The Role of China's State-owned Enterprises in Preserving Social Stability

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Abstract

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As recent debates on China's re-emphasis on the state sector mainly focused on economic profitability, this paper examines how much the state-owned enterprises (SOEs) contribute to social stability. Using a province-level panel regression, I find that the increase of SOE share of local employment is associated with the increase of protests as well as labor disputes from 2001 to 2011. This study interprets these empirical findings as evidence that SOEs may not be so effective in addressing social unrest in general, but not necessarily deteriorating social stability.

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1. Introduction

Since the Reform and Opening-up in 1978, China has experienced rapid economic growth for nearly four decades. Such a boom not only transformed China from an entirely planned economy to a maturing market economy with Chinese characteristics, but also changed Chinese society drastically. On the one hand, the impressive poverty reduction and infrastructure improvement raised the well-being of the majority population. On the other hand, China today is among the most unequal societies in the world.[1] However, the social volcano of public discontent has not been about to erupt in mainland China.[2] Overall, Chinese society is amazingly stable.

A significant and contentious feature of the Chinese economy today is the large-scale of the state-owned sector. According to OECD statistics, China has the largest state-owned enterprises sector (SOEs) in emerging market and post-transition economies. Central-controlled Chinese SOEs alone exceed all OECD countries' SOEs measured by either value or employment. [3] However, despite the large scale and favored policies, many Chinese SOEs were found to be underperforming and squeezing out private enterprises.[4] Plenty of work has proved that SOEs are less productive than private enterprises. As such, many believe that prioritizing SOEs is dragging China's economy down. The Chinese government is aware of SOEs' full inefficiency and they have been promoting SOE reforms since the late 1990s. But at the same

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[1] Yasheng Huang (2010), Capitalism with Chinese Characteristics: Entrepreneurship and the State. 256.

[2] Whyte and Im (2014), Is the Social Volcano Still Dormant? Trends in Chinese Attitudes toward Inequality

[3] OECD (2017), The Size and Sectoral Distribution of State-Owned Enterprises, OECD, Paris.

[4] Nicolas Lardy (2019), The State Strikes Back

time, the government has showed no interest in lowering SOEs' importance in the economy. Instead, the central government has been emphasizing strengthening SOEs, claiming that "SOEs are the essential sector for boosting national power and protecting people's interests.[5]"

China has valued both economic growth and stability over time. Given the social responsibilities SOEs bear, such as infrastructure in less-developed areas, reducing poverty, and stabilizing employment, it seems true that mitigating social conflicts caused by intra- and inter-regional inequality is one of the major functions of SOEs. As the government sees SOEs as an important vehicle for national policy objectives, it is interesting to explore the reality – what functions do SOEs serve to compensate for its economic inefficiency for the government as the shareholder? More importantly, how much do SOEs meet these goals?

Answering these questions help understand the rationale behind the existence of the large share of SOE sector in the economy, as well as the state's persistent industrial and financial policies that favor the SOE sector, despite its relatively low economic return. In addition, a school of thought thinks China is a challenge to current global trade governance out of its unique state-capitalism.[6] Critics have been proposing to reduce the state's control in the economy. Without knowing the role of SOEs for the party-state, it is unlikely to precisely analyze the future direction of economic or political reforms.

In this paper, I will use empirical evidence to test this statement, examining whether SOEs indeed contribute to reducing social conflicts. I use a panel regression model to investigate the relationship between social unrest events and SOE employment during the sample

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[5] Xi 习近平 (2016), *Make the state-owned enterprises stronger and better* 理直气壮做强做优做大国有企业. 新华社.

[6] Mark Wu (2016), The "China, Inc.": Challenge to Global Trade Governance

period of 2001-2011. Although correlation is less definite than causality, it can still help to know the status.

In this study, based on two sources of data, two separate indicators – protest cases and labor dispute cases – are used to measure social stability. The protest data is from the Global Database of Events, Language, and Tone (GDELT), which is a Google supported dataset based on a computer algorithm to automatically collect reported events on the new media. The labor dispute data is the number of accepted labor disputes cases by the Chinese courts, which comes from the China Labor Economy Database collected by Easy Professional Superior China Data (EPS China Data). The sample data spans from 2001 to 2011 and is sorted into province-year structure for panel analysis. The main finding is that the increase of SOE share of local employment is associated with the increase of protests as well as labor disputes from 2001 to 2011.

The remainder of this paper is organized as follows. Section 2 discusses current literature. Section 3 describes the institutional background of social unrest and the history of SOEs. Section 4 put forward the two hypotheses to be tested and explains the econometric specification. Section 5 describes the data. Section 6 presents empirical results and interpretations. Section 7 conducts some robustness tests. Section 8 concludes the paper.

2. Literature Review

The debate on the party's re-emphasis on the state sector has been rising since Xi Jinping took office. The scale of Chinese SOEs is one of the major topics on the table. Nicholas Lardy's book, *The State Strikes Back*, represents a group of views that since SOEs are underperforming, China's economic slowdown is mostly the result of a return to state control of the economy, and the burgeoning of misallocation of resources by China's financial sector. The typical opposite view holds that SOEs are favorable to long-run growth and tend to offset the adverse effect of

economic downturns on the regional level, because SOEs can carry out massive investment and bear more risks of technology innovation.[7]

While the above views differ on the economic perspectives of SOEs, another group of studies concentrated on the social function of SOEs. In general, many believe that when social stability is low, SOEs are useful for hiring excess labor and bear people's retirement benefits[8]; and properly operated SOEs can become a vehicle to create stability in conflict-prone societies[9]. Several empirical pieces of research on China confirmed the SOEs' pro-stability function. Jaya Wen found that the government subsidizes SOEs to boost employment of specific demographics, and the increase in employment depresses the likelihood of unrest.[10] Haikun Zhu's findings showed that SOEs use internal funds to address social unrest, deploying the "carrot and stick" strategy depending on the feature of the event. For example, the government would offer a "carrot" by funding SOEs in the affected area to generate benefits to the public, such as larger labor payments and additional capital expenditures. However, if the protests are severe political conflicts threatening its authority, the government would apply a "stick" by withdrawing resources.[11]

These studies proved that SOEs could be a useful policy instrument in response to social unrest especially in conflict-prone environments. However, according to studies on China's

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[7] Qi and Kotz (2019), The Impact of State-Owned Enterprises on China's Economic Growth

[8] Shleifer and Vishny (1994), Politicians and Firms.

[9] Neil Efird (2010), The SOE as a vehicle for stability.

[10] Jaya Y. Wen (2019), The Political Economy of State Employment and Instability in China.

[11] Haikun Zhu (2018), Social Stability and Resource Allocation within Business Groups.

social unrest events and mass incidents, the causes of protests and mass disputes are diverse and complex, including but not limited to land disputes, labor conflicts, and environmental degradation, which happen more frequently in places seeking industrial and urban expansion[12] than in troublous areas as described above. The severity of unrest events also varies. Not all SOEs respond to all social unrest equally. Besides, years of SOE reforms also put a portion of SOEs more commercially oriented and bear fewer policy obligations. Therefore, given the large-scale of China's SOEs, when taking them all together into account, the role of SOEs in addressing social unrest remains to be determine.

In this study, I will probe into this question and present the correlation between SOEs (mainly SOE employment) and social stability.

3. Institutional Background

3.1 The pre-reform SOEs

Before Reform and Opening Up in 1978, SOEs were the main players in Chinese economy. During the planned economy period, SOEs functioned more like social institutions than merely a workplace, which encompassed urban residence' livelihood for a lifetime. At that time, alternative work opportunities like private businesses were closed off. Besides the party-state administration and public service institution[13] (shiye danwei), state-owned and collective owned enterprises were the primary sources for non-agricultural labor.

A distinguishing feature of pre-reform SOEs is the permanent employment, as known as the "iron bowl." Once a worker was selected into SOEs, he or she could stay in the company for

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[12] Gobel (2012), Social Unrest in China. 37-39.

[13] Public service institution refers to social service organizations established by the government using state-owned assets, which primarily engage in education, science and technology, culture, health and other activities.

life and obtain the services and benefits provided by the work unit. Typically, SOEs provided their workers with the following benefits[14], although the actual benefit package might vary depending on the size of the SOE and the city where it was located:

- Job security
- Guaranteed low-price access to food grains, as well as other scarce commodities
- Health care (about 40% of all general hospital beds were in the state-owned industrial system)
- A pension and other benefits, including health care, upon retirement
- Primary- and middle-school education for the children (70% of state enterprises ran schools of some kind)
- Low-cost housing, supplied by the work unit

Highly stable employment, valuable company welfare, and relatively high social status made an SOE job position attractive to urban citizens, despite they might also be subject to political movements and campaigns during the Mao era. Meanwhile, through such a comprehensive and tight social network tie, the party-state was able to mobilize the urban population. Industrial sociologist Andrew Walder concluded this situation that "Chinese workers relate to plant officials as employees, but at the same time they relate to these state functionaries as citizens to their government. When workers routinely comply with the party and managerial authority, they are also consenting to the political authority of the state."[15] In other words, through employment provision and personnel management, SOEs effectively served to conduct social control for the party-state.

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[14] Barry Naughton (2018), The Chinese Economy: Adaptation and Growth. 172.

[15] Andrew Walder (1988), Communist Neo-Traditionalism: Work and Authority in Chinese Industry. 246.

3.2 Legacy of SOE reforms

Under the enthusiasm of Reform and Opening-Up and pursuing economic growth, the Chinese government started reforming SOEs since 1978 to improve enterprise efficiency. In the 1980s, SOEs gained more autonomy to incentivize productivity through the establishment of profit tax to replace profit remittance, leasehold system, contract responsibility system, separation of ownership and managerial authority, etc.[16] In the 1990s, compared with the vitality and efficiency of private enterprises, SOEs remained at a very low level. A bunch of SOEs were heavily in debt. So, the central government launched the SOE Restructuring program to close, sell, and privatize the majority of underperforming ones. Only hundreds of large-scale SOEs were retained. Appendix 1 provides a detailed timeline of SOE reforms.

During the reform process, SOEs gradually changed from an all-encompassing social institution to performance-oriented corporations. Accordingly, the previous privileges of SOE workers were greatly diminished. Economic benefits and welfare shrank. SOE workers themselves who used to be the political pioneer class became just average workers whose social status declined overall. In the face of these changes, the status of workers changed from the center to the edge, from glory to bleak.[17] The transformation of the macroeconomic environment also changed the self-identity of workers and their conception about their relations with the state, the enterprises, and the society, which influences labor relations and social stability. For example, between 1992 and 1997, the number of SOE workers involved in labor disputes each year was about 1.26 million; in 1998, the number of workers participating in such

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[16] Sheng and Zhao (2012), China's State-Owned Enterprises: Nature, Performance, and Reform. Chapter 1.

[17] Zheng 郑庆杰(2015), *Identity and Production Politics: A Study of Labor Relations in the Changes of State-owned Enterprises* 身份认同与生产政治：国企变迁中的劳动关系研究

demonstrations increased to 3.6 million.[18] The main reason of these labor protest were the deteriorating working conditions, the increasing violation of workers' rights and interests, and the decline in workers' living standards caused by economic transformation.

3.3 Today's SOEs

After years of reforms, the scale of Chinese SOEs nowadays is far smaller than they were and withdrew from most non-strategic industries. But they have still kept the absolute control over strategic industries, including defense, electricity, oil and gas, telecom, coal, shipping, aviation, and rail. In 2003, the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) was established as the shareholder and regulator of industrial SOEs, the Central Huijin Investment Co., Ltd (Huijin) for financial SOEs. In the personnel administration aspect, the turnover of SOE managers at each level is overseen by the Organization Department of the Chinese Communist Party.

