusted by Consumer Price Index (CPI) to 2015 dollars.
$D_{c,t}$	Indicator of Party Secretary turnover taking the value of 1 if city *c* experiences Party Secretary turnover in year *t*.
B/M	Book-to-Market Ratio, i.e. the ratio of the book value of equity to the market value of equity.
size	Logarithm of firms' asset.
leverage	Ratio of liabilities to assets.
cfo	Cash flow from operation scaled by lagged total assets.
ind	Firm industry categorized by China Securities Regulatory Commission (CSRC).
subsidy_change	A dummy variable indicating policy change regarding government subsidies, equaling to 1 for years in and after 2017 and 0 for previous years.

Following Xu et al., (2016), the exact month of the newly appointed official taking office is used to determine the official's first year in office. Specifically, the indicators take the value of one for current (following) year if the newly appointed official taking office in the first (second) six months.

Standard firm characteristics within the literature are included in all regression models (Wu et al., [2012]; Tao et al., [2017]; Aobdia et al., [2018]) . Firm characteristics include: logarithm of total assets (*size*), leverage, cash flow from operation scaled by total assets (*cfo*), and the ratio of book value to market value (*B/M*). These variables are arguably not potential outcomes of local government turnover.

3.5 Results

3.5.1 Discriptive Statistics

Table 3.3 shows sample composition by year, average value of the logarithm of subsidies in dollar amount, average value of subsidies in million dollars, and the variation

of city Party Secretary turnover by year. In summary, the final sample used for analyses is 18,326 firm-year pairs. Firms on average receive $21.95 million from government in each year. Twenty five percent of firm-year observations fall in the treatment group, i.e. operate in a city with Party Secretary turnover.

Table 3.3: Sample Description of Government Subsidies by Year

Year	Observations	$\overline{\text{Subsidies}}$ (Millions)	$\overline{\log(\text{Subsidies})}$	Party Secretary Turnover (%)
2007	950	12.28	15.0	30
2008	1125	14.05	15.4	31
2009	1266	16.03	15.4	13
2010	1473	19.70	15.6	18
2011	1634	21.40	15.8	19
2012	1734	26.71	16.0	27
2013	1732	27.16	16.0	37
2014	1749	27.22	16.1	10
2015	1851	29.30	16.2	24
2016	2038	31.93	16.3	26
2017	1473	11.72	14.7	35
2018	1301	9.93	14.4	38
Total	18,326	Mean: 21.95	15.66	25

Table 3.4 represents summary statistics for variables involved in estimating my main model, i.e., Equation (3.1). The mean value of firm size, i.e.. the logarithm of the firms' total assets, is 21.99. On average, 46% of a firm's assets are debts. Firms on average have 17% of total assets as cash flow from operation. The mean value of book-to-market ratio is 0.60, indicating that on average a firm's book value is 60% of its market value.

Table 3.4: Summary Statistics for Government Subsidies Analyses

Variable	25%	Mean	75%	Standard Deviation
Log(Subsidies)	14.66	15.66	16.88	1.80
Party Secretary Turnover	0	0.25	1	0.44
Log(Assets)	21.16	21.99	22.71	1.19
Leverage	0.30	0.46	0.62	0.24
Cash Flow From Operation	0.07	0.17	0.21	0.13
Book-to-Market	0.42	0.60	0.78	0.24

Notes: This table shows summary statistics of dependent variable Subsidies, treatment status Party Secretary Turnover, and control variables. Number of observations used for calculation is 18,326.

3.5.2 Main TWFE Results

Table 3.5 reports the estimated coefficient of α_1 for Eq. (3.1). Column (1) shows the coefficient estimate with only Party Secretary turnover as independent variable. Column (2) – (3) add control variables and fixed effects sequentially. Column (4) shows the estimates after clustering the standard errors by firm. The coefficient estimate on α_1 in all columns are negative and statistically distinguishable from zero, indicating a lower level of subsidies for treatment group than comparison group. Specifically, firms operating in a city with a Party Secretary turnover on average receive 0.096% less subsidies from government than firms operating in a city without Party Secretary turnover during the year of city Party Secretary turnover.

