

Does Central Disciplinary Inspection Decrease the Issuance of Chinese City Construction Investment Bonds?

Empirical Project

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Part 1 Introduction

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Part 1 Introduction

1.1 City Construction Investment Bonds (CCIBs)



- **Definition:** City Construction Investment Bonds (CCIBs) or Chengtou Bond (In Chinese: 城投债) are bonds issued by China's local government financing vehicles, and generally used to finance public projects such as roads, schools, water facilities, and other social infrastructures.
- **Operation Model**

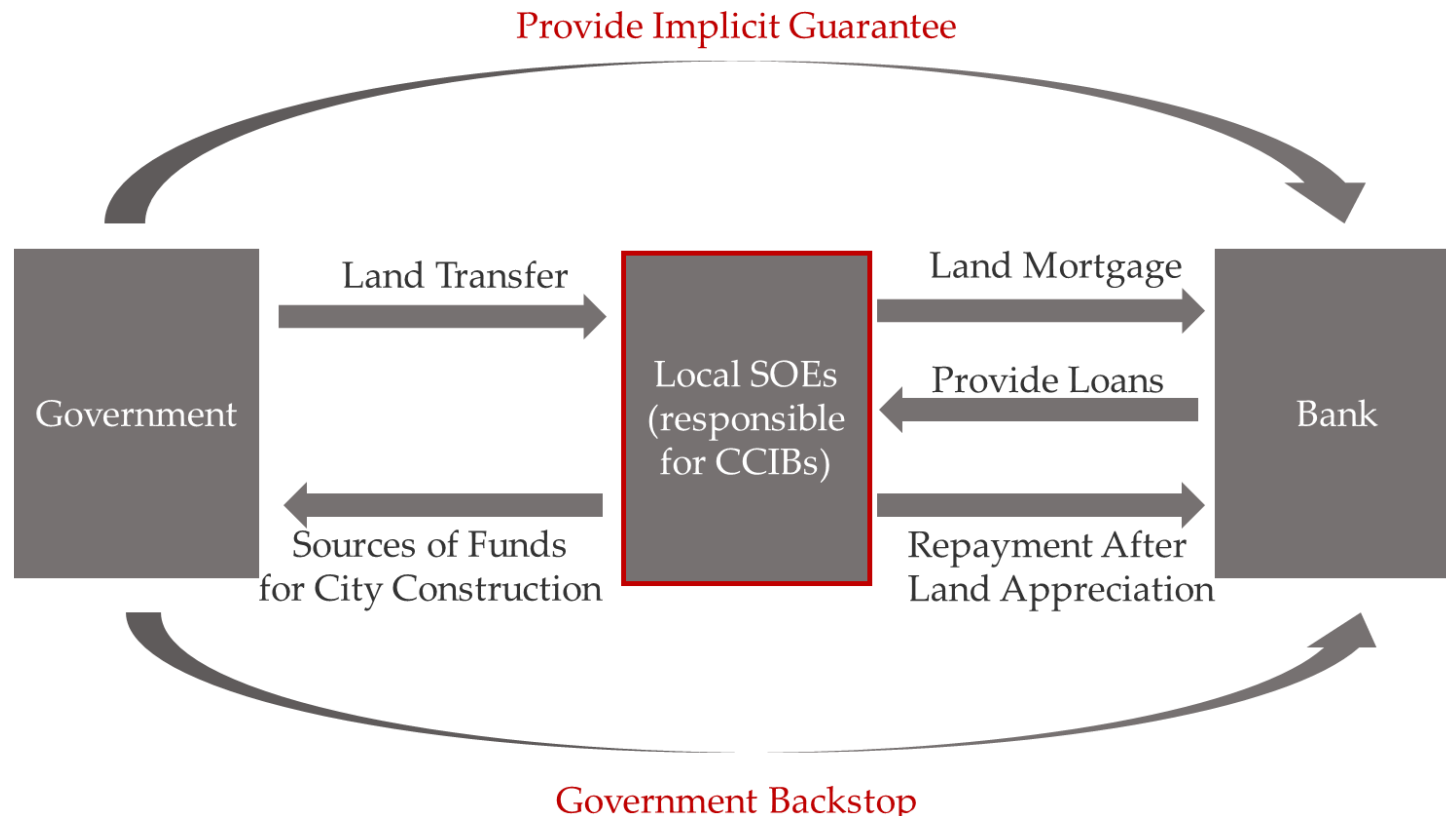


Figure 1: Operation Model of Local Financing Vehicles (Source: He, 2018)