Although the economic profitability of SOEs is still not satisfactory in general, a group of scholars thinks that the government sees SOEs as the second-best way to maintain social stability.[19] Some studies on China support this opinion. For example, Jaya Wen proved that SOEs function to promote social stability through job provision in Xinjiang, given the evidence that SOE employment of male minorities differentially increases in response to ethnic unrest

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[18] Chen 陈峰(2004), *State-owned enterprise restructuring and workers' struggle* 国企改制与工人抗争

[19] Lin et al. (2020), State-owned enterprises in China: A review of 40 years of research and practice

threat.[20] Haikun Zhu's work indicates that the government uses SOEs as an instrument to conduct carrot-and-stick policy in response to regional social unrest by funding SOEs in the affected area to generate benefits to the public and withdrawing resources when the protests is threatening the state's authority.[21]

However, ethnic conflicts in Xinjiang is more of a unique case than in majority Chinese provinces where land disputes, labor disputes, and environmental concerns are more prevailing. These social disturbances are mainly caused by rapid economic development that SOEs also engage in. Besides, the process of SOE reforms has also left problems that cannot be solved in a short time. Whether SOEs can promote overall social harmony remains a question. The following two parts will introduce the features of social unrest and labor issues of SOEs in China.

3.4 Features of Chinese social unrest

Recent studies on China's social unrest have reached a consensus that a majority of social disturbances were directly linked to or sparked by economic issues, and they didn't challenge the government's authority. Rights protection is the main type of social unrest in Chinese society, accounting for 80% of mass incidents nationwide.[22] Land disputes, labor conflicts, and environmental degradation are the main grievances that cause social unrest. [23] Hence, only using

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[20] Jaya Y. Wen (2019), The Political Economy of State Employment and Instability in China

[21] Haikun Zhu (2018), Social Stability and Resource Allocation within Business Groups

[22] Yu 于建嵘 (2009), *The main types and basic characteristics of current mass incidents in China* 当前我国群体性事件的主要类型及其基本特征

[23] Gobel (2012), Social Unrest in China

ethnic conflicts or some riots as the indicator of social unrest cannot reveal the reality of social unrest. When looking for the overall effects of SOEs on social stability, general social protest is a better indicator of social unrest.

Although these protests have not seemed to produce a negative impact on the legitimacy of the government's rule, social unrest gradually decreases social stability and will cause deterioration of the economic environment. Since people prioritize economic well-being over freedom and define democracy accordingly (rather than procedural),[24] the party has the pressure to maintain people's well-being to sustain its legitimacy. As a result, the Chinese government has been emphasizing the importance of social stability in economic development. Building a harmonious society is an essential goal. Fiscal expenditure on public security[25] has also been rising over the years (Figure 1).

Economic analysis of social unrest found that market-based modernization contributes to social dissatisfaction, and widespread corruption and malfeasance amplify this tension.[26] Given the nature of social unrest, the views that hold SOEs can help alleviate the conflicts resulted from unequal income distribution may be over-optimistic.[27] SOEs alone may be weak in reducing overall social conflicts.

[Figure 1 about here]

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[24] Doh Chull Shin (2011), Confucian Legacies and the Making of Democratic Citizens: Civic Engagement and Democratic Commitment in Six East Asian

[25] The public security expenditure includes state security, police, domestic surveillance, armed civil militia, and other measures to deal with public disturbances.

[26] Albert Keidel (2005), The Economic Basis for Social Unrest in China

[27] Xiang 项兵 (2013), *China needs state-owned enterprises at this stage* 现阶段中国需要国有企业. Financial Times.

3.5 Labor issues in SOEs

The largest wave of SOE restructuring occurred in the late 1990s, closing down the most inefficient state-owned and collective-owned enterprises and making room for the market economy. SOE layoffs continued in the early 2000s, with 20 million more SOE and collective jobs lost by 2004.[28] Although plenty of new jobs were created by the private sector, workers from regions far from the economic center, such as the rust-belt provinces, might find it hard to get one. Some insolvent SOEs were unable to pay wages and financial compensation for the leadoff. Some scholars indicate that the SOE restructuring policy had significant effects on the social marginalization of workers.[29]

By the late 2000s, the problem of labor dispatching, more known as a temporary worker system, raised national concerns. According to an official survey, by 2011, labor dispatch workers nationwide accounted for 13.1% of the enterprise employment, around 37 million persons, while SOEs had the largest share, having 16.2% dispatch workers of total SOE employment.[30] These temporary workers didn't receive equal payment and social welfare as formal workers in the same position, while they usually worked longer with higher intensity. As a result, the grievance of this type of workers toward their unfair treatment may bring about unexpected labor issues within SOEs.

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[28] National Bureau of Statistics

[29] Michael Zhang and Huiqing Liu (2006), The Social Marginalization of Workers in China's State-Owned Enterprises

[30] All China Federation of Trade Unions 中华全国总工会劳务派遣问题课题组 (2012)，*Investigation on the current status of labor dispatching in China* 当前我国劳务派遣用工现状调查

4. Hypothesis and Econometric Specification

4.1 Hypothesis

Based on the preceding analysis, economic-related social conflicts and labor issues in Chinese SOEs are two important considerations to evaluate the relationship between social stability and SOEs. Using SOE employment as the main measure of SOEs, the following hypotheses are put forward:

Hypothesis 1: Although some SOEs function to mitigate regional conflict through employment provision, SOE employment doesn't have the capacity to reduce social unrest as a whole.

Hypothesis 2: SOE employment doesn't have the capacity to reduce labor disputes.

4.2 Panel data regression model

The aim of this paper is to examine whether SOEs contribute to social stability by exploring the correlation between social unrest events and SOE employment. I use panel regression to make province-year analysis for 31 provinces over ten years (2001-2011). To control unobservable province-related and time-variant factors, both individual fixed effects and time fixed effects are applied to the panel regression model. The model is expressed as

$$Stability_{it} = \beta_1 SOE_{it} + \beta_2 Control_{it} + \lambda_t + \alpha_i + \varepsilon_{it}$$

The advantage of panel regression is that panel data treats “one individual in one year” as an observation, i.e. here, i indicates the province and t indicates the year, so that the panel model can achieve cross-section and time-series analysis at the same time. $Stability_{it}$ is the dependent variable. SOE_{it} is the key independent variable. $Control_{it}$ is the place holder for all control variables.

α_i functions as the individual fixed effects in the model, which assumes each individual variable have an intrinsic value and uses the repeated observations on the same individual over time to estimate the intrinsic value. Here, α_i controls factors determined by provincial history, culture, geography, anything that is time-invariant.

λ_t functions as the time fixed effects in the model, which controls for variables that are constant across provinces but vary over time. λ_t is interpreted as the effect on the independent variable in year T=t, where only T-1 dummies are included in the calculation.

Hence, this equation directly measures the effect of SOE employment on social stability when holding province, year, and control variables constant.

Since the dependent variable $Stability_{it}$ is measured by two different indicators, protest and labor disputes, the main model above is adjusted into two variations to adapt to the statistical outliers respectively. The two models are

$$Protest_{it} = \beta_1 SOE_{it} + \beta_2 Control_{it} + \lambda_t + \alpha_i + \varepsilon_{it} \qquad (1)$$

$$Labor_{it} = \beta_1 SOE_{it} + \beta_2 Control_{it} + \lambda_t + \alpha_i + \varepsilon_{it} \qquad (2)$$

The dependent variable is measured by protest counts and labor dispute case counts. Each indicator has three sub-types, which I will describe in detail in part 4.

The key explanatory variable is SOE employment. Here, SOE_{it} is measured by the ratio of SOE employment over the working-age population (age 15-64). There are two considerations to use a percent. First, a percentage includes population aged 15-64 as a control and is comparable across provinces. Second, people who are too young or too old are less likely to engage in protests and labor issues. Age 15-64 population is the working-age population as well as the main potential source of protests.

4.3 Control Variables

Typically, personal wealth affects people's behavior. A rise in per capita income will lead to a decrease in social unrest. Therefore, regional GDP per capita is included as a control variable. Besides, a higher economic growth rate is considered as a stabilizer role in Chinese society. Hence, regional GDP growth rate is included to control differences across provinces.

The base amount of population and employment may also influence the number of social unrest events. To control the more or fewer events caused by the base number, total population, and total employment are added as control variables. The summary of variable definitions is reported below.

[Table 1 about here]

4. Data Description

4.1 Dependent variables: protests and labor disputes

4.1.1 Protests

Protest data was collected from the Global Database of Events, Language, and Tone (GDELT) and spans 10 years from 2001 to 2011. Based on big data and new media, GDELT uses a computer algorithm to automatically analyze the world's broadcast, print, and web news, code, and record those reported events. GDELT coded those events into different categories, such as protests, riots, peace appeals, and so on. In this study, I collected event data of protests in China. In the original protest data, each record is an individual event with date and location. To conduct panel regression, I sorted protest data by province and aggregated into years for province-year analysis purpose – i.e. the number of protests in a province per year. In case of the error of possible increased reports over the years, time fixed effects can hold this variation constant.

The protest counts in this dataset vary widely by province. Figure 1 shows the sum of protests for each province during 2001 and 2011, as well as the yearly change trend. Beijing and Tibet are the two outliers. This is not to say that the two provinces have substantial social unrest events than other provinces. Rather, it is probably resulted by how the algorithm collects the data. Since this algorithm is based on reported news online, while Beijing is the capital and the source of policy, it's not surprising that Beijing has a higher expose rate than other provinces. Similarly, Tibet is also overly focused internationally due to human rights issues. A slight event may be posted online.

Although reported protest cases are much fewer than the real amount, the relative reported rate across provinces is likely to be stable. This is because the sample period is almost under Hu Jintao administration era except 2001 so that the policy of censoring protest report has a relative consistency. Yearly new media development may also influence the report rate. But since it is a time-variant omitted variable, it is under the control of the year fixed effect by the model. Therefore, reported cases can be a proxy of real protest counts. However, since the over-reported regions are beyond the relative stable reported rate and thereby may lift the average counts, a robustness test will be conducted by excluding Beijing and Tibet from the main model to examine whether the results are still constant.

GDELT also automatically labels protests into different categories. Among China's protests, political dissent (type 140), demonstration (type 141), and violent protests (type 145) are three major types. To explore which kind of protests has stronger correlation with SOE, I also test the three sub-type protests with the same model.

[Figure 2 about here]

4.1.2 Labor disputes

Labor disputes data comes from China Labor Economy Database, which is collected by Easy Professional Superior China Data (EPS China Data) from the National Bureau of Statistics, Ministry of Human Resources, and Social Security Administration of China. Labor disputes data was the number of accepted labor disputes cases by the court. Similar to protests data, labor dispute data is also sorted into provinces and aggregated into years. Figure 2 shows the sum of labor dispute cases in each province per year, as well as the yearly change trend. Labor dispute cases of Guangdong relative to its SOE employment is much more than other provinces. In case that its relatively high labor dispute/SOE employment rate may change the overall result, a robustness test will be conducted by excluding Guangdong from the main model to confirm the consistency of the results.