Table 3.5: Effect of City Government Turnover on Government Subsides - Two-Way Fixed-Effects Models

	(1)	(2)	(3)	(4)
Party Secretary turnover	-0.15***	-0.01	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Control	No	Yes	Yes	Yes
Industry effect	No	No	Yes	Yes
Year effect	No	No	Yes	Yes
City effect	No	No	Yes	Yes
Cluster	No	No	No	Yes
R^2	0.001	0.25	0.36	0.36

Notes: This table presents the coefficient estimate on Party Secretary turnover. The number of observations for all analyses is 18,326. Column (1) only includes indicator of city Party Secretary turnover. Column (2) adds firm characteristics. Column (3) adds city fixed effects, industry fixed effect, and year fixed effects. Column (4) is estimated on clustered standard errors by firms. Standard errors of coefficient estimates are included in parenthese. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

3.5.3 Event Study

As proposed in Section 3.1, local government turnover might have delayed effect on government subsidies received by firms given the fact that policies regarding government subsidies allocation might be temporarily halted during the year of the Party Secretary turnover. Local firms can receive increased amount of government subsidies in one or more years following local government turnover. In this subsection, I conduct an event study to examine if there is any long term effect of local government turnover on government subsidies received by local firms.

Table 3.6 reports the results of event study shown in Eq. (3.2):

$$Y_{c,i,t} = \sum_{k=-2}^{2} \alpha_k D_{c,t}^{k} + \beta X_{c,i,t} + \gamma \times \text{subsidy\_change} + \theta_{ind,i} + \tau_t + \beta_c + u_{c,i,t} \quad (3.2)$$

Table 3.6: Effect of City Government Turnover on Government Subsides - Event Study

	$k = -2$	$k = -1$	$k = 1$	$k = 2$
Party Secretary turnover	-0.05**	0.03	0.03	0.001
	(0.03)	(0.03)	(0.03)	(0.03)
Control	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
City effect	Yes	Yes	Yes	Yes
Cluster	Yes	Yes	Yes	Yes
R^2	0.36	0.36	0.36	0.36

Notes: This table shows the results of event study as shown in Eq. (3.2), where *k* stands for number of years apart from Party Secretary turnover. City fixed effect, industry fixed effect, and year fixed effect are included. Standard errors are clustered by firm. Standard error of coefficient estimates are shown in parentheses. The number of observations for all analyses is 18,326. ***, **, * indicate statisical significance at the 1%, 5%, and 10% levels, respectively.

The treatment dummy $D_{c,t}^{k}$ equals 1 if city c experienced Party Secretary change k years from year t and 0 otherwise. This definition implies that $k = 0$ represents the first year following the Party Secretary turnover, and $k = -1$ is the year prior to treatment. All other variables are defined the same as in Eq. (3.1).

The coefficient estimate on $D_{c,t}^{-2}$ is -0.05, and statistically distinguishable from zero (p-value < 0.05), suggesting that on average firms experienced city Party Secretary turnover two years ago receive 0.05% less government subsidies than firms experienced no city Party Secretary turnover two years ago. Sensitivity test is conducted in later section to check if this result is driven by subset of the sample. The coefficient estimates on $D_{c,t}^{-1}$, $D_{c,t}^{1}$, and $D_{c,t}^{2}$ are all positive but statistically non-distinguishable from zero, indicating no lag effect of city Party Secretary turnover on government subsidies.

3.6. Robustness Checks

3.6.1 Alternative Measurement of Government Subsidies

In my main models, government subsidies are measured by the logarithm of subsidy dollars to address skewness, which is shown in Figure 3.2. In this section, I test the sensitivity of the results using the dollar amount of government subsidies (in millions).

Table 3.7 shows the coefficient estimate on the Party Secretary turnover variable using the alternative measurement of government subsidies. The coefficient estimate remains negative (-0.44) and statistically non-distinguishable from zero (p-value > 0.1), suggesting the robustness of main result to alternative government subsidies measurement.

