SECURE PRIVATE PROPERTY RIGHTS AND ECONOMIC GROWTH: EMPIRICAL EVIDENCE FROM A NATURAL EXPERIMENT IN CHINA*

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Abstract

The right to private property was first written into the Constitution of the People's Republic of China in March 2004. This paper uses a difference-in-differences approach to determine whether secure private property rights caused by this constitutional amendment would promote economic growth. Employing the Chinese Industrial Enterprises Database (2000~2007) to implement the analysis, we show that: (1) secure private property rights do promote economic growth; (2) the amendment has a larger impact on a larger-size enterprise; and (3) the amendment has a larger impact on areas whose level of private property rights protection before the amendment is lower.

Key words: Private Property Rights; Economic Growth
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I. Introduction

One of the oldest themes in economics is that secure private property rights would foster economic growth. The view dates back at least to the famous French philosopher, Montesquieu ([1748], 1989), who used the theme to explain the sharp contrast between the booming commercial economies of republican Holland and constitutional England and what he saw as the stagnant economy of absolutist eighteenth-century France. Montesquieu wrote in his classic book *The Spirit of the Laws* as follows: "Great enterprises in commerce are not found in monarchical, but republican governments…. [A]n opinion of greater certainty as to the possession of property in these [republican] states makes [merchants] undertake everything…. [T]hinking themselves sure of what they have already acquired, they boldly expose it in order to acquire more…. A general rule: A nation in slavery labors more to preserve than to acquire; a free nation, more to acquire than to preserve."

One of the toughest questions faced by economists is why there are large differences in income per capita across countries. Although there is still little consensus on the answer to this question, differences in private property rights have received considerable attention in recent years. Not surprisingly, the theme that secure private property rights would foster economic growth has been reformulated in recent years (e.g., North and Thomas (1973), Brennan and Buchanan (1980), Jones (1981), North (1981)).

Anecdotally, to some extent it is obvious that secure private property rights matter. For example, see the sharp contrast between North Korea and South Korea, where North Korea stagnated under state ownership and central planning, while South Korea prospered with private property rights and a market economy. However, the anecdotal evidence of the divergent paths of North Korea and South Korea is not sufficient to establish the importance of secure private

property rights as the fundamental cause for the cross-country differences in economic prosperity because this is only one extreme case, the difference between a communist economy and a market economy. In addition, what we need is reliable estimates of the effect of private property rights on economic performance, which cannot be met by this extreme case.

Empirically, the theme that secure private property rights would foster economic growth receives some support from cross-country studies between measures of private property rights and economic development (e.g., Scully (1988), Barro (1991), De Long and Shleifer (1993), Torstensson (1994), Knack and Keefer (1995), Mauro (1995), Clague et al. (1999), Hall and Jones (1999), Rodrik (1999), Acemoglu et al. (2001), Acemoglu et al. (2002), Acemoglu et al. (2003), Acemoglu and Johnson (2005), and Acemoglu et al. (2005)), between measures of private property rights and investment (e.g., Besley (1995), Svensson (1998), and Johnson et al. (2002)), between measures of private property rights and financial market development (e.g., La Porta et al. (1997), Demirüç-Kunt and Maksimovic (1998), La Porta et al. (1998), La Porta et al. (2000), and Beck et al. (2003)), and between measures of private property rights and barriers to entry (e.g., Djankov et al. (2002)).

The papers in the empirical literature on the effect of secure private property rights on economic development have two salient features. First, they are mostly cross-country studies. One potential problem with cross-country analysis is that it is very difficult, if not impossible, to fully control other characteristics that are different across countries but might have significant impact on economic development. Second, in order to deal with the potential simultaneity problem between private property rights and economic development,[1] they generally use the instrumental variable (IV) approach. For example, ethnolinguistic fragmentation, distance from

[1] The potential simultaneity problem between private property rights and economic development arises because economic development might have feedbacks on private property rights, or because both private property rights and economic development might be determined by another common factor.

equator, and mortality rate are employed as instruments by Mauro (1995), Hall and Jones (1999), and Acemoglu et al. (2001) respectively. One criticism of the IV approach is that whether a variable is a valid IV or not can only be argued, but can never be proved, which implies that the credibility of their results might be potentially questionable due to the potential invalidity of their chosen IV.