1.1 City Construction Investment Bonds (CCIBs)

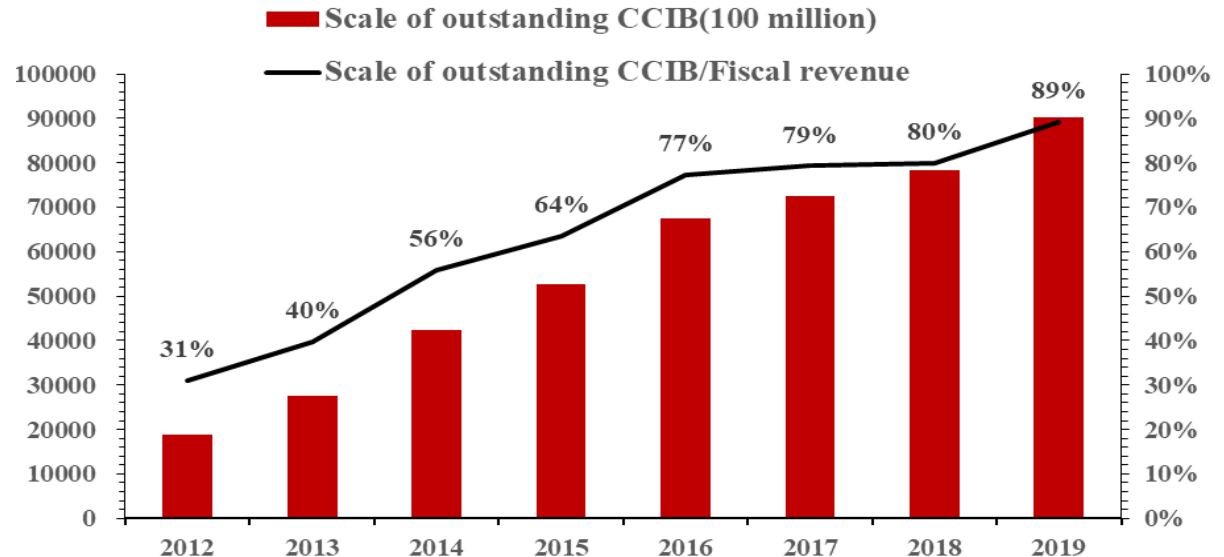


■ Growth and Scale of CCIBs

- The number of outstanding CCIBs rises sharply and nearly **ninefold** since 2012 (Figure 2)
- The ratio of outstanding CCIBs to fiscal revenue increases over time, which is 89% at the end of 2019. (Figure 3)
- In 2019, local governments issued **twice** as much debt as the central government.
- The high growth and increasing size of CCIBs raises concerns about the **solvency** of local governments.



Figure 2: Total Size of CCIBs (Source: Wind Financial Terminal)



1.2 China's Local Government Debt Crisis



■ Incentives of Excess Borrowing

- **Unmatchable Fiscal Revenue (50%) and Fiscal Expenditure (85%):**
 - Local governments provide majority of public goods, while a large part of tax revenues directly goes to the central government, so local governments need to fund the gap.
- **Promotion Competition:**
 - Key factor of officials' promotion competition: **Economic growth**
 - The most efficient way to stimulate short-run economic growth: **Investment**
 - Municipal and country-level governments are not allowed to issue bonds or borrow directly; provincial governments are allowed to issue bonds and borrow after 2014, but the issuance process is complex and time-consuming, so they tend to turn to CCIBs.
- **Unmatchable Terms:**
 - Local officials' average term of office: **3-4 years** VS. Average term of bond: **longer than 5 years**
- **Although there is no precedent for default of CCIBs and local government debts, the excess borrowing has caused severe solvency problem to many local governments.**
 - **Case: Dushan County in Guizhou Province**
 - 36 government financing vehicles
 - Average financial cost: more than 10%
 - **Total debt: more than 40 billion yuan**
 - **Total fiscal revenue: only 0.83 billion yuan**

1.3 Central Disciplinary Inspections

■ Central Leading Group for Inspection Work

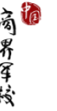
- Definition: A suborganization of the Central Committee of CPC, ensuring the **integrity and efficiency** of the officials in local political institutions and managers in SOEs.
- Organized 12 turns of inspection covering **all the provinces** and important SOEs from 2012 to 2017

■ Why May Central Disciplinary Inspections Impact CCIBs?