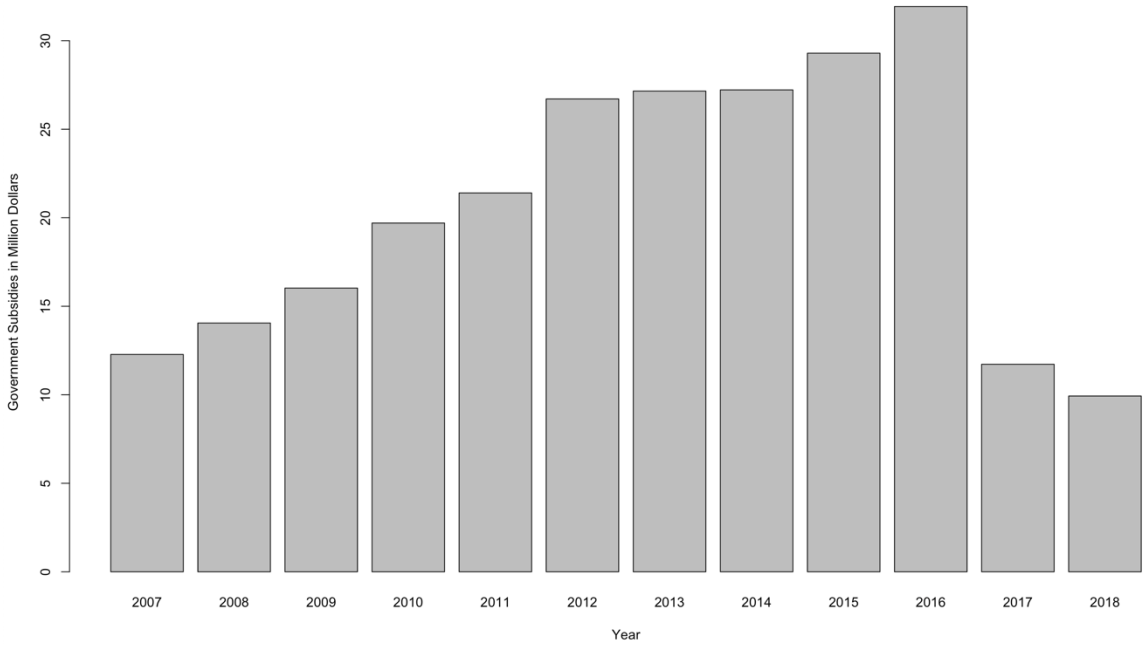

Figure 3.2: Distribution of Government Subsidies in Million Dollars by Year

3.6.2 Subsample Sensitivity Test

In section 3.5.3, the event study shows that the coefficient estimate on $D_{c,t}^{-2}$ is statistically distinguishable from 0, and the coefficient estimates on city Party Secretary dummy from all other years are statistically non-distinguishable from 0. In this section, I test if the significance of coefficient estimate on $D_{c,t}^{-2}$ is driven by a small subset of the sample. Figure 3.2 shows that firms receive increased amount of government subsidies from year 2007 to year 2016. However, in 2017 government subsidies received by firms decline substantially and the trend remains in 2018. The coefficient estimate on $D_{c,t}^{-2}$ is -0.025 and statistically non-distinguishable from 0 (p-value > 0.1) after dropping firm-year observations from 2017 and 2018.