The right to private property was first written into the Constitution of the People's Republic of China in 2004. For the first time in her history since 1949, individuals' private property rights would be protected to the same level as that afforded to state and collective property rights. Therefore, the 2004 amendment to the Constitution has huge impact on private enterprises, but basically no impact on state- and collective-owned enterprises. In this paper, we take the landmark amendment to the Constitution of the People's Republic of China adopted on March 14, 2004 as a natural experiment and use the difference-in-differences methodology to check whether secure private property rights would promote economic growth. We employ the Chinese Industrial Enterprises Database (2000~2007) produced by the National Bureau of Statistics of China to implement the analysis. Our treatment group is made up of private enterprises affected by the 2004 amendment to the Constitution, while our control group is made up of state- and collective-owned enterprises unaffected by the 2004 amendment to the Constitution. We first show that the trends of the growth rate (either the growth rate of total assets or the growth rate of total fixed assets) of the treatment and control groups before the 2004 amendment are basically parallel to each other, which implies that the identifying assumption of our identification strategy is satisfied and thus our difference-in-differences analysis has solid foundation. Then we conduct the difference-in-differences regressions. First of all, the results of our difference-in-differences analysis show that secure private property rights do promote

economic growth. The results of our difference-in-differences analysis also show that: (1) ceteris paribus, the 2004 amendment has a larger impact on a larger-size enterprise; and (2) the 2004 amendment has a larger impact on areas whose level of private property rights protection before the 2004 amendment is lower.

There are at least three points that distinguish our work from the empirical literature on the effect of secure private property rights on economic development. First, unlike previous studies that employ cross-country analysis, our work is a firm-level analysis, which implies that it might be more likely for us to have a better list of control variables and reveal more information on the effect of secure private property rights on economic development. Second, our study constructs a natural experiment and employs the difference-in-differences methodology, not the IV approach employed in previous studies. Therefore, we do not need to bear the burden of finding an IV and then defending the validity of the IV. In other words, our conclusion might be more credible. Finally, secure private property rights are part of "good institutions" packages in most of the previous studies. In contrast, our work identifies the effect of secure private property rights on economic growth. Using the terminology of Acemoglu and Johnson (2005), we are essentially "unbundling institutions".

The remainder of the paper is organized as follows. Section II describes the 2004 amendment to the Constitution of the People's Republic of China. Section III presents our identification strategy. Section IV presents the regression framework and the specification of our econometric model. Section V describes the data in detail, and Section VI reports the results of our analysis. Finally, Section VII briefly concludes the paper.

II. The Constitution of the People's Republic of China

The Constitution of the People's Republic of China is the highest law within the People's Republic of China. The current version of the Constitution was adopted at the Fifth Session of the Fifth National People's Congress and promulgated for implementation by the Announcement of the National People's Congress on December 4, 1982.[2]

There have been four major amendments to the 1982 Constitution made in 1988, 1993, 1999, and 2004 respectively. The 2004 amendment to the Constitution highlights the protection of private property rights. It states that "Citizens' lawful private property is inviolable" and "The State, in accordance with law, protects the rights of citizens to private property and to its inheritance."

The 2004 amendment to the Constitution is widely regarded as an important milestone in the history of the People's Republic of China. It means that for the first time in the history of the People's Republic of China since 1949, individuals' private property rights would be protected to the same level as that afforded to state and collective property rights. Therefore, the 2004 amendment to the Constitution has huge impact on private enterprises, but basically no impact on state- and collective-owned enterprises. Not surprisingly, it is greatly hailed by private entrepreneurs. For example, according to a news report by the Xinhua Net (http://news.xinhuanet.com), Linkai Li, a deputy to the National People's Congress and the general manager of Rongtai Industrial Corporation Limited that is a private company based in South China's Guangdong Province, said in response to the 2004 amendment that "I am encouraged and excited…. Such stipulations will eliminate entrepreneurs' hidden worries about their assets, and boost our confidence in long-term investment."