Official statistics yearbooks also provide three categories of labor disputes – labor wages related disputes, social welfare, and insurance-related deputes, and ending contracts related disputes. Wage-related and contract-related disputes both covered the sample period (2001-2011). But welfare-related disputes only covered 2001-2004, making this dispute type not ideal for panel analysis. In the Model (2), welfare-related sub-type only spans four years.

[Figure 3 about here]

4.2 Independent variables

The independent variable and control variables in this study are all from EPS China Data, which collected the data directly from the National Bureau of Statistics of China (NBS).

The independent variable, SOE, is measured by the SOE employment share of the working-age population (age 15-64). SOE employment is the year-end SOE employed population, obtained directly from NBS. The working-age population is an estimated population

by multiplying the total population and the ratio of population aged 15-64 over the total population from provincial population sample survey.

4.3 Control variables

The GDP growth rate is the yearly change in regional GDP, calculated based on the previous year.

Employment, population, and GDPPC are the raw statistics and represent total employed population (10,000 persons), total population (10,000 persons), and GDP per capita (yuan), respectively.

The summary statistics of variables is reported below.

[Table 2 about here]

4.4 Complementary data

CLB is a database focusing on and recording China's labor protest events. CLB data was not integrated into the panel regression because it only covers periods since 2011, which overlaps just a few years with NBS data where all other independent variables come from. Hence, it is not suitable for a panel data structure. But since it describes many essential characters of labor protests which are not included in the sample data, such as the ownership of enterprises and the demand for labor protests, CLB data can be a good complement to interpret labor issues in SOEs. In the next section, CLB data will be used to support main findings about the correlation between SOE employment and labor disputes.

Figure 2 presents labor protests statistics during 2011 and March 2020 (at the time of writing). In figure 2(1), private enterprises account for 75% of labor protests, the largest share, followed by SOEs, accounting for 15%, the second large share. This distribution is proportionate with their employment share of total employment. This is to say that labor dispute is not an exclusive phenomenon in the private sector. SOEs experience the same.

Figure 2(2) further illustrates the labor protest demands of SOE workers. Labor remuneration related protests – wage arrears, compensation, and payment increase – together account for 82% labor protests. Social insurance-related protests only count 5%. Layoffs and relocation/closure related protest combined count 3%. This distribution supports the result of regression (2) – wage-related dispute is positively correlated with SOE employment, while social welfare-related and ending contracts related disputes have no significance.

A large amount of wage arrears protest cases may be the aftermath of the "contract employment" (劳务派遣) or "temporary worker" (临时工) system inside SOEs. This group of employees gains much less income and social insurance welfare than formal SOE employees.

[Figure 4 about here]

5. Empirical Results

In this section, I present evidence on the effect of SOE employment on China's social stability. I use both provincial yearly social protests count, and labor disputes count as the measure of social stability. The empirical results support the two hypotheses, suggesting that SOEs may not directly help build a more harmonious society through providing employment. In terms of labor issues, SOE employment may be just like other types of employment, bringing disputes.

5.1 Protests and SOE employment

Table 3 reports the results of the panel regression Model (1) with two-way fixed effects. The first column reports the result with all protests as the independent variable. The other three columns report the three majority sub-categories of protests: political dissent related protests (type 140), demonstration or rally (type 141), and violent protest (type 145) in order.

Column (1) shows that China's SOE employment didn't help mitigate social protests in general. The coefficient for SOE is positively correlated with protests at a significance level of

1%, suggesting that the increase of SOE employment may likely lead to an increase of social protests in China during the 2000s. Among the three protest sub-categories, column (2)-(4), demonstration (type 141) is positively correlated with SOE employment at the 1% significance level respectively; while political dissents (type 140) and violent protests (type 145) are not significantly associated with SOE employment. This result supports Hypothesis 1.

These results appear counterintuitive. After all, in conventional views, SOEs are thought to be more stable due to relatively better welfare guarantees and direct state's control. But statistical evidence holds the opposite.

One plausible reason for the positive correlation between SOE employment and protests is worker's resistance of SOE restructuring. As mentioned in section 3, the interests of SOE workers were systematically eroded by the restructuring process, both the decline of social status and material conditions, including massive layoffs, deprivation of benefits, labor rights abuse, etc. Besides, lacking effective state protection and worker's own organization, workers were very vulnerable to these sudden changes. Although the majority of workers had been quiescent, passive, and powerless, not all of them had remained silent about the ongoing changes that were threatening or damaging their interests. They had protested, even in confrontational ways, to stop or revise divestment programs that they perceive as unfair and unjust.[31] The result of regression Model (2) confirmed this possibility from the perspective of labor disputes, which will be discussed in the following part.

One plausible interpretation for this result is that the effect of SOEs varies in societies of different development level. For example, properly operated SOEs can become a vehicle to create stability in conflict-prone societies, which was proved by the case of Liberia – "United

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[31] Feng Chen (2003), Industrial Restructuring and Workers' Resistance in China. 238.

Nations (UN) security forces took steps to enable the state-owned electric power company and state-managed rubber plantations to serve as the basis for political stability. This action yielded three immediate benefits that enhanced stabilization: (1) economic production, (2) employment, and (3) symbolization of governmental control." [32] The ability to bear more risks enables SOEs to facilitate economic stability in societies characterized by high degrees of social unrest which frighten and deter private investors from entering the market. Economic stability proceeds to reduce social instability, because one of the leading problem people face in divided societies is their most basic livelihoods. As a result, SOEs in these kinds of environment help mitigate social conflicts.

But in the 2000s, Chinese society is relatively stable. The Chinese economy also experienced a two-digit growth rate every year due to the vitality and prosperity of private enterprise development, as well as entering WTO. People's living standards greatly improved over the course of the decade. The majority of social conflicts were not out of the most basic livelihood anymore. Rather, people were expecting a better living environment and some civil rights. In this situation, SOEs may not act as effective as they are in conflict-prone environment.

[Table 3 about here]

5.2 Labor disputes and SOE employment

Table 4 reports the results of the panel regression Model (2) with two-way fixed effects. The first column reports the result with all labor disputes as to the independent variable. The other three columns report the three sub-categories of labor disputes: wage-related disputes, social insurance, and welfare-related disputes, and ending contract-related disputes in order. The coefficients in Model (2) are severalfold bigger than in Model (1) only out of the original sample

[32] Neil Efird (2010), The SOE as a vehicle for stability

difference that labor disputes count is severalfold than the protests count. Such a difference may be caused by the way how the data was collected. Protests count is based on new media reports; therefore, protests appear much fewer than labor disputes.

Column (1) has shown that SOE employment didn't help decrease China's overall labor disputes. The sign of the coefficient of SOE employment is positive and is significant at the 5% level, suggesting the likelihood that the increase of SOE employment leads to an increase in labor disputes during the 2000s. Among the three labor disputes sub-categories, only wage-related disputes are significantly positively correlated with SOE employment, consistent with the overall result. The other two categories, social welfare and ending contracts related disputes, don't have significant correlations with SOE employment. This result supports Hypothesis 2.

The results also help us understand labor disputes in Chinese SOEs from a new perspective. The correlations between SOE employment and the three sub-categories suggest that wage-related conflicts may be the major concerns for SOE employees, while social welfare and contracts related issues may not be a big concern for SOE employees.

As mentioned in section 4, statistics from China Labor Bulletin (CLB) also supports this finding. Although labor disputes are frequently reported in the private sector, such as Foxconn, SOEs experience the same in reality. During 2011-2020, private enterprises account for 75% of total labor disputes, SOEs for 15%, which is proportionate with their employment share of total employment. Meanwhile, labor remuneration related protests account for 82% of labor protests within SOE employment. This distribution supports the result of regression (2) – wage-related dispute is positively correlated with SOE employment, while social welfare-related and ending contracts related disputes have no significance.

The possible reasons for this result may be the legacy of SOE restructuring program, as analyzed above, and the aftermath of the "contract employment" and "temporary worker" system inside SOEs. These temporary workers didn't receive equal payment and social welfare as

formal workers in the same position, but they usually worked longer with higher intensity. As a result, labor disputes happened. And these disputes would increase when the economic development is impacted. For example, a report from Shenzhen Luohu District Court stated:

> Due to the huge impact of the international financial crisis in 2008, many enterprises, including SOEs, were facing a decline in efficiency. Since the main industries where state-owned enterprises were involved here were the most affected industries by the financial crisis, while at the same time, the problems left by economic reforms had not yet been fully resolved, in 2008, SOEs in Luohu's jurisdiction inevitably became a place of labor disputes outbreak. This poses new challenges to building a harmonious relationship between labors and enterprises.[33]

[Table 4 about here]

5.4 Summary

These findings show that SOE share of local employment is significantly positively correlated with protests and labor disputes, which indicates that SOEs may not be so effective in addressing social unrest in general. But it is not yet to conclude that SOEs will make the society more unstable. When looking for a more comprehensive explanation for the relation between SOE and social stability, it is necessary to compare with other types of enterprises, such as private enterprises and foreign enterprises. The coefficients between different types of enterprises and social stability need to be compared to see if the SOEs have a bigger coefficient than they do. If the coefficient of SOEs is smaller, then state-owned enterprises can alleviate social conflicts to a certain extent, although they cannot directly reduce social conflicts. Also,

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[33] Ding et al. 丁建华等(2010), *Study on Labor Disputes in Shenzhen State-owned Enterprises under the Background of Financial Crisis* 金融危机背景下深圳国有企业劳资纠纷案件的研究报告

applying an exogenous shock in the study design will help stablish a causal relationship, which is more definitive. But these ideas need further study and data to demonstrate.

6. Robustness Tests

In this section, I conducted several robustness tests to make sure that the main findings are robust to alternative specifications. First, I excluded the outliers mentioned in section four from the model to examine whether the main results hold constant. Second, I used ratio, the protest case share of total population and the labor dispute case share of total population, to replace the original absolute number (count of cases) as the alternative measures of the dependent variables. Third, I used the industrial SOE assets share of regional industrial assets to replace the SOE employment ratio as the robustness measure of the independent variable. Fourth, I divided the sample period into pre-2008 and post-2008 to test if the Global Financial Crisis of 2008 led to a decline in social stability. Fifth, I added the manufacturing and construction industries' employment share of urban employment as control variables to see if industrial concentration impacts the intensity of social unrest activities. Finally, I checked how robust the main findings are when using a lagged dependent variable in the regression.

6.1 Excluding outliers

As mentioned in the section four, Beijing and Tibet are two outliers in the protest data, and Guangdong is the outlier in the labor dispute data. Hence, I excluded the outliers from each model respectively as a robustness test to examine their influences on the main results. Table 5 and 6 show that the results without the outliers are consistent with the main findings.

[Table 5 and 6 about here]

6.2 Protests and labor dispute ratio as the dependent variables

Both Model (1) and (2) used the absolute number (the count of cases) as the measures of the independent variables and included total population as a control variable. However, the impact of population may not be linear. Hence, I used protest cases share of total population (and labor dispute cases share of total population) as the dependent variable to test whether the main findings still hold true. Table 7 shows that protest ratio is not significantly correlated with SOE anymore, while table 8 shows that the positive correlation between labor dispute and SOE is still significant when replacing the original measure with a ratio.

[Table 7 and 8 about here]

6.3 Industrial SOE assets ratio as the independent variable

Both Model (1) and (2) used SOE employment share of the working age population as the measure of SOEs, attempting to examine whether employment is an effective way for SOEs to reducing social unrest. In reality, SOEs function in multiple ways to perform their policy obligations towards the government and fulfill social responsibilities. Assuming larger SOE groups convey more obligations, SOE industrial assets share of regional industrial assets can partly reveal the scale and capacity of SOEs in the provinces, which can be approximatively regarded as a measure of overall SOE social functions.