Table 3.7: Effect of City Government Turnover on Government Subsides - Alternative Measurement of Government Subsidies

	Subsidy (Million)
Party Secretary turnover	-0.44
	(0.66)
Control	Yes
Firm effect	Yes
Industry effect	Yes
Year effect	Yes
Cluster	Yes
R^2	0.25

Notes: This table presents the results using alternative measurements of government subsidies. The number of observations for all analyses is 18,326. Standard errors of coefficient estimates are included in parenthese. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Political background of firms has been documented to play a decisive role in the probability and amount of subsidies allocation (Faccio et al. [2006]). Figure 3.3 plots average government subsidies received by central government owned enterprises (central SOEs), local government owned enterprises (local SOEs), and private enterprises (Non SOEs) across sample period from 2007 to 2018. In general, central SOEs receive higher amount of subsidies than local SOEs, and Non SOEs receive lowest amount of subsidies. To test whether the effect of political uncertainty on government subsidies received by firms differs in political background of firms, I re-examine two-way fixed effect model Eq. (3.1) on central SOEs, local SOEs, and Non SOEs. The results shown in Table 3.8 indicate that political uncertainty affects central SOEs, local SOE, and Non SOEs in the same way in terms of government subsidies.

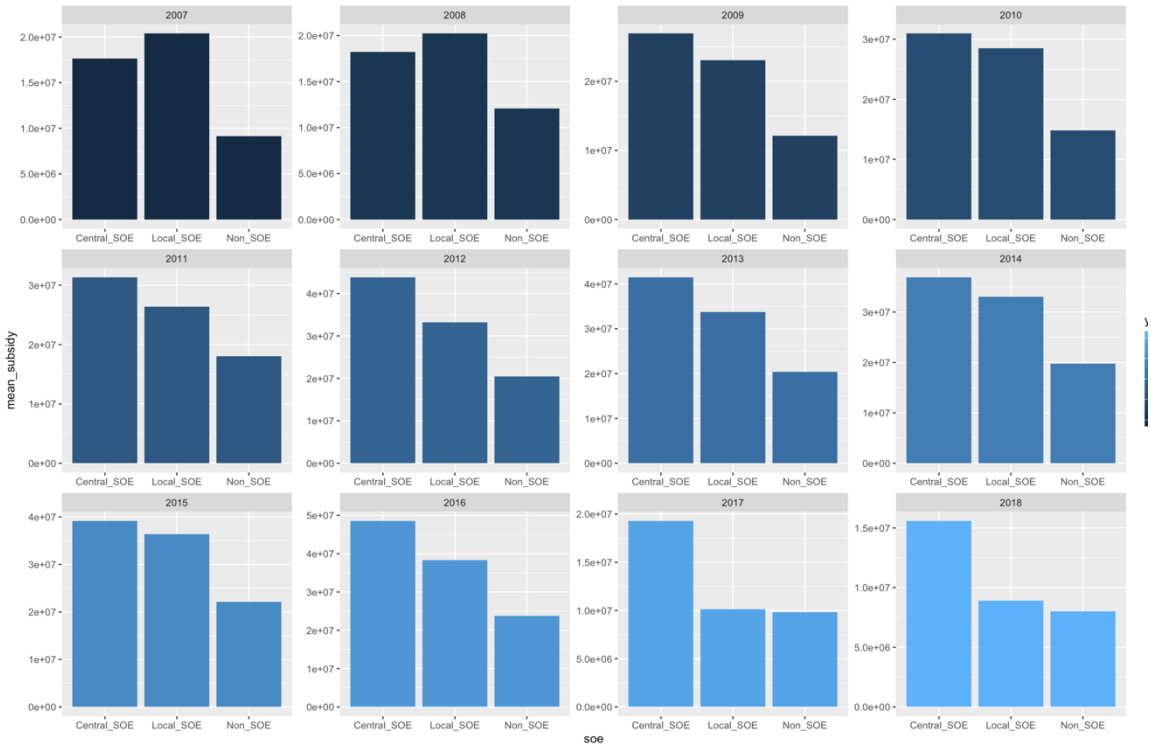

Figure 3.3: Average Government Subsidies Among Central Government Owned Enterprises, Local Government Owned Enterprises, and Non State Owned Enterprises Across Sample Period

3.7 Conclusions

In this study, I investigate the influence of political uncertainty on government subsidies received by firms in China. More specifically, I use a two-way fixed effect model to examine the difference in government subsidies between firms registered in a city with Party Secretary turnover and firms registered in a city without Party Secretary turnover. Using a sample of Chinese firms publicly listed in the Shanghai and Shen Stock Exchanges during the 2007-2018 period, I find that firms operating in a city with Party Secretary turnover receive qualitatively the same amount of government subsidies with firms operating in a city without Party Secretary turnover.