[2] Three previous constitutions —— those of 1954, 1975, and 1978 —— were superseded in turn.

III. Identification Strategy

As described in the previous section, the landmark 2004 amendment to the Constitution of the People's Republic of China has huge impact on private enterprises, but basically no impact on state- and collective-owned enterprises. Therefore, the 2004 amendment to the Constitution presents a great opportunity for us to construct a natural experiment and use the difference-in-differences methodology to study the impact of secure private property rights on economic growth. Our treatment group is made up of private enterprises affected by the 2004 amendment to the Constitution, while our control group is made up of state- and collective-owned enterprises unaffected by the 2004 amendment to the Constitution.

In order to identify the impact of secure private property rights brought about by the 2004 amendment to the Constitution on economic growth, a naïve identification strategy is to compare the growth rate of the treatment group before and after the 2004 amendment to the Constitution. However, since there may be underlying trends in the growth rate, we use the control group to isolate the impact of the 2004 amendment to the Constitution on private enterprises. In other words, our identification strategy is to compare the change in the growth rate of the treatment group and the change in the growth rate of the control group before and after the 2004 amendment to the Constitution as a means of deducing the impact of secure private property rights brought about by the 2004 amendment to the Constitution on private enterprises. This is essentially the difference-in-differences methodology.[3] It controls for the underlying trends in

[3] See Angrist and Krueger (1994) for an excellent reference for the difference-in-differences methodology associated with the natural experiment approach, and see Card and Krueger (1994) for a nice application of the methodology.

the growth rate of the treatment group through that of the control group over the period. It is clear to see that the identifying assumption that we make is that there is little difference between the underlying trends in the growth rate of the treatment and control groups. We will show that the identifying assumption that we make is satisfied and thus our difference-in-differences analysis has solid foundation.

Conceptually, one can see our identification strategy in Table 1, in which the average growth rate by each group before and after the 2004 amendment to the Constitution are presented. The change in the growth rate of the treatment group before and after the 2004 amendment to the Constitution is given by $\left(GrowthRate_{ta} - GrowthRate_{tb}\right)$, where "$t$" means "the **t**reatment group", "a" means "**a**fter the 2004 amendment to the Constitution", and "b" means "**b**efore the 2004 amendment to the Constitution". Part of this change is due to the impact of secure private property rights brought about by the 2004 amendment to the Constitution on private enterprises, and part is due to the underlying trends in the growth rate of the treatment group (i.e., private enterprises). The identifying assumption that we make is that the underlying trends in the growth rate of the treatment group will be reflected in the change in the growth rate of the control group, given by $\left(GrowthRate_{ca} - GrowthRate_{cb}\right)$, where "$c$" means "the **c**ontrol group", "a" means "**a**fter the 2004 amendment to the Constitution", and "b" means "**b**efore the 2004 amendment to the Constitution". The test that secure private property rights would promote economic growth is a test that $\left(\left(GrowthRate_{ta} - GrowthRate_{tb}\right) - \left(GrowthRate_{ca} - GrowthRate_{cb}\right)\right)$ is positive. The identifying assumption that we make essentially says that $\left(\left(GrowthRate_{ta} - GrowthRate_{tb}\right) - \left(GrowthRate_{ca} - GrowthRate_{cb}\right)\right)$ would be equal to zero in the

absence of the 2004 amendment to the Constitution. We will show that the identifying assumption of our identification strategy is satisfied shortly after.

In summary, according to our identification strategy, if the identifying assumption of our identification strategy were satisfied, and if the difference between the change in the growth rate of the treatment group and the change in the growth rate of the control group before and after the 2004 amendment, namely $\left(\left(GrowthRate_{ta} - GrowthRate_{tb}\right) - \left(GrowthRate_{ca} - GrowthRate_{cb}\right)\right)$, were positive and statistically significant, it implies that secure private property rights do promote economic growth.