- **CCIBs in Gray Area of Law:** Local governments are forbidden
 - to provide any guarantee for debt repayment
 - to bring CCIB into local government debt
- Possible Economic Risks in CCIBs

1.4 Research Questions

- Q1. Does central disciplinary inspection decrease the issuance of CCIBs?
- Q2. Is there any heterogeneity on the influence of central disciplinary inspection?
 - Government hierarchy:
 - Provincial Government? Municipal Government? County Government?



Part 2 Case: Dushan County's 40 Billion Debt

2.1 Pan Zhili



Profile



Name: Pan Zhili

Birth place: Haian , Jiang Su province

Party: the Communist Party of China

Education: Party school of the central committee of C.P.C

EXPERIENCE

- 1989.1
Join the Communist Party of China, and begin his political career.
- 2007.3-2007.8
Served as secretary of the Party committee of Chengdong Town, Hai'an County, Jiangsu Province.
- 2007.08-2010.07
Director of the Management Committee of Hai'an Economic Development Zone, Jiangsu Province.

- From 2010 to 2011, Guizhou Province introduced 12 outstanding government officials from Jiangsu, Zhejiang and other developed provinces to serve as county Party committee secretaries (top 1 leader).
- Pan is one of them.
- In July 2010, pan was appointed secretary of Dushan County Party committee of Guizhou Province (Top 1 leader in Dushan county)

2.2 The Most Important Task is to Develop Economy



■ Guizhou is one of the poorest places in China

- GDP of Guizhou Province ranks 22/31 in China in 2019.
- The GDP per capita is only 46,433 yuan, while the national GDP per capita is 70,892 yuan.

■ Pan shoulders the important task of developing the local economy.

- The purpose of introducing talents from developed areas in Guizhou Province is to apply their experience and promote local economic development.

■ For the newly introduced officials, the Guizhou government has given them great tolerance.

- Pan became a dictator in the local government.
- For Pan, it is also his best opportunity to show his political talent.

Dushan county Profile in 2010



Name: Dushan county

Area: 2,442.2km²

GDP per capita: ¥ 7,235

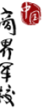
Labor: 212,905

Location: Southernmost of Guizhou Province

Dushan county was one of the poorest areas in China.

In Dushan County, one in six people is poor.

2.3 Deciding to Develop Tourism



- GDP is closely related to the promotion of officials. From the perspective of industry introduction, there are several industries for local governments to increase GDP and develop industrial economy.
 - **Agriculture?** No. Agricultural development is inefficient for ambitious officials, not to mention most of Dushan county is mountainous terrain, unable to achieve mechanization.
 - **The secondary industry?** In fact, when Pan just arrived in Dushan County, he once tried to develop the secondary industry, but the frequent failure in attracting companies made him give up the idea.
 - **Tourism?!**
- **Dushan County does not have beautiful scenery or profound historical heritage. In order to develop tourism, Pan decided to create its own wonders.**
 - Where the money comes from?

	2011 (Billion)
GDP	2.93
Government revenue	0.28
Government budget expenditure	1.08

2.4 Crazy Financing

■ Crazy projects, Crazy financing

- Due to his superior's high tolerance, Pan began his local dictatorship. He developed many projects such as “Shuisi Tower”.
- Since the tiny fiscal revenue can't cover the investment of these projects, Pan turned to debt financing, which is commonly used in his hometown, Jiangsu Province.

■ An official good at “financing”

- To finance, Pan set up 36 local SOEs as local financing vehicles .

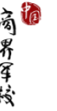
total assets amount	>60billions	30~60 billions	10~30 billions	<10 billions
the number of local financing vehicles	5	4	10	16

- Pan used the government's reputation as a guarantee, set up a number of local financing vehicles , and attracted investors with high interest rates.
- During his term of office, Pan borrowed more than 40 billion yuan through local financing vehicles, even though the fiscal revenue can't cover the interest.

■ Why do investors still lend even they know that Dushan government's fiscal revenue is unable to repay the loan or cover the interest?

- High interest rate.
- Government's reputation as a guarantee by providing official documents.
- The superior government will repay it
- Collusion with local state-owned banks

2.5 Long Way to Repay Debt



■ A “talented” official was sent to jail.