Table 3.8: Effect of City Government Turnover on Government Subsides by Ownership Type - Central SOE vs Local SOE vs Non SOE

	Central SOE	Local SOE	Non SOE
Party Secretary turnover	0.003	0.06	0.003
	(0.06)	(0.05)	(0.03)
Control	No	Yes	Yes
Industry effect	No	No	Yes
Year effect	No	No	Yes
City effect	No	No	Yes
Cluster	No	No	No
R^2	0.44	0.37	0.40
Sample	2,796	5,683	7,937

Notes: This table presents the coefficient estimate on Party Secretary turnover across types of state owned enterprises. Standard errors of coefficient estimates are included in parenthese. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

I also perform an event study to detect the existence of lead or lag effect of local government turnover on government subsidies. The results show that city Party Secretary has no long term effect on government subsidies received by firms.

My study provides implications for firms seeking financial support in the form of subsides from local governments. Publicly listed firms can raise capital from the stock market. However, government subsidies are very important for many financially distressed firms since the Chinese Securities Regulatory Commission (CSRC) sets stringent profitability requirements before firms are able to offer and delist in the stock. My results show that although city Party Secretary has authority to restrict/increase financial access to firms, firms' financial stability is not affected by local government turnover. My study

also contributes to the prior political uncertainty literature, in which the negative effect of government turnover is widely documented. My study adds neutral effect of political uncertainty on government subsidies allocation.

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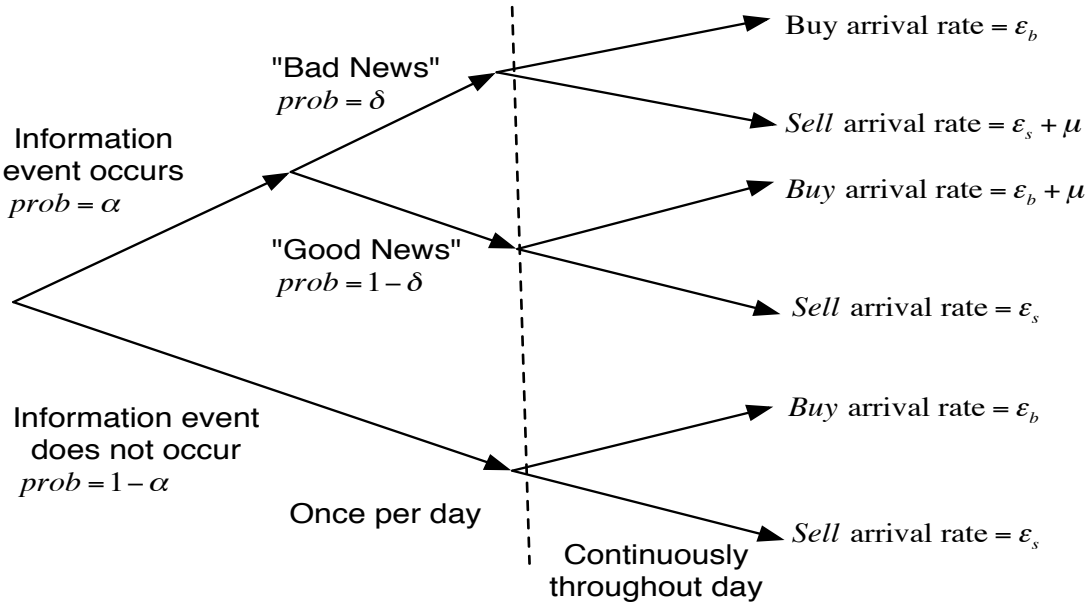
APPENDICES

A. INTUITION AND MODELLING OF PIN

"Information asymmetry manifests itself when investors trade on the basis of their private information" (Easley et al., 1997). Researcher cannot identify which trades are based on private information. However, the large imbalances between the number of buy and sell trades provide inference for the presence of privately informed traders in the market. This possibility of inferring such order imbalances provides the intuition behind the EKO (first letters of the authors' last name) model of information asymmetry built in Easley et al., 1997. From this EKO model, one can estimate the probability of information-based trading for a given stock over a particular period based on the daily order flow during the period.