IV. Regression Framework and Model Specification

As discussed in the last section, the impact of secure private property rights brought about by the 2004 amendment to the Constitution on private enterprises is given by:

$$Effect = \left(GrowthRate_{ta} - GrowthRate_{tb}\right) - \left(GrowthRate_{ca} - GrowthRate_{cb}\right). \quad (1)$$

Equation (1) can be rewritten as Equation (2):

$$\begin{aligned} GrowthRate_{ta} = {} & GrowthRate_{cb} + (GrowthRate_{tb} - GrowthRate_{cb}) \\ & + (GrowthRate_{ca} - GrowthRate_{cb}) + Effect \end{aligned}. \quad (2)$$

Econometrically, in order to examine the impact of secure private property rights brought about by the 2004 amendment to the Constitution on private enterprises, one could estimate the following OLS equation:

$$\begin{aligned} GrowthRate = {} & \alpha + \beta Z + \gamma_0 treatment + \gamma_1 postamendment \\ & + \gamma_2 \left(treatment \times postamendment\right) + \varepsilon \end{aligned}, \quad (3)$$

where ε is an error term, *treatment* is a dummy variable indicating whether an enterprise is included in the treatment group or in the control group, and is equal to one if it is included in the treatment group and is equal to zero if it is included in the control group, *postamendment* is a dummy variable indicating whether an observation is made after the 2004 amendment or not, and is equal to one if it is made after the 2004 amendment and is equal to zero if it is made before the 2004 amendment, the interaction term $(treatment \times postamendment)$ is the product of *treatment* and *postamendment*, and Z is a vector of control variables which include: (1) a categorical variable that indicates the area (the counterpart in the U.S. is state) where an enterprise is registered and is denoted as $Location\_ID$; and (2) a categorical variable that indicates the two-digit industry category that an enterprise belongs to and is denoted as $Industry\_ID$; (3) a categorical variable that indicates the scale of an enterprise and is denoted as $EnterpriseScale$. These three categorical control variables control for observable differences in the characteristics of enterprises that may affect the level of growth rate. Controlling for these observable differences reduces the residual variance of the regression and produces more efficient estimates.

The variable *GrowthRate* denotes the growth rate of an enterprise. In order to check the robustness of our analysis, we use two alternative measures of an enterprise's growth rate: (1) the growth rate of an enterprise's total assets (denoted as $GrowthRate\_TotalAssets$); and (2) the growth rate of an enterprise's total fixed assets (denoted as $GrowthRate\_TotalFixedAssets$). In other words, we have two alternative dependent variables: (1) $GrowthRate\_TotalAssets$; and (2) $GrowthRate\_TotalFixedAssets$.

By inspecting Equation (3), it is easy for one to reach three conclusions. First, the coefficient of the dummy variable *treatment*, namely γ_0, is the treatment group specific effect

that accounts for the average permanent differences between the treatment and control groups. Second, the coefficient of the dummy variable *postamendment*, namely γ_1, captures the time trend common to the treatment and control groups. Third, the coefficient of the interaction term $(treatment \times postamendment)$, namely γ_2, gives us the difference-in-differences estimate of the treatment effect, namely, the difference between the change in *GrowthRate* of the treatment group and the change in *GrowthRate* of the control group before and after the 2004 amendment to the Constitution.

We expect that the impact might be different relative to enterprise scale. Hence, we estimate Equation (4) instead of Equation (3) to study the impact of secure private property rights brought about by the 2004 amendment on private enterprises by enterprise scale:

$$GrowthRate = \alpha + \beta Z + \gamma_0 treatment + \gamma_1 postamendment + \gamma_2 \left(treatment \times postamendment\right)\left(EnterpriseScale\right) + \varepsilon, \quad (4)$$

where the coefficient of the interaction term $(treatment \times postamendment)\left(EnterpriseScale\right)$, namely γ_2, gives us the difference-in-differences estimate of the treatment effect by enterprise scale. The categorical variable *EnterpriseScale* has three categories: (1) Category "Large-Size"; (2) Category "Medium-Size"; and (3) Category "Small-Size". The three categories correspond to large-size enterprises, medium-size enterprises, and small-size enterprises respectively. Ceteris paribus, we expect the 2004 amendment to the Constitution to have a larger impact on a larger-size enterprise because a larger-size enterprise might have more in danger to potential expropriation before the 2004 amendment to the Constitution. In other words, we expect that the estimated coefficient of the interaction term $(treatment \times postamendment)$ for Category "Large-Size" is greater than that for Category "Medium-Size", and the estimated coefficient of the

interaction term $(treatment \times postamendment)$ for Category "Medium-Size" is greater than that for Category "Small-Size".