Hence, I used SOE industrial asset share as the independent variable in both models to see if the main findings still hold true. Tables 7 and 8 show that these two groups of results are consistent. Both protests and labor disputes are still significantly positively correlated with SOE industrial asset share. But the coefficients in the robustness tests are smaller than SOE employment share as the measure. That's to say, SOEs' performance in social stability may be better when including other considerations besides employment.

[Table 9 and 10 about here]

6.4 Pre- and post-2008 comparison

During the Global Financial Crises (GFC), many Chinese enterprises, including SOEs, faced a sharp decline in efficiency and dismissed a large number of people. Considering that the GFC might increase social unrest events during the crises and 2-3 years afterward, I divided the sample period into pre- and post-2008 and ran the regressions separately to see if the impact of the GFC on SOE-social stability relations. Only the pre-2008 protests showed significantly correlation with SOE employment (tables 9 column (1)).

[Table 11 and 12 about here]

6.5 Industry concentration influence

The previous results are based on the assumption that all industries have the same rate of social unrest occurrence. But it is likely that conflicts tend to be more concentrated in several industries like manufacturing and construction. According to a CLB report, "wage arrears are very common in the construction industry, and around 99% of labor disputes are caused by wage arrears."[34] Hence, it is possible that the correlation between SOEs and social unrest is affected by provincial industrial concentration. If there are more SOEs in the dispute-prone industries, the effect of SOEs on social unrest would have been more obvious.

Therefore, I added the manufacturing industry share of urban employment and construction industry share of urban employment as control variables into the models to test the robustness. The results with new control variables are consistent with the main findings, as reflected in tables 11 and 12. Meanwhile, dispute-prone industries, manufacturing, and construction, in this case, did have an impact to the SOE effects, especially on labor disputes –

[34] CLB (2019), *Employment and wages* 就业与工资.

the coefficients of SOEs decreased sevenfold after adding the controls. As for the overall protests, the change of the coefficients is relatively slight.

[Table 13 and 14 about here]

6.6 Lagged dependent variable

The previous measures of social unrest assume that the protests and labor disputes are correlated with the same year SOE employment rate. In reality, there may be a time lag between a conflict occurrence and a change of SOE employment. For example, workers who protest or appeal for wage arrears typically have already worked several years, and their labor contract (if any) may already be dismissed at the time of event happening, while temporary workers also have worked at least several months. In these situations, conflicts are not correlated to the same year SOE employment; instead, these may be correlated to employment a range of time before. Since it's infeasible to give each social unrest event a unique time-lag calculation, here, I applied a one-year lag for both protests and labor disputes in Model (1) and (2) to estimate the robustness of the main findings.

As shown in tables 15 and 16, after lagging the dependent variables by one year, the results are consistent with the main results. Protests are still significantly positively correlated with the SOE employment ratio. So do labor disputes.

[Table 15 and 16 about here]

7. Conclusion

This study started with a review of the history of SOE development and the changing status of SOE employment in society. During the reform process, SOEs have been reorganized from government subsidiaries to corporations. The social status of SOE workers declined from political pioneer class to just average workers. The shifted self-identity of workers and macroenvironment stimulated them to advocate for their own interests, sometimes in the

opposite side to the government. In this situation, SOEs' employment was not as powerful an instrument in maintaining social stability as it was in the planned economy. Not to say there are also labor disputes within the SOEs.

Based on this analysis, I used panel regression models to investigate the relationship between social unrest events and SOE employment during the sample period of 2001-2011. The results support the two hypotheses – first, SOE employment are weak in response to social unrest activities; second, although with relatively better welfare, SOEs nowadays also bring out labor disputes.

These findings supplement previous literature on SOEs' social functions by pointing out the complexity of social unrest in current Chinese society. Although SOEs were found useful in handling ethnic conflicts by employing ethnic minority and some types of regional conflicts by reallocating resources, when examining the overall picture of social unrest in China, SOEs are not effective in reducing conflicts as expected. A limitation of this study is that the results didn't demonstrate the causation of this lack of capacity. Still, this correlation between SOEs and social stability suggests that we should be more cautious when emphasizing SOE's social contribution.

Another noticeable issue is the labor disputes among SOE workers. In an interview with BBC journalists, Dongfang Han, a leader of the Chinese workers' movement, mentioned that

> Twenty years ago, I had never heard of a piece of Chinese worker's strike, nor had I heard of worker protests. Ten years ago, the workers' demonstration began, protesting their unfair treatment during the privatization process. Now in China, no matter among private enterprises, foreign-invested enterprises, privatized state-owned enterprises, or even teachers, taxi drivers, and other industry employees, strikes are taking place one

after another every day, indicating that there are indeed serious inequities in labor relations.[35]

It's generally believed that SOE employment is more reliable and has more welfare, and thereby fewer disputes. Then, the positive correlation between labor disputes and SOE employment may be an alarming signal to pay attention to the drawbacks of the legal institutions regulating labor relations. As the Chinese government claiming to deepen market-oriented economic reforms and further SOE reforms, a set of well-designed employee protection institutions and steady enforcement is essential towards a healthier economic-social ecology.

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[35] Han 韩东方 (2009), *Tiananmen Protest of 1989 and Chinese Workers' Movement* "六四"和中国工运

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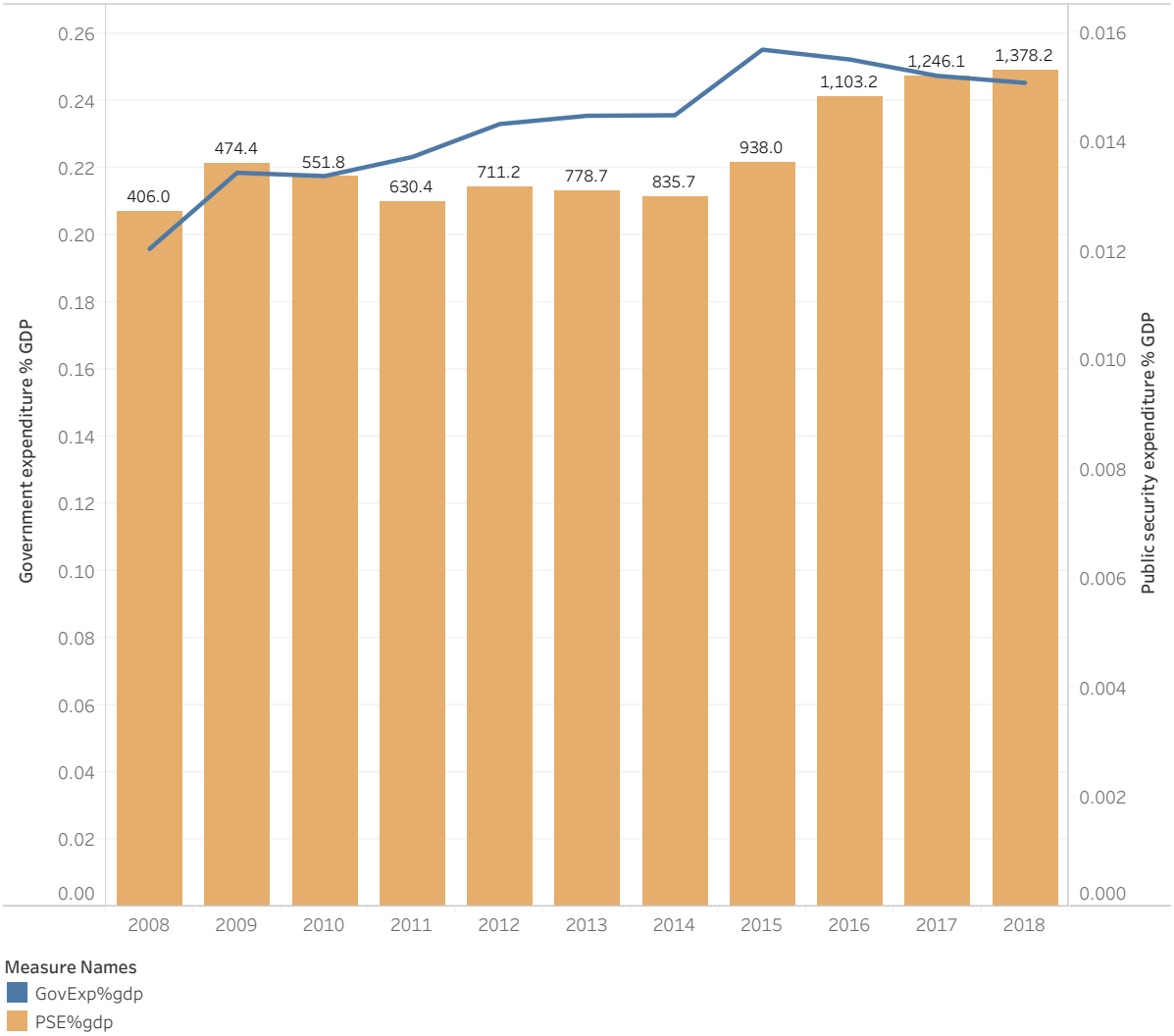
Figures and Tables

Figure 1: Government expenditure v. public security expenditure in China from 2008 to 2018



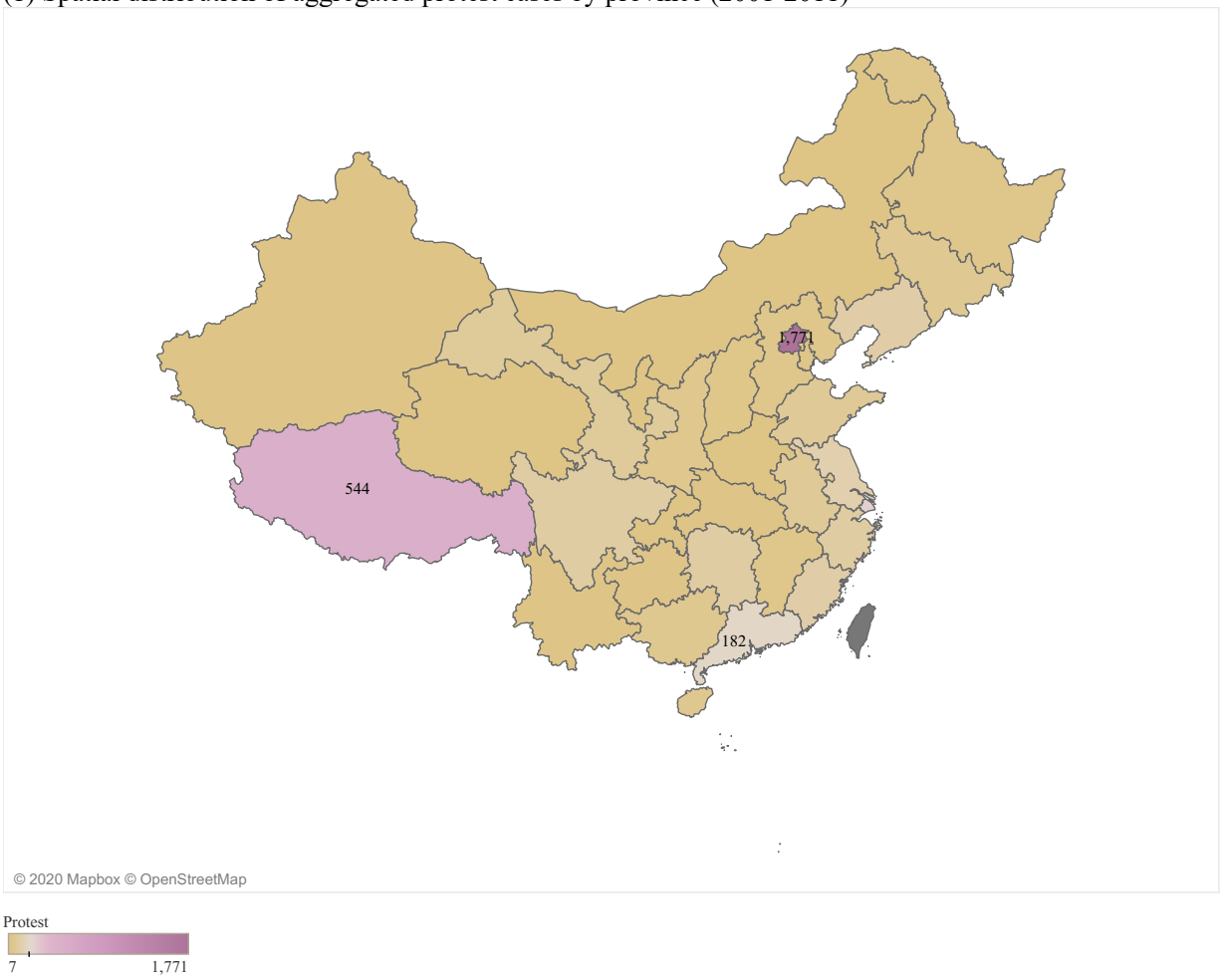
(Source: National Bureau of Statistics of China)