Appendix Figure 1. Game tree for EKO model (from Easley et al., [1997]).

The basic structure of the EKO model can be seen in the game tree in Appendix Figure 1.

At the beginning of each day, nature determines whether one or more ‘‘informed’’ investors acquire private information. Private information events occur with probability α and no event days occur with probability $1-\alpha$. When it occurs, private information contains either “good” events with probability $1-\delta$ or “bad” events with probability δ; where good (bad) events indicates the asset is currently undervalued (overvalued). The asset is correctly valued on no-events days.

Trade orders are assumed to arrive sequentially to the market according to a Poisson process. Orders from uninformed buyers (sellers) arrive randomly at the daily rate ε_b(ε_s) every trading day. Orders from risk neutral and competitive informed traders arrive randomly at the daily informed arrival rate μ only on good and bad-events days. The model implicitly assumes that the informed arrival rate μ is determined by some unmodelled strategic process that results in a fraction of trades equal to $\mu/(\mu+\varepsilon_b+\varepsilon_s)$ arriving from informed traders on private information event days. All of the arrival processes are assumed to be independent and their parameters are common knowledge across all traders and the market maker.

The probability of informed trade at the beginning of the day can be calculated as:

$$PIN = \frac{\alpha\mu}{\alpha\mu+\varepsilon_b+\varepsilon_s} \tag{A.1}$$

The numerator is the expected number of orders from privately informed investors and the denominator is the expected total number of orders each day. Hence the PIN measure represents the expected fraction of trades that are information based.

The parameters used in Eq. (A.1) can be calculated through maximum likelihood function. Specially, denoting B and S as the daily number of buy and sell trades, respectively, the likelihood function for a particular trading day is

$$L(B,S|\theta) = (1-\alpha)e^{-\varepsilon_b}\frac{\varepsilon_b^B}{B!}e^{-\varepsilon_s}\frac{\varepsilon_s^S}{S!} + \alpha\delta e^{-\varepsilon_b}\frac{\varepsilon_b^B}{B!}e^{-(\mu+\varepsilon_s)}\frac{(\mu+\varepsilon_s)^S}{S!} + \alpha(1-\delta)e^{-(\mu+\varepsilon_b)}\frac{(\mu+\varepsilon_b)^B}{B!}e^{-\varepsilon_s}\frac{\varepsilon_s^S}{S!} \quad \text{(A.2)}$$

Eq. (A.2) shows that, the daily numbers of buy and sell trades are sufficient statistics for the parameter estimation.

B. CLASSIFICATION OF BUY AND SELL TRADES

Estimating PIN for a specific firm from the EKO model requires data on the number of buy and sell trades for each firm day. I determine these numbers by using the China Center for Economic Research (CCER) data. To classify trades as buys or sells, this study employs a slightly modified version of the Lee-Ready (1991) algorithm. A trade is classified as a buy (sell) if it is executed above (below) the midpoint of the bid and ask prices, since a trade executed close to the bid (ask) price is more likely to be a buy (sell). For the trades that lie on the bid-ask midpoint, the "tick test" which involves previous trades is applied. Specially, a midpoint trade is classified as a buy if it is executed at a higher price than the previous trade (i.e., if it is an "uptick") or as a sell if it is executed at a lower price ("downtick"). If the previous trade is executed at the same price, the trade is classified as a sell.[1]

[1]For original "tick test", if the previous trade is executed at the same price, the tick test looks at the next most recent trade until it reaches a change in the trade price ("zero uptick" or "zero downtick"). This modification is made to reduces the computational time required to construct PIN.