Although China is a unitary state, the level of private property rights protection varies from one area to another area (Cull and Xu, 2005). Intuitively, we expect the 2004 amendment to have a larger impact on areas whose level of private property rights protection before the 2004 amendment is lower. In order to test this idea, we construct a variable *InformalLevy* to measure the level of private property rights protection in each area before the 2004 amendment. The definition and construction of *InformalLevy* are described in the next section. The level of private property rights protection before the 2004 amendment is inversely proportional to *InformalLevy*. As the mean and median of *InformalLevy* are 40.78% and 41.03% respectively, we construct a categorical variable *InformalLevy_Category* that has the following two categories: (1) Category "$InformalLevy <= 40\%$"; and (2) Category "$InformalLevy > 40\%$". Similarly, we estimate Equation (5) instead of Equation (3) to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution on private enterprises by *InformalLevy_Category*:

$$GrowthRate = \alpha + \beta Z + \gamma_0 treatment + \gamma_1 postamendment + \gamma_2 (treatment \times postamendment)(InformalLevy\_Category) + \varepsilon, \quad (5)$$

where the coefficient of the interaction term $(treatment \times postamendment)(InformalLevy\_Category)$, namely γ_2, gives us the difference-in-differences estimate of the treatment effect by *InformalLevy_Category*. We expect that the estimated coefficient of the interaction term $(treatment \times postamendment)$ for Category "$InformalLevy > 40\%$" is greater than that for Category "$InformalLevy <= 40\%$".

V. Data Description

We employ the Chinese Industrial Enterprises Database (2000~2007) produced by the National Bureau of Statistics of China to implement the analysis. The database embodies information of enterprises whose annual sales revenue is above 5 million RMB. The coverage of the Chinese Industrial Enterprises Database is identical with that of the industrial sector of the <<China Statistical Yearbook>> and with that of the <<China Industry Economy Statistical Yearbook>>. The difference is that the Chinese Industrial Enterprises Database is firm-level data, while both the industrial sector of the <<China Statistical Yearbook>> and the <<China Industry Economy Statistical Yearbook>> are aggregated data along different dimensions.

By 2007, the Chinese Industrial Enterprises Database has included more than 330 thousand industrial enterprises, which accounts for about 95% of the total industrial output value of China. The database contains about 40 general industry categories at the two-digit industry code level, and covers all the 31 areas in the mainland of China, namely, 22 provinces, 5 autonomous regions (namely, Guangxi, Neimeng, Ningxia, Xinjiang, and Tibet), and 4 cities (namely, Beijing, Tianjin, Shanghai, and Chongqing) that report directly to the central government. The Chinese Industrial Enterprises Database is the most complete and most authoritative firm-level database in China.

Each enterprise in the Chinese Industrial Enterprises Database is identified by a unique enterprise ID. The sample of the enterprises in the database changes year by year, with some enterprises entering the database and some others exiting the database. However, most of the enterprises are continuously kept in the database. In other words, the Chinese Industrial Enterprises Database is roughly a nice panel dataset.

The Chinese Industrial Enterprises Database provides two types of information for each enterprise. The first type of information is basically qualitative, including the ID of each enterprise, the location where each enterprise is registered, the type of registration of each enterprise, the industry category of each enterprise, the scale of each enterprise, and etc., and is coded according to predefined mapping tables. The second type of information is basically quantitative, including for example, almost all the variables on the balance sheet of each enterprise such as sales revenue, sales cost, current assets, total fixed assets, total assets, current liabilities, long term debt, total debt, total profit, total wages, and etc.

Table 2 gives the overview of the sample size information of the Chinese Industrial Enterprises Database. For example, the number of enterprises included in the database for year 2006 is 301,961, and the number of enterprises included in the database for year 2007 is 336,768. The number of enterprises included in the database for both year 2006 and year 2007 is 273,191.