- On March 19, 2019, Pan was suspected of serious violation of discipline and law. His main charges include corruption, bribery and low-cost transfer of state land.
- Meanwhile, other officials in Dushan county did not escape punishment.
- Absurdly, Pan and other officials were sentenced for corruption, not excessive debt.

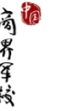
■ Pan moved on, but debt can't move on.

- Many projects have been shut down due to lack of money.

■ How to solve 40 billion debt?

- **Transfer project, return fund.** Later officials transferred some of the projects to the market, like the Shuisi Tower was transformed into a hotel
- **Roll over debts and debt replacement.**
- **Sale of land and other assets.**

■ In December 2019, the total government debt of Dushan county is about 14 billion yuan.



Part 3 Literature Review

3.Literature Review

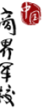


■ Our topic has rich theoretical basis.

■ General Theoretical Basis

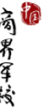
- North pioneered the use of property rights theory to explain the impact of institutional change on economic performance in American History (North & Thomas, 1971; North, 1981).
- Then many economists began to pay attention to the role of institutions, especially political and economic institutions on the economy. Recently many researchers think the structure of governments and the status of power restriction will also influence the growth of economies (Shleifer & Vishny, 1993; Delong & Shleifer, 1993; La Porta, 1998).
- William Easterly (2005) believes that incentive plays an important role in the economy, and the factors relating incentives will affect economic growth.
- These theories offer us a general theoretical basis, where politics, economic system, related government behavior and incentives will have certain impacts on the economy.

3.Literature Review



- There are also some researches to analyze the unique status of Chinese political institutions.
- **Promotion Tournament** gives us a structure to understand the incentives of Chinese local government debt.
 - "Tournament" as a incentive is come up with by Lazear and Rosen(1981), where relative achievements decide the result of competitions. In some certain conditions, tournament is optimal.
 - Zhou (2007) proposed that Chinese current system of political institutions is a so-called "Promotion Tournament" model. In this model, local officials in various places have great administrative power, and whether they are promoted or not is decided by the superior departments according to their relative achievements compared with other local officials.
 - An effective "Promotion Tournament" model has four premises: centralized personnel power, clear and comparable performance indicators, government officials can play a role in the indicators, and government officials are not easy to collude. Under Chinese current system, these four requirements can be basically met.
 - In the past tens of years, GDP growth was the most important part of performance indicators. This system played an important role in promoting Chinese economic growth, but also brought many problems.

3.Literature Review



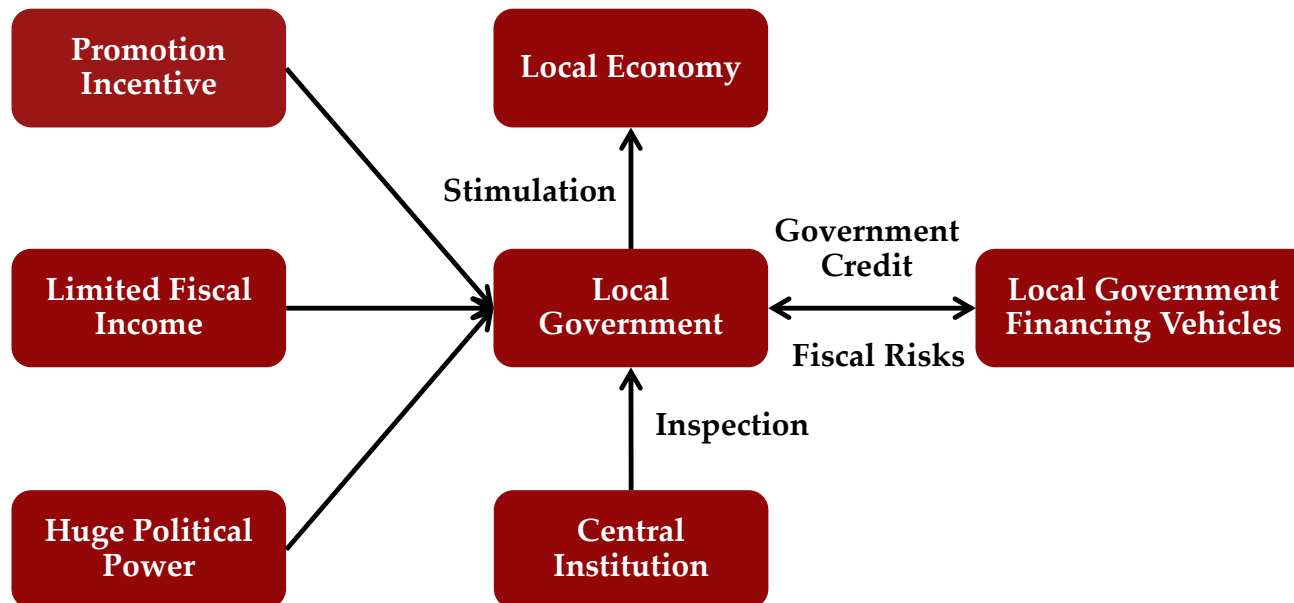
- **The short-term growth of GDP is affected by government expenditure, which gives the Chinese local government the incentive to undertake large amount of debt.**
 - After the reform of tax sharing system and value-added tax, local governments are faced with the dilemma of insufficient fiscal revenue.
- **There are also some researches to explain the mechanism between local governments' characteristics and their debt.**
 - Fu (2007) believes that the asymmetry of "finance" and "power" brings severe financial pressure to local governments.
 - Wang, Zhang and Shen (2012) believe that promotion incentive, insufficient local government revenue and soft budget constraints of banks will lead to a large amount of debt of local governments.
 - Because it is not allowed to issue local government bonds, local governments invest through local financing platforms to issue CCIBs. Liu and Li (2013) believe that from the perspective of debt repayment, the financing platform relies on the government's financial credit. The government uses platform financing for large-scale financing to carry out government expenditure, and it makes the government credit bear certain risks.