Table 1: Variable definitions

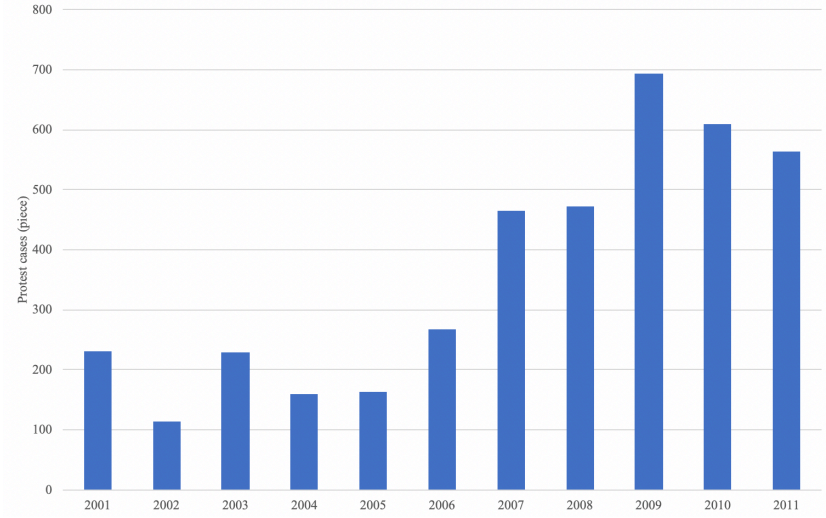
Variables	Definition	Unit
Protest	The annual number of protests per province	piece
Type 140	Engage in political dissent. All civilian demonstrations and other collective actions carried out as protests against the target actor	piece
Type 141	Demonstrate or rally. Dissent collectively, publicly show negative feelings or opinions; rally, gather to protest a policy, action, or actor(s)	piece
Type 145	Protest violently and riot. Protest forcefully, in a potentially destructive manner	piece
Labor	The annual number of court accepted labor dispute cases per province	piece
Wage	Labor remuneration related disputes	piece
Welfare	Social insurance and welfare related disputes	piece
Contract	Relieve or end the labor contract related disputes	piece
SOE	Year-end SOE employment share of working age population (age 15-64)	percent
Employment	Total employment	10,000 persons
Population	Total population	10,000 persons
GDP pc	GDP per capita	yuan
GDP growth	Yearly change in regional GDP	percent

Figure 2: Trend of protests in China 2001-2011

(1) Spatial distribution of aggregated protest cases by province (2001-2011)



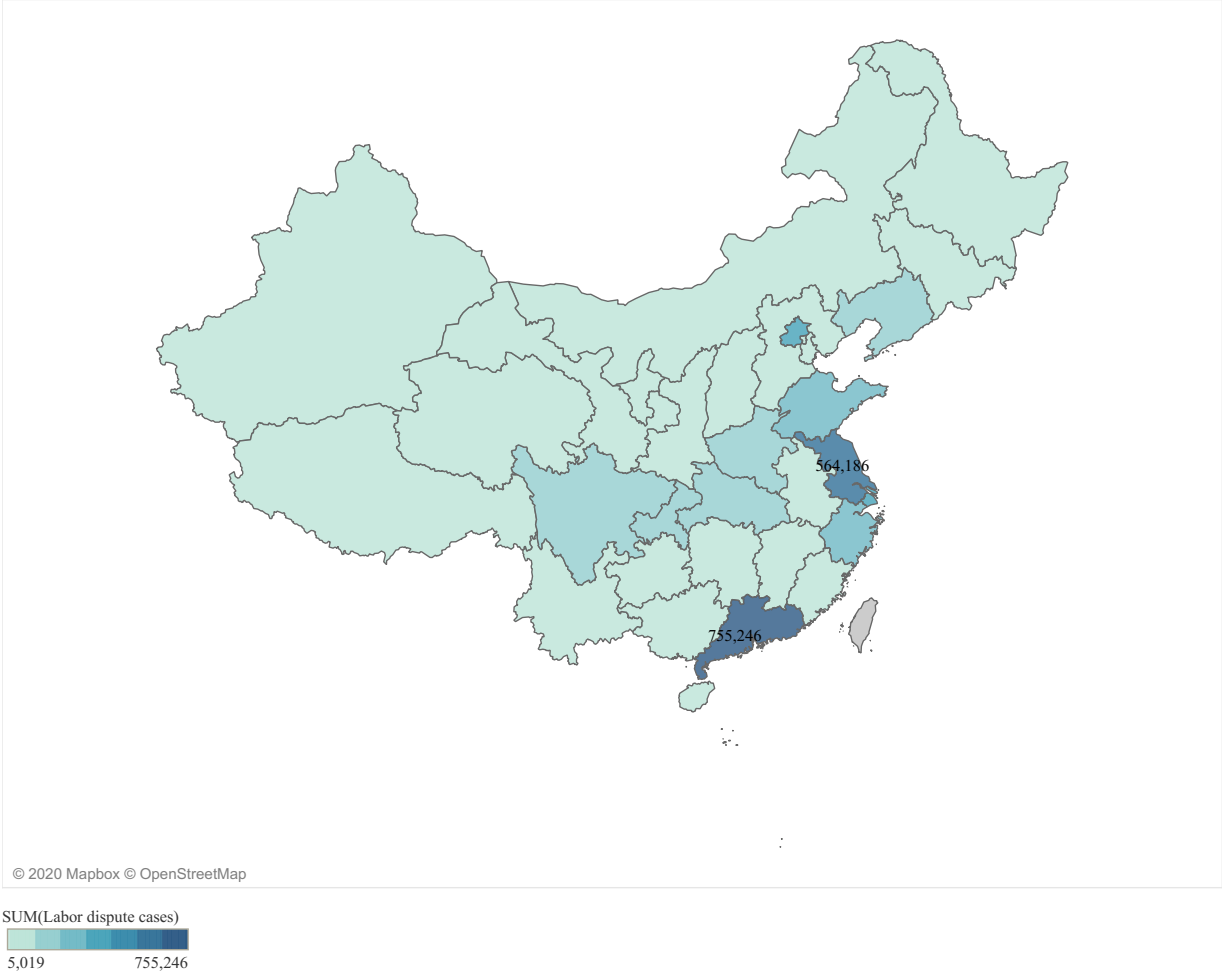
(2) Trend of protest cases by year (2001-2011)



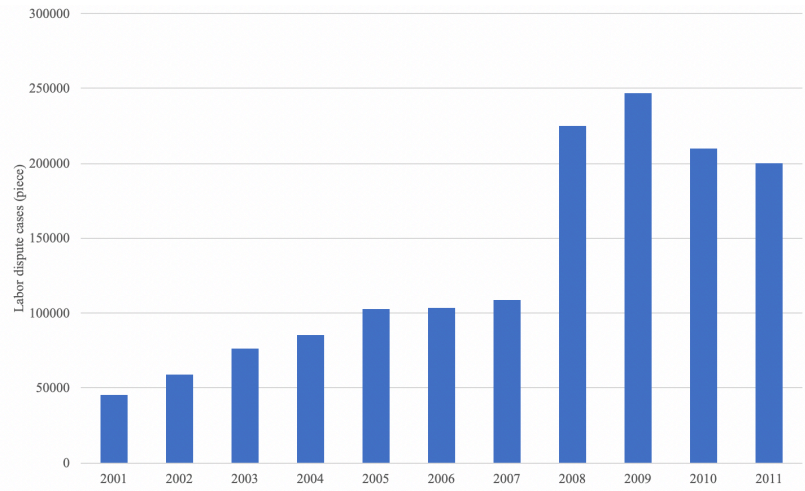
(Source: Protest data from GDELT)

Figure 3: Trend of labor disputes in China 2001-2011

(1) Spatial distribution of aggregated labor dispute cases by province (2001-2011)



(2) Trend of labor dispute cases by year (2001-2011)

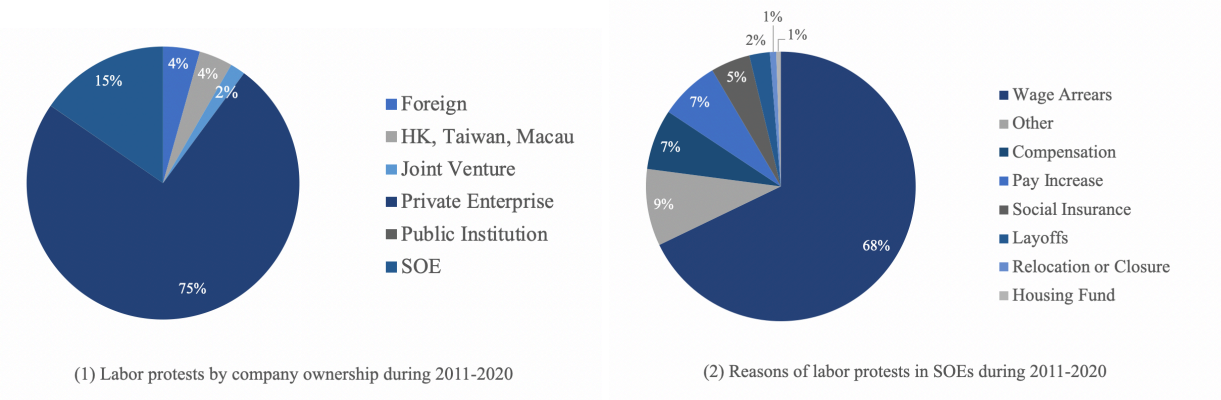


(Source: Labor dispute date from NBS)