Because the amendment to the Constitution of the People's Republic of China was adopted in 2004, we use the data of three groups of years, namely, Group (YR03, YR04, YR05), Group (YR03, YR04, YR06), and Group (YR03, YR04, YR07), to implement the difference-in-differences analysis. Table 3 gives the overview of the sample size information for the three groups. For Group (YR03, YR04, YR05), we use the YR 2003 data and the YR 2004 data to construct the pre-amendment growth rate for each enterprise, and use the YR 2004 data and the YR 2005 data to construct the post-amendment growth rate for each enterprise. Similarly, for Group (YR03, YR04, YR06), we use the YR 2003 data and the YR 2004 data to construct the pre-amendment growth rate for each enterprise, and use the YR 2004 data and the YR 2006 data to construct the post-amendment growth rate for each enterprise. Finally, for Group (YR03, YR04, YR07), we use the YR 2003 data and the YR 2004 data to construct the pre-amendment

growth rate for each enterprise, and use the YR 2004 data and then YR 2007 data to construct the post-amendment growth rate for each enterprise.

Tables 4, 5, and 6 are the frequency tables for three categorical variables by year respectively: (1) *Location_ID*; (2) *Industry_ID*; and (3) *EnterpriseScale*.

In order to fully understand the concept of *EnterpriseScale*, Table 7 gives the summary statistics of total employees and total assets by *EnterpriseScale* in 2003. By Table 7, a larger-size enterprise has on average more total employees and more total assets.

The type of registration (denoted as *RegistrationType*) of each enterprise tells us the type of each enterprise. Table 8 is the mapping table for the type of registration. Table 9 is the frequency table for the type of registration by year.

According to Table 8, we impute the value of *treatment* as follows: (1) if *RegistrationType* of an enterprise is in ('110', '120', '130', '141', '142', '143', '151'), then we include the enterprise in the control group (namely, state- or collective-owned enterprises) and set the value of *treatment* for the enterprise to be zero; (2) if Re*gistrationType* of an enterprise is in ('171', '172', '173', '174'), then we include the enterprise in the treatment group (namely, private enterprises) and set the value of *treatment* for the enterprise to be one; and (3) otherwise, we include the enterprise neither in the control group nor in the treatment group and set the value of *treatment* for the enterprise to be missing.

As discussed in the previous section, the variable *InformalLevy* measures the level of private property rights protection before the 2004 amendment by area (i.e., by *Location_ID*). We use a survey of China's private enterprises to construct *InformalLevy*. The survey is conducted in year 2000 jointly by the United Front Work Department of the Central Committee of the Communist Party of China, the All China Industry and Commerce Federation, and the

China Society of Private Economy at the Chinese Academy of Social Sciences. The survey employs a multi-stage stratified random sampling method to ensure a balanced representation across all areas in China. First, decide the total number of private enterprises to be surveyed. Second, six cities/counties are selected from each of the 31 areas in the mainland of China. The six cities/counties include the capital city of the area, one district-level city, one county-level city, and three counties. Third, the number of private enterprises to be surveyed in each area is equal to the sample size of the survey multiplied by the area's number of private enterprises as a share of the total number of private enterprises in the nation. The same method is applied to calculate the number of private enterprises to be surveyed in every city/county. Finally, private enterprises are sampled randomly in each sub-sample. The sample size is 3,073, about 0.2 percent of the total number of private enterprises in China at the end of 1999. The survey collects information about both entrepreneurs themselves and their enterprises. All the questions are answered by the entrepreneurs of the private enterprises.

Without secure private property rights, private properties would be subject to expropriation by government officials. In China, local government officials may impose informal levies on private enterprises to supplement their fiscal revenues.[4] Following Johnson et al. (2002), Cull and Xu (2005), and Bai et al. (2006), we measure the level of private property rights protection as the risks of expropriation in the form of informal levies by government agencies and related parties. In the survey, there is one relevant question asking whether a private enterprise has paid any informal levies or not. There are 3,070 valid responses out of the 3,073 private enterprises in the sample, with 1,195 private enterprises answering "yes" and 1,875 private enterprises answering "no". The variable *InformalLevy* for one area is defined as the

[4] The Chinese for informal levies is called *Za Fei*, referring to, for example, kinds of fees charged by the government other than taxes.

number of private enterprises answering "yes" in that area as a percentage of the sample size in that area. By the definition of *InformalLevy*, the level of private property rights protection in one area is inversely proportional to its *InformalLevy*. Table 10 gives the value of *InformalLevy* by area. The mean and median of *InformalLevy* are 40.78% and 41.03% respectively.