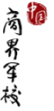
3.Literature Review



■ Our suppose and similar research

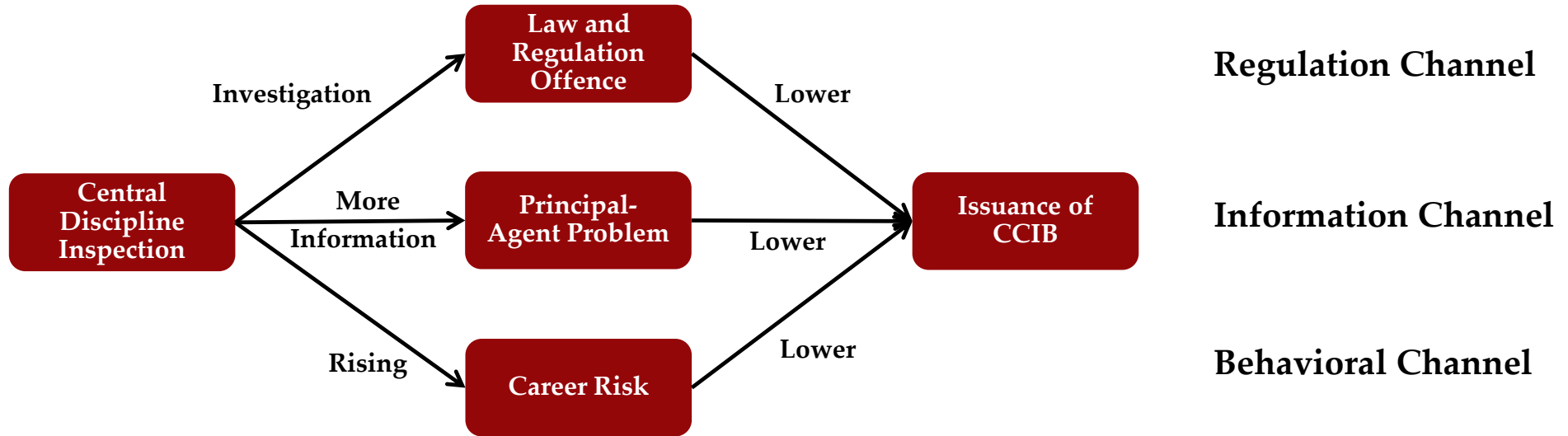
- So, we think it may make superior governments especially central government to alter the potential risks, whose behavior such as inspection will influence the issues of CCIBs.
- Luo and She (2015) used the method of empirical analysis to investigate the impact of the change of local officials on the issuance probability and scale of CCIBs. Under their structure, we want to build an empirical analysis to investigate the impact of the inspection work on the scale and frequency of CCIBs.





Part 4 Empirical Research

4.1 Empirical Hypothesis & Methodology



Empirical Hypothesis :

- During Central discipline inspection, the local governments' issuance of CCIBs may decrease.