Table 2: The summary statistics of main variables

Variables	Observations	Mean	Std. dev.	Min	Max
Protest	341	11.6217	33.44769	0	251
Political	341	1.504399	4.866828	0	43
Demonstrate	341	8.146628	24.68226	0	203
Violence	341	1.184751	4.363404	0	53
Labor Dispute	341	12819.17	18490.62	204	150023
Wage	341	4293.069	7890.465	52	65027
Welfare	123	1594.48	1980.027	6	10306
Contract	341	2179.286	4505.919	0	51450
SOE ratio	341	.0582164	.044439	.0180217	.2652645
Total Employment	341	2351.519	1647.07	126.33	6485.6
Total Population	341	4194.694	2712.909	253.7	10489
GDP pc	341	20964.37	16331.89	2895	85213
GDP growth	341	.1701808	.0597959	-.092554	.496926

Figure 4: China's labor protests during 2011-2020



(1) Labor protests by company ownership during 2011-2020

(2) Reasons of labor protests in SOEs during 2011-2020

(Source: China Labor Bulletin)

Table 3: Protests and SOE employment 2001-2011

Variables	(1) Protest	(2) Pt140	(3) Pt141	(4) Pt145
SOE ratio	382.1***	9.559	335.4***	26.86
	(3.88)	(0.44)	(4.94)	(1.21)
Employment	-0.00628	-0.00108	-0.00471	-0.000473
	(-0.91)	(-0.71)	(-0.99)	(-0.31)
Population	-0.0117	0.0000980	-0.00768	-0.00310*
	(-1.58)	(0.06)	(-1.50)	(-1.85)
GDP pc	0.000411*	0.000000775	0.000331**	0.0000519
	(1.94)	(0.02)	(2.26)	(1.09)
GDP growth	-46.21*	4.688	-33.61**	-10.47**
	(-1.96)	(0.91)	(-2.07)	(-1.98)
_cons	42.68	2.177	23.27	12.72**
	(1.51)	(0.35)	(1.19)	(2.00)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	341	341	341	341
R^2	0.226	0.090	0.249	0.166

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from GDELT.

Table 4：Labor disputes and SOE employment 2001-2011

Variables	(1) Labor	(2) Wage	(3) Welfare	(4) Contract
SOE ratio	84430.0**	45454.7**	6003.0	3243.9
	(2.03)	(2.26)	(0.33)	(0.19)
Employment	11.37***	4.649***	1.004	0.234
	(3.92)	(3.31)	(1.51)	(0.20)
Population	20.68***	6.912***	14.01***	10.01***
	(6.57)	(4.54)	(3.78)	(7.85)
GDP pc	0.670***	0.364***	0.174***	0.0635*
	(7.49)	(8.42)	(2.74)	(1.75)
GDP growth	-12930.3	-10814.7**	1483.5	-4203.2
	(-1.30)	(-2.25)	(0.73)	(-1.04)
_cons	-113015.6***	-41473.5***	-60042.4***	-39957.9***
	(-9.47)	(-7.19)	(-4.14)	(-8.26)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	341	341	123	341
R^2	0.631	0.545	0.566	0.321

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

Note: the dependent variables are from EPS China data.

Table 5: Protests and SOE employment 2001-2011 (excluding outliers: Beijing and Tibet)

	(1) Protest	(2) Pt140	(3) Pt141	(4) Pt145
SOE ratio	101.6**	34.99**	80.71***	-19.96
	(2.47)	(2.29)	(2.77)	(-1.43)
Employment	0.00356	-0.00107	0.00297*	0.00147**
	(1.62)	(-1.32)	(1.92)	(1.98)
Population	-0.000439	0.00128	0.0000905	-0.00133*
	(-0.19)	(1.46)	(0.05)	(-1.66)
GDP pc	0.000103	0.00000390	0.000111**	-0.0000122
	(1.41)	(0.14)	(2.15)	(-0.50)
GDP growth	-0.405	0.654	2.031	-0.435
	(-0.04)	(0.19)	(0.32)	(-0.14)
_cons	-10.32	-5.001	-11.22*	4.133
	(-1.08)	(-1.41)	(-1.66)	(1.28)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	319	319	319	319
R^2	0.321	0.092	0.311	0.199

t statistics in parentheses

* p<0.10, ** p<0.05, *** p<0.01

Note: the dependent variables are from GDELT. Beijing and Tibet are excluded from the model.

Table 6: Labor disputes and SOE employment 2001-2011 (Excluding outlier Guangdong)

	(1)	(2)	(3)	(4)
Variables	Labor_c	Wage	Welfare	Contract
SOE3	102062.7***	51854.5***	7910.8	6937.3
	(3.18)	(3.20)	(0.46)	(0.57)
Employment	2.679	1.652	0.585	0.417
	(1.04)	(1.26)	(0.91)	(0.43)
Population	10.96***	0.276	8.822**	1.034
	(2.89)	(0.14)	(2.23)	(0.72)
GDP pc	0.635***	0.339***	0.162***	0.0286
	(9.05)	(9.55)	(2.69)	(1.08)
GDP growth	-6012.7	-7862.1**	2779.0	-2045.7
	(-0.78)	(-2.02)	(1.38)	(-0.70)
_cons	-56495.6***	-9098.5	-37241.9**	-4296.6
	(-3.95)	(-1.26)	(-2.44)	(-0.79)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	330	330	119	330
R^2	0.619	0.526	0.518	0.140

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from EPS China data. Guangdong province is excluded in the model.

Table 7: Protest ratio as the independent variable

	(1) Protestratio	(2) Pt140ratio	(3) Pt141ratio	(4) Pt145ratio
SOE ratio	0.136	-0.0642	0.183	-0.00837
	(0.59)	(-1.15)	(1.31)	(-0.21)
Employment	-0.0000250*	-0.00000172	-0.0000179**	-0.00000412*
	(-1.77)	(-0.50)	(-2.08)	(-1.67)
GDP pc	-0.000000630	-0.000000150	-0.000000369	-0.000000117
	(-1.28)	(-1.26)	(-1.24)	(-1.36)
GDP growth	-0.0842	0.00531	-0.0642*	-0.0193**
	(-1.53)	(0.40)	(-1.92)	(-2.01)
_cons	0.0663**	0.0112	0.0403**	0.0131**
	(1.98)	(1.38)	(1.98)	(2.24)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	341	341	341	341
R^2	0.073	0.060	0.084	0.082

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from GDELT.

Table 8: Labor disputes ratio as the independent variable

	(1) Laborratio	(2) Wageratio	(3) Welfareratio	(4) Contractratio
SOE ratio	78.31***	45.69***	-3.293	1.140
	(3.93)	(3.81)	(-0.74)	(0.22)
Employment	-0.00211*	-0.00133*	0.0000788	0.000267
	(-1.73)	(-1.80)	(0.47)	(0.84)
GDP pc	0.000412***	0.000224***	0.0000472***	0.0000262**
	(9.70)	(8.77)	(2.93)	(2.39)
GDP growth	-12.01**	-8.729***	0.957*	-1.237
	(-2.52)	(-3.04)	(1.86)	(-1.01)
_cons	-1.815	-0.966	-0.108	-0.333
	(-0.63)	(-0.55)	(-0.22)	(-0.44)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	341	341	123	341
R^2	0.483	0.403	0.476	0.138

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from EPS China data.

Table 9: Industrial asset share as the dependent variable (Protests)

	(1) Protest	(2) Pt140	(3) Pt141	(4) Pt145
SOE asset	82.80***	15.48***	49.93***	12.56***
	(3.87)	(3.35)	(3.31)	(2.64)
Employment	-0.00258	-0.00129	-0.000953	-0.000366
	(-0.38)	(-0.88)	(-0.20)	(-0.24)
Population	-0.0128*	0.000321	-0.00905*	-0.00305*
	(-1.72)	(0.20)	(-1.73)	(-1.84)
GDP pc	0.000277	-0.0000280	0.000256*	0.0000297
	(1.28)	(-0.60)	(1.68)	(0.62)
GDP growth	-38.61	7.470	-31.33*	-8.632
	(-1.62)	(1.46)	(-1.87)	(-1.63)
_cons	5.623	-9.192	8.466	4.859
	(0.18)	(-1.33)	(0.38)	(0.68)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	341	341	341	341
R^2	0.226	0.123	0.217	0.181

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from GDELT.

Table 10: Industrial asset share as the dependent variable (Labor disputes)

	(1) Labor	(2) Wage	(3) Welfare	(4) Contract
SOE asset	14994.0*	11622.4***	-3567.1	1191.7
	(1.66)	(2.67)	(-0.96)	(0.33)
Employment	12.26***	5.048***	1.117*	0.254
	(4.30)	(3.68)	(1.67)	(0.22)
Population	20.38***	6.818***	13.74***	10.01***
	(6.48)	(4.51)	(3.82)	(7.87)
GDP pc	0.646***	0.345***	0.154**	0.0615*
	(7.08)	(7.86)	(2.39)	(1.66)
GDP growth	-11887.3	-9567.0**	1547.8	-4044.1
	(-1.18)	(-1.98)	(0.76)	(-0.99)
_cons	-118631.0***	-47261.3***	-55896.7***	-40653.1***
	(-8.75)	(-7.25)	(-3.70)	(-7.41)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	341	341	123	341
R^2	0.629	0.548	0.570	0.322

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from EPS China data.

Table 11: Pre- and post-2008 comparison (Protests)

	(1) Protest	(2) Protest
SOE ratio	554.8***	-163.3
	(6.14)	(-1.04)
Employment	-0.00497	0.00486
	(-0.85)	(0.28)
Population	-0.0107	0.00152
	(-1.55)	(0.14)
GDP pc	0.00109***	-0.000206
	(4.44)	(-0.33)
GDP growth	5.640	80.15
	(0.33)	(1.60)
2001.Year	0	
	(.)	
2002.Year	-0.879	
	(-0.34)	
2003.Year	3.899	
	(1.38)	
2004.Year	0.496	
	(0.15)	
2005.Year	2.078	
	(0.56)	
2006.Year	1.708	
	(0.42)	
2007.Year	5.474	
	(1.15)	
2008.Year		0
		(.)
2009.Year		15.28**
		(2.31)
2010.Year		4.528
		(0.74)
2011.Year		4.813
		(0.51)
_cons	9.863	-5.323
	(0.37)	(-0.08)
N	217	124
R^2	0.336	0.100

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from GDELT.

Table 12: Pre- and post-2008 comparison (Labor disputes)

	(1) Labor	(2) Labor
SOE ratio	16721.9 (0.72)	-19961.9 (-0.33)
Employment	9.238*** (6.10)	-20.68*** (-3.10)
Population	4.503** (2.53)	26.38*** (6.25)
GDP pc	0.387*** (6.11)	0.162 (0.68)
GDP growth	1974.4 (0.44)	24448.7 (1.26)
2001.Year	0 (.)	
2002.Year	-421.2 (-0.63)	
2003.Year	-97.91 (-0.13)	
2004.Year	-470.9 (-0.54)	
2005.Year	0.782 (0.00)	
2006.Year	-1557.4 (-1.50)	
2007.Year	-2353.2* (-1.92)	
2008.Year		0 (.)
2009.Year		2622.4 (1.02)
2010.Year		-4084.6* (-1.72)
2011.Year		-5595.7 (-1.54)
_cons	-37596.0*** (-5.52)	-48068.4* (-1.83)
N	217	124
R^2	0.631	0.416

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from EPS China data.