VI. Results of Analysis

First, recall that we need to check whether the identifying assumption of our identification strategy is satisfied or not. Second, recall that we have two alternative dependent variables, namely, *GrowthRate_TotalAssets* and *GrowthRate_TotalFixedAssets*. Third, recall that we need to estimate Equations (4) and (5) to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to *EnterpriseScale* and *InformalLevy_Category* respectively. Finally, recall that as the amendment to the Constitution was adopted in 2004, we implement the difference-in-differences analysis for three groups of years, namely, Group (YR03, YR04, YR05), Group (YR03, YR04, YR06), and Group (YR03, YR04, YR07). Therefore, our analysis is composed of three parts:

- **Part (1)**: Check whether the identifying assumption of our identification strategy is satisfied or not, namely, check whether the trends of the mean of *GrowthRate_TotalAssets* (as well as the mean of *GrowthRate_TotalFixedAssets*) of the treatment and control groups before the 2004 amendment to the Constitution are parallel to each other or not.
- **Part (2)**: Use both *GrowthRate_TotalAssets* and *GrowthRate_TotalFixedAssets* as the dependent variable to estimate Equation (4) for the three groups to study the

impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to *EnterpriseScale*. Six difference-in-differences regressions are conducted in this part.

- **Part (3)**: Use both *GrowthRate_TotalAssets* and *GrowthRate_TotalFixedAssets* as the dependent variable to estimate Equation (5) for the three groups to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to *InformalLevy_Category*. Again, six difference-in-differences regressions are conducted in this part.

Among the three parts, Part (1) is the precondition to implement the difference-in-differences analysis conducted in Parts (2)~(3). The results of the three parts of our analysis are reported as follows one by one.

Part (1): Check whether the identifying assumption of our identification strategy is satisfied or not

As discussed in Section "Identification Strategy", the identifying assumption that we make is that there is little difference between the underlying trends in the growth rate of the treatment and control groups. In order to check whether the identifying assumption is satisfied or not, we compare the trends of the mean of *GrowthRate_TotalAssets* (as well as the mean of *GrowthRate_TotalFixedAssets*) of the treatment and control groups before the 2004 amendment to the Constitution.

Figure 1 plots the trends of the mean of *GrowthRate_TotalAssets* of the treatment and control groups from 2001~2004. By Figure 1, it is easy for one to see that the trends of the mean

of *GrowthRate_TotalAssets* of the treatment and control groups before the 2004 amendment to the Constitution are basically parallel to each other.

Similarly, Figure 2 plots the trends of the mean of *GrowthRate_TotalFixedAssets* of the treatment and control groups from 2001~2004. By Figure 2, one could also reach the conclusion that the trends of the mean of *GrowthRate_TotalFixedAssets* of the treatment and control groups before the 2004 amendment to the Constitution are basically parallel to each other.

In summary, the results of Part (1) analysis show that the trends of the mean of *GrowthRate_TotalAssets* (as well as the mean of *GrowthRate_TotalFixedAssets*) of the treatment and control groups before the 2004 amendment to the Constitution are basically parallel to each other. Therefore, one could reach the conclusion that there is little difference between the underlying trends in the growth rate of the treatment and control groups so that the identifying assumption of our identification strategy is satisfied. Hence, the difference-in-differences analysis conducted in Parts (2)~(3) has solid foundation.

Part (2): Use both *GrowthRate_TotalAssets* and *GrowthRate_TotalFixedAssets* as the dependent variable to estimate Equation (4) for the three groups to study the impact of secure property rights brought about by the 2004 amendment to the Constitution relative to *EnterpriseScale*

In Part (2