Identification Strategy:

- Difference-in-Difference (DID)
- Treatment Group: The local governments in province under central discipline inspection
- Control Group: The other local governments
- How random and exogenous are the under central discipline inspections?

4.2 Randomness and Exogeneity



Color Represents the Round of Inspection

Randomness:

- There is no **regional** and **economical** pattern of which province will be inspected in each round of inspection.

Exogeneity:

- Inspection team will not inform local government before the inspection.
- Search engine Baidu and Google cannot find public information before inspection
- Main aims of inspection: investigate the law and discipline violations of local officials: Not focus on local debt issue
- Cao et al. (2018) regard inspection as a **quasi-natural experiment**

4.3 Research Design

Regression function:

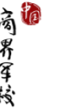
$$Issuance_{i,t} = \alpha + \beta * inspection_{i,t} + X'_{i,t}\theta + \delta_i + \gamma_t + \varepsilon_{i,t}$$

- ***Issuance*_{i,t}** is scale (or frequency) of City Construction Investment Bonds issued in province i at time t.
- ***inspection*_{i,t}** is a dummy which indicates whether province i has been inspected at time t.
- ***X*_{i,t}** is control variables including GDP, population, fixed asset investment, fiscal revenue, etc.
- ***δ*_i** is province fixed effects, ***γ*_t** is time fixed effects. ***ε*_{i,t}** is the error term.

Time Line of Central Government's Disciplinary Inspection

Time	Destination province/municipality
2013.5	Jiangxi, Hubei, Guizhou, Inner Mongolia, Chongqing
2013.11	Shanxi, Jilin, Anhui, Hunan, Guangdong, Yunnan,
2014.3	Liao Ning, Fujian, Shandong, Henan, Hainan, Gansu, Ningxia, Xinjiang, Beijing, Tianjin
2014.7	Hebei, Heilongjiang, Jiangsu, Zhejiang, Sichuan, Shaanxi, Qinghai, Guangxi, Xizang, Shanghai

4.4 Data



- We use monthly bond data from 2011 to 2017. The data of control variables is yearly data.

Variable Name	Description	Source
Scale	Total face value of CCIB issuance of the province	Wind Financial Terminal
Frequency	Total frequency of CCIB issuance of the province	Wind Financial Terminal
Inspection	Dummy of Central inspection (1: inspection, 0: no inspection)	Open information: Official Website of Central Commission for Discipline Inspection
Province level Scale	Total face value of CCIB issuance from the provincial governments	Wind Financial Terminal
City Level Scale	Total face value of CCIB issuance from the municipal governments	Wind Financial Terminal
County Level Scale	Total face value of CCIB issuance from the county & district governments	Wind Financial Terminal
Population	Population of the province	China Statistical Yearbook as cited by CNKI China social and economic database
Fixed Asset Investment	Fixed asset investment of the province	China Statistical Yearbook as cited by CNKI China social and economic database
Fiscal Revenue	Total fiscal revenue of the province	China Statistical Yearbook as cited by CNKI China social and economic database
GDP	Gross domestic product of the province	China Statistical Yearbook as cited by CNKI China social and economic database
GDP Growth rate	GDP growth rate of the province	China Statistical Yearbook as cited by CNKI China social and economic database

4.4 Data



- We use monthly bond data from 2011 to 2017. The data of control variables is yearly data.

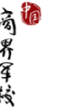
VARIABLES	(1) Obs	(2) Mean	(3) Std.Dev.	(4) Min	(5) Max	(6) Measurement	(7) Description
Scale	2,604	51.47	77.57	0	1,063	100 million CNY	Scale of issuance per month
Frequency	2,604	5.043	8.404	0	122		Frequency of issuance per month
Inspection	2,604	0.561	0.496	0	1		Dummy denoting whether the province has been inspected
Province level scale	2,604	15.57	26.25	0	293.5	100 million CNY	Scale of province level bond issued per month
County level scale	2,352	17.75	41.74	0	564.5	100 million CNY	Scale of county level bond issued per month
City level scale	2,184	16.70	32.55	0	463.8	100 million CNY	Scale of city level bond issued per month
County level	2,352	1.915	4.603	0	58	100 million CNY	Frequency of province level bond issued per month
Province level	2,604	1.243	1.798	0	13	100 million CNY	Frequency of county level bond issued per month
City level	2,184	1.819	3.745	0	59	100 million CNY	Frequency of city level bond issued per month
Population	2,604	44.00	27.80	3.030	111.7	1 million people	
Fixed asset investment	2,604	1,565	1,116	54.93	5,424	1 billion CNY	
Fiscal revenue	2,604	325.7	327.2	15.60	2,113	1 billion CNY	
GDP	2,604	2,206	1,766	60.61	8,971	1 billion CNY	
GDP growth rate	2,604	9.249	2.539	-2.500	16.40		
Year	2,604	2,014	2.000	2,011	2,017		
Month	2,604	6.500	3.453	1	12		