Table 13: Manufacturing and construction industries (Protests)

	(1) Protest	(2) Protest
SOE ratio	458.2*** (4.08)	487.3*** (4.43)
Manufacturing ratio	-69.05 (-1.03)	
Construction ratio		-241.6*** (-3.44)
Employment	-0.00608 (-0.57)	-0.00424 (-0.43)
Population	-0.00784 (-0.95)	-0.00888 (-1.10)
GDP pc	0.000276 (1.05)	0.000155 (0.60)
GDP growth	2.563 (0.07)	18.56 (0.53)
_cons	37.80 (1.08)	36.23 (1.08)
Fixed Effect	Province and Year	Province and Year
N	279	279
R^2	0.219	0.253

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from GDELT.

Table 14: Manufacturing and construction industries (Labor disputes)

	(1) Labor	(2) Labor
SOE ratio	107127.8** (2.15)	110258.0** (2.22)
Manufacturing ratio	13153.7 (0.44)	
Construction ratio		-43687.5 (-1.38)
Employment	10.35** (2.20)	12.03*** (2.68)
Population	17.31*** (4.74)	17.27*** (4.75)
GDP pc	0.600*** (5.15)	0.585*** (5.01)
GDP growth	-13916.7 (-0.88)	-11296.3 (-0.71)
_cons	-101542.1*** (-6.57)	-99029.0*** (-6.57)
Fixed Effect	Province and Year	Province and Year
N	279	279
R^2	0.553	0.556

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from EPS China data.

Table 15: Lagged protests and SOE employment

	(1) L.Protest	(2) L.Pt140	(3) L.Pt141	(4) L.Pt145
SOE ratio	442.2***	38.45**	273.5***	38.56*
	(4.50)	(2.05)	(3.71)	(1.68)
Employment	-0.00727	-0.00165	-0.00309	-0.000500
	(-0.89)	(-1.06)	(-0.51)	(-0.26)
Population	-0.00985	-0.000824	-0.00900	-0.00148
	(-1.32)	(-0.58)	(-1.61)	(-0.85)
GDP pc	0.000539**	0.0000234	0.000342**	0.0000831*
	(2.51)	(0.57)	(2.13)	(1.66)
GDP growth	-53.43*	-0.142	-52.30**	-7.564
	(-1.69)	(-0.02)	(-2.21)	(-1.03)
_cons	34.22	5.821	32.59	4.721
	(1.20)	(1.07)	(1.53)	(0.71)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	310	310	310	310
R^2	0.272	0.108	0.243	0.176

t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from GDELT.

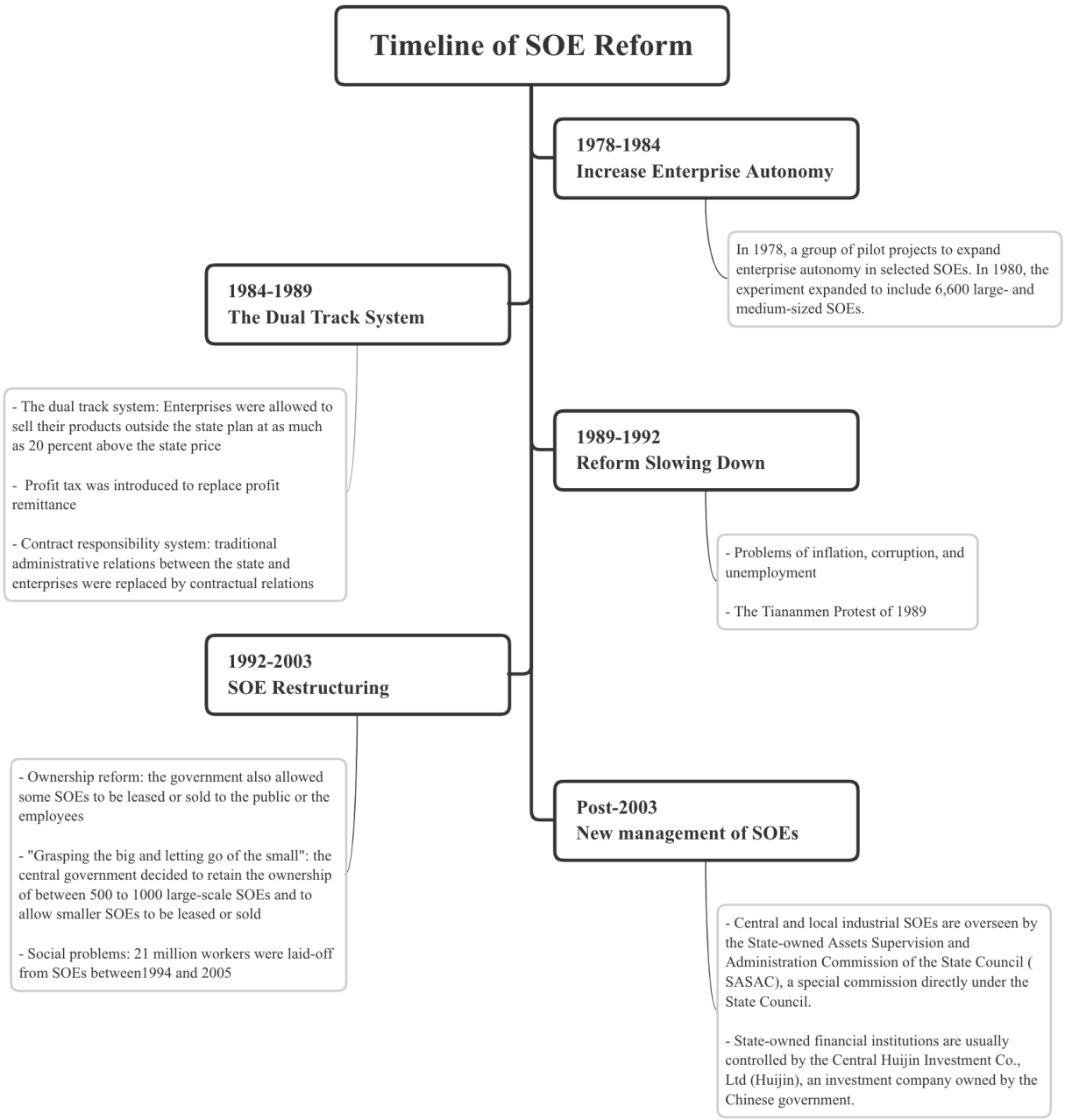
Table 16: Lagged labor disputes and SOE employment

	(1) L.Labor	(2) L.Wage	(3) L.Welfare	(4) L.Contract
SOE ratio	83963.3*	57681.0**	6415.8	-11037.2
	(1.71)	(2.45)	(0.34)	(-0.56)
Employment	29.55***	12.44***	2.373	8.032***
	(7.24)	(6.38)	(1.63)	(4.89)
Population	-5.061	-4.543**	1.476	-4.546***
	(-1.36)	(-2.55)	(0.44)	(-3.04)
GDP pc	0.532***	0.307***	0.0337	-0.0282
	(4.96)	(5.99)	(0.67)	(-0.65)
GDP growth	-2733.9	-4383.3	630.0	2937.2
	(-0.17)	(-0.58)	(0.20)	(0.46)
_cons	-50055.9***	-13926.1**	-11037.0	2834.2
	(-3.52)	(-2.05)	(-0.90)	(0.50)
Fixed Effect	Province and Year	Province and Year	Province and Year	Province and Year
N	310	310	92	310
R^2	0.573	0.498	0.257	0.177

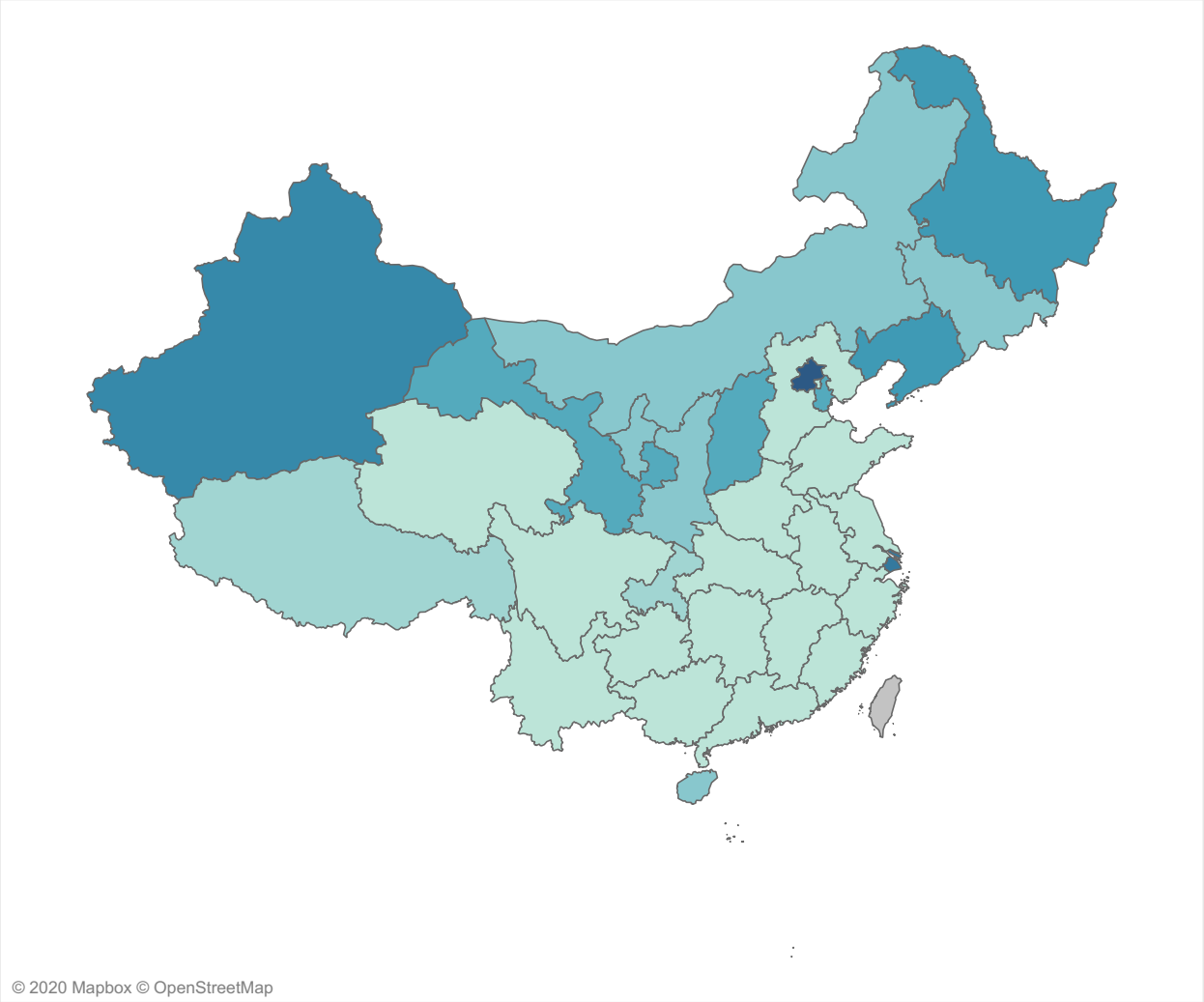
t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Note: the dependent variables are from EPS China data.