4.5 Empirical Results: Issuance Scale

- Column 1 shows that **Central Government's Disciplinary Inspection reduces issuance scale of City Construction Investment Bonds by 1.419 billion yuan.**
- In column 2, we take log of all variables except GDP growth rate and dummy variable. The results can be interpreted as **Central Government's Disciplinary Inspection reduces issuance scale of City Construction Investment Bonds by 28.7%.**

VARIABLES	(1) scale	(2) ln_scale
Inspection	-14.19*** (5.304)	-0.287*** (0.094)
Population	-1.698* (0.959)	2.702*** (0.501)
Fixed asset investment	0.011** (0.005)	0.151 (0.157)
Fiscal revenue	0.007 (0.025)	-0.098 (0.121)
GDP	0.052*** (0.007)	2.097*** (0.496)
GDP growth rate	-2.432** (1.015)	0.022 (0.019)
Province fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Month fixed effects	Yes	Yes
Observations	2,604	1,935
R-squared	0.576	0.438

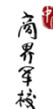
4.5 Empirical Results: Issuance Scale



- The dependent variables in Column 1, 2, 3 are issuance scale of county-level, city-level and province-level bond per month respectively. (Coefficients of control variables are not presented.)
- **The coefficient of county level is largest and most significant. Coefficient of province level is insignificant.**

VARIABLES	(1) County level scale	(2) City level scale	(3) Province level scale
Inspection	-8.445*** (3.089)	-5.523** (2.787)	2.255 (2.301)
Province fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes
Observations	2,352	2,184	2,604
R-squared	0.543	0.451	0.303

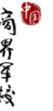
4.5 Empirical Results: Issuance Frequency



- **Local government reduces the frequency of issuing City Construction Investment Bonds after inspection by 1.329 times per month.** (column 1)
- **The scale of each issuance is statistically unchanged.** (column 2)

VARIABLES	(1) frequency	(2) scale each time
Inspection	-1.329** (0.527)	-0.359 (0.537)
Population	-0.330*** (0.095)	0.089 (0.091)
Fixed asset investment	0.001** (0.0005)	0.0004 (0.0005)
Fiscal revenue	0.002 (0.002)	-0.0003 (0.003)
GDP	0.007*** (0.0007)	0.0006 (0.0007)
GDP growth rate	-0.377*** (0.101)	-0.0276 (0.111)
Province fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
Month fixed effects	Yes	Yes
Observations	2,604	1,935
R-squared	0.643	0.210

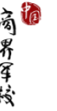
4.5 Empirical Results: Issuance Frequency



- The dependent variables in Column 1, 2, 3 are issuance frequency of county-level, city-level and province-level bond per month, respectively. Coefficients of control variables are not presented.
- **Only the coefficient of county-level issuance frequency is significant.**

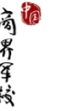
VARIABLES	(1) County level	(2) City level	(3) Province level
Inspection	-0.646** (0.320)	-0.403 (0.293)	0.0184 (0.150)
Province fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes
Observations	2,352	2,184	2,604
R-squared	0.596	0.540	0.372

4.5 Empirical Results: Term of Bond



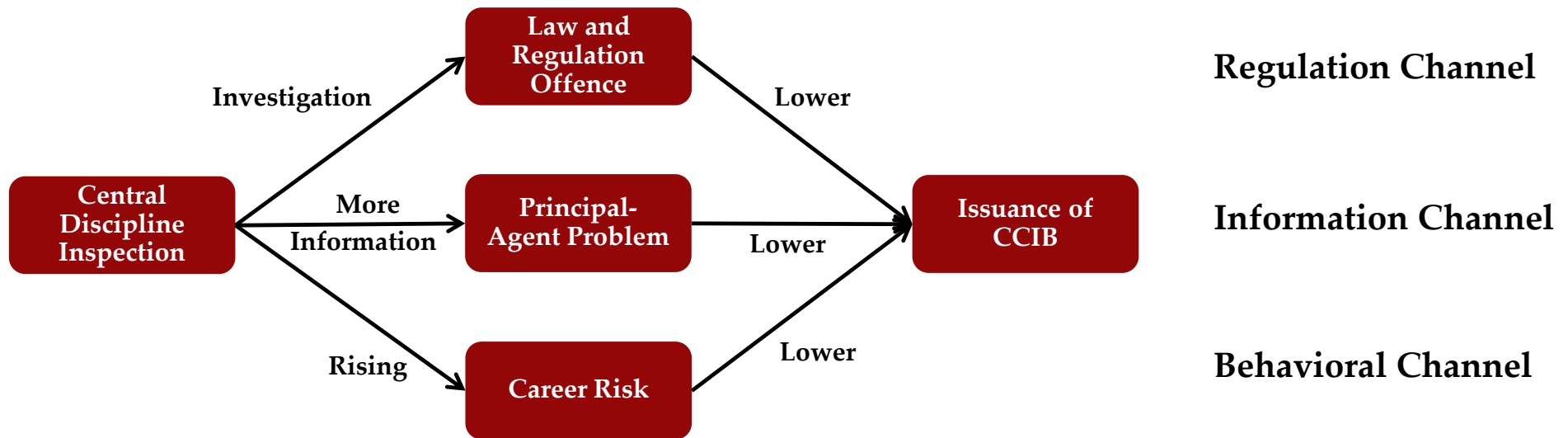
- **Central Government's Disciplinary**
Inspection reduces term of City
Construction Investment Bonds by 0.354
year in average.

VARIABLES	(1) term
Inspection	-0.354* (0.196)
Population	-0.106*** (0.033)
Fixed asset investment	0.0002 (0.0002)
Fiscal revenue	-0.0019* (0.001)
GDP	0.0003 (0.0002)
GDP growth rate	0.032 (0.045)
Province fixed effects	Yes
Year fixed effects	Yes
Month fixed effects	Yes
Observations	1,763
R-squared	0.225

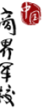


Part 5 Discussion

5.1 Why local governments decrease debt issuance?



5.1 Why local governments decrease debt issuance?



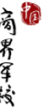
■ Regulation Channel:

- The CCIB issuance may directly and indirectly involve **violations of laws and regulations**, which will be investigated by the central government:
- **Evidence 1:** Dushan County (as mentioned above); Dafang County
- **Evidence 2:** A local government uses the its government office building as collateral for debt service (He, 2018)

■ Information Channel:

- Principle-agent problem: The central government may **not be aware of the over-borrowing** when promoting officials, and inspections help he central government to understand the issue:
- **Liu (2013)** : The Organization Department of the Communist Party of China did not use local government debt as an evaluation indicator for promotion.

5.1 Why local governments decrease debt issuance?



■ Behavioral Channel:

- Local officials may try to **avoid ‘risky behaviors’** such as debt issuance during central inspections, since CCIB is in the gray area of law:
- **Evidence 1:** Luo and She (2015) finds that CCIB issuance is lower in the ‘promotion sensitive period’: last year of the term of office.
- **Evidence 2:** Cao et al. (2018) local listed state-owned enterprises decrease information disclosure during central discipline inspections.
- **Related research:** Ramanna and Roychowdhury (2010): “Anti-outsourcing” is a hot issue during the 2004 US election campaign, and companies that have political ties to parliamentarians underreport profits.

■ Alternative explanations:

- Delay issuance: Local officials were busy to deal with central inspections, and slowed the issuance approval process.

5.2 Conclusion and Future Research Plan

■ Key Findings:

- Central Government's Disciplinary Inspection significantly reduces issuance scale of City Construction Investment Bonds (CCIBs) by 1.419 billion yuan per month or 28.7%.
- There is significant heterogeneity on government hierarchy: the decrease is mostly on county and municipal level CCIB, and there is no significant influence on CCIB issued by provincial government.

■ Drawbacks and Further Research Topics:

- **Data:** lack of data of control variables on municipal and county level.
 - CNKI database collect macro data from statistical year books of city level but the data quality is poor (missing data and Inconsistent standards)
 - Our professor Dr. Gu Yizhen is working on project to build a better database
- **Methodology:**
 - Robustness checks: Parallel trends test; Pre-trend test
 - Identification of the effects through three channels



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Wind Financial Terminal:

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Thank You!