Appendix

Appendix 1: Timeline of SOE reforms

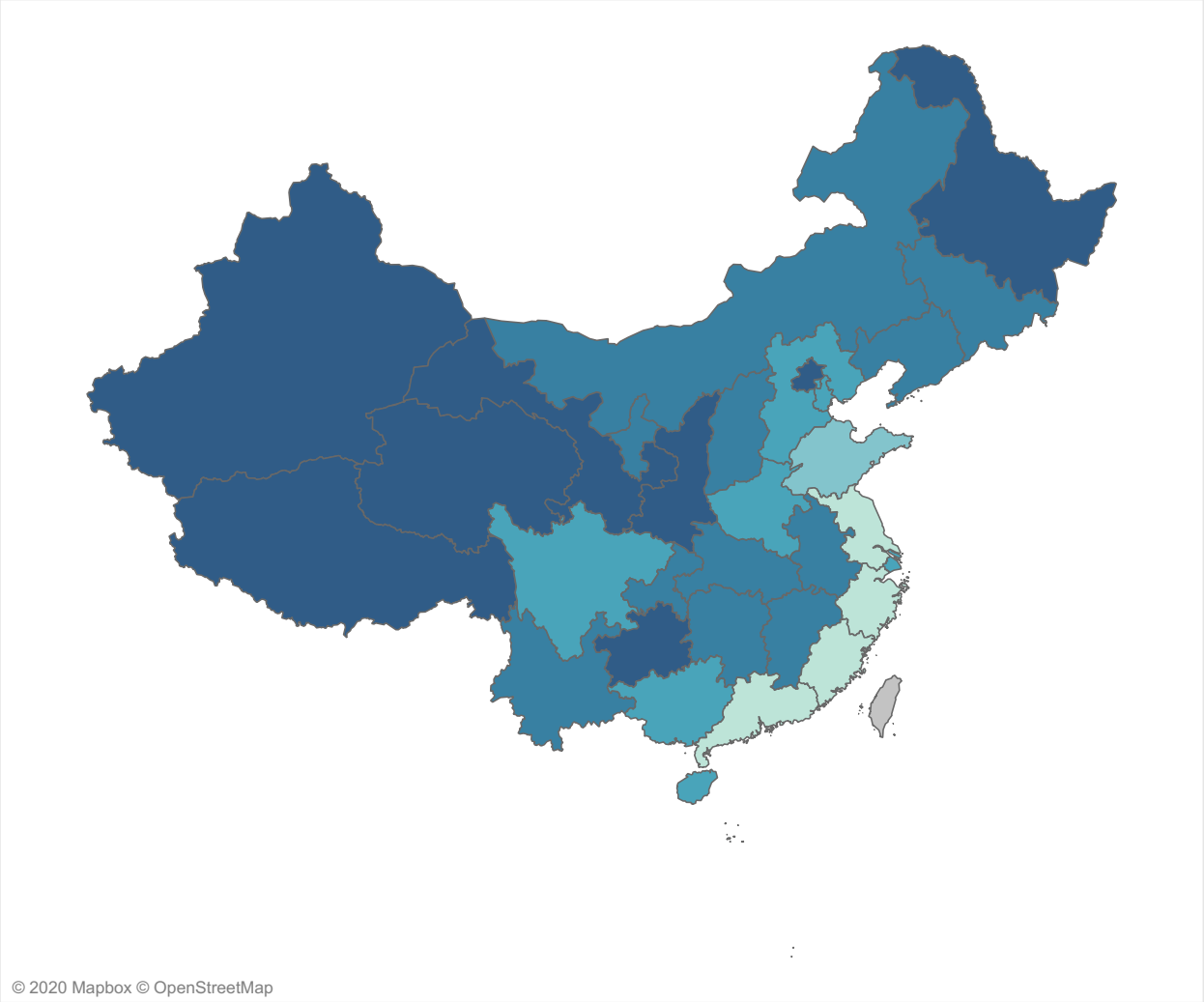


Appendix 2: SOE employment share of total employment by provinces (2001-2011)



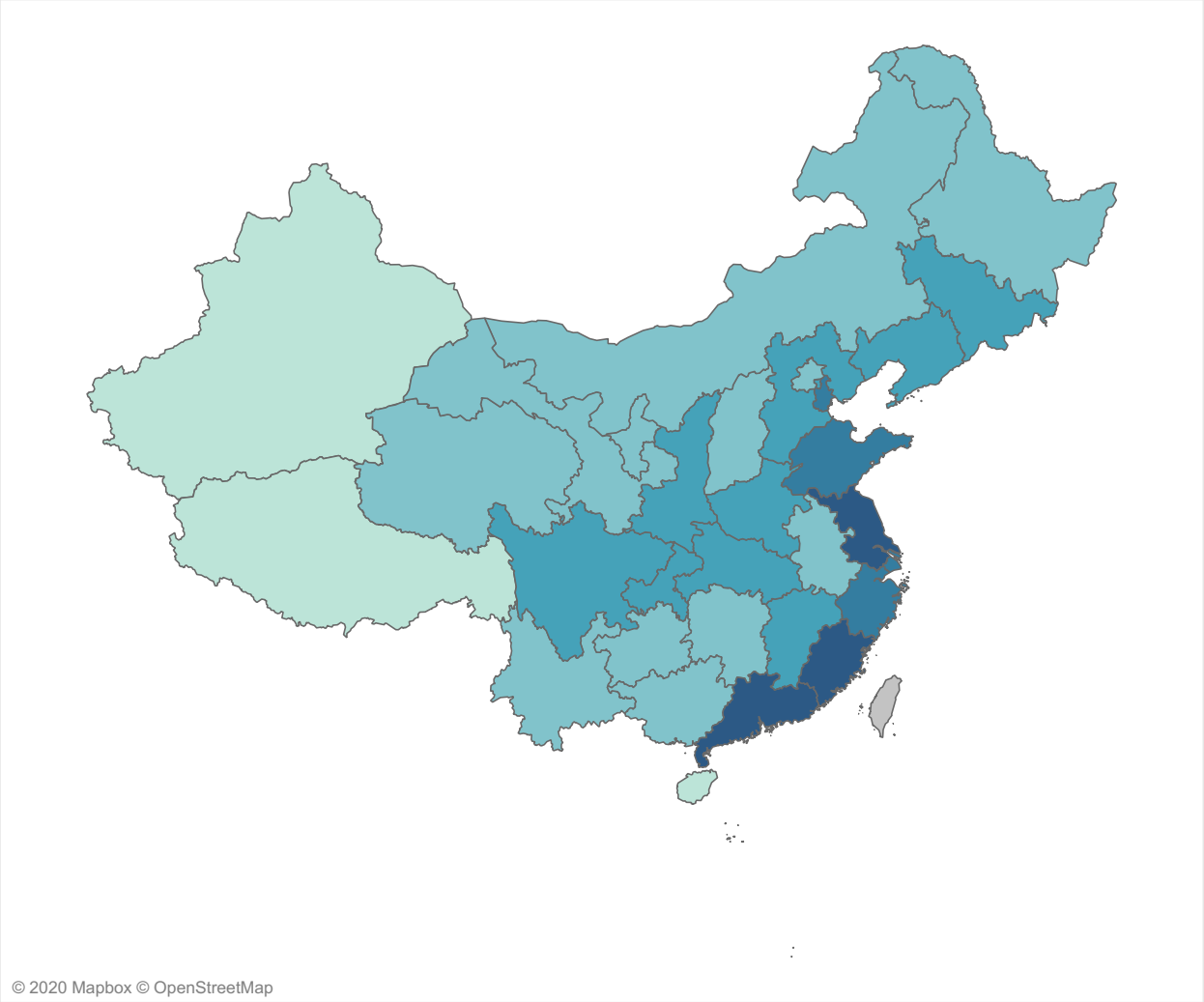
(Source: National Bureau of Statistics of China)

Appendix 3: Industrial SOE assets share of provincial industrial assets (2001-2011)



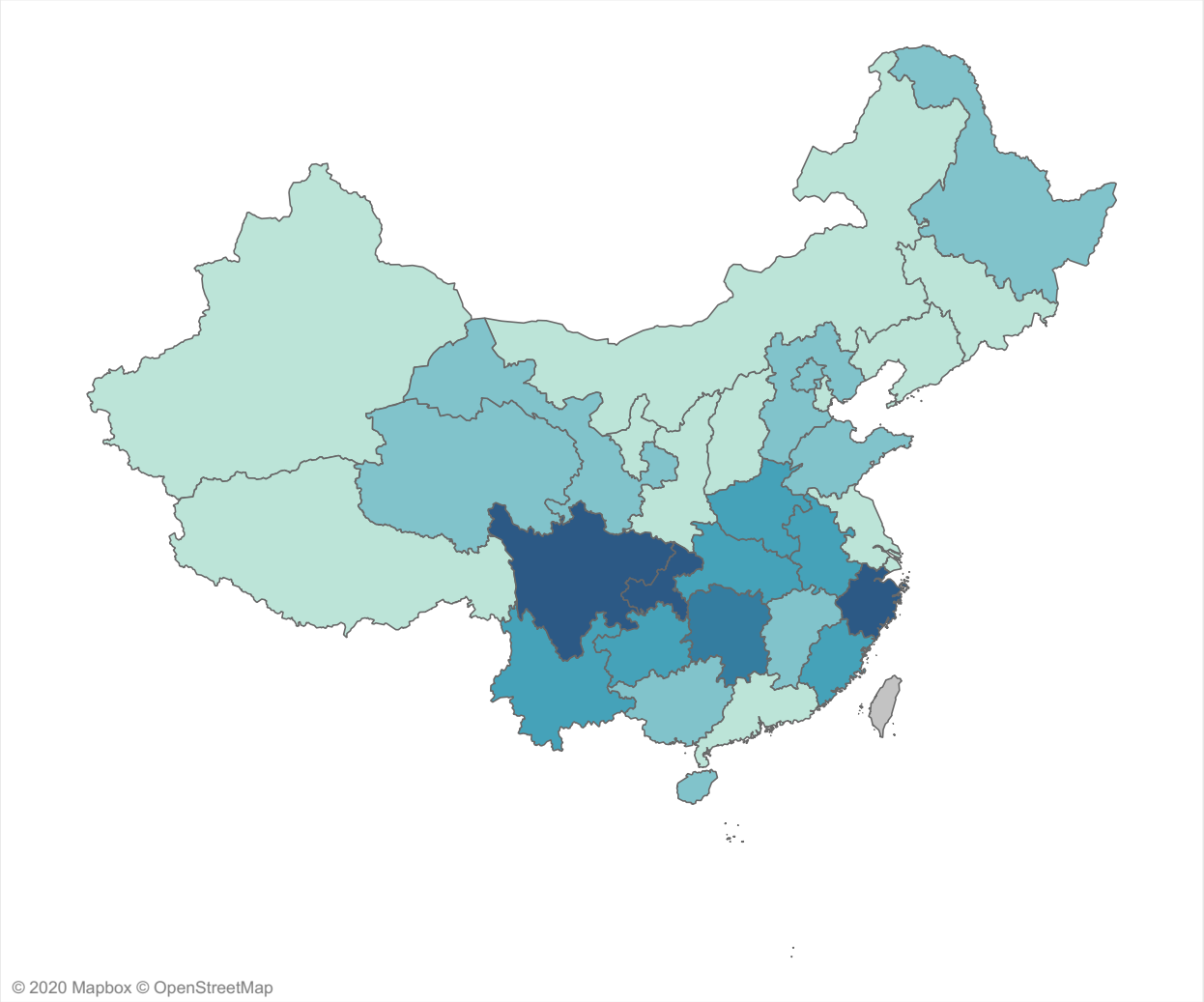
(Source: National Bureau of Statistics of China)

Appendix 4: Manufacturing industry employment share of urban employment



(Source: National Bureau of Statistics of China)

Appendix 4: Construction industry employment share of urban employment



(Source: National Bureau of Statistics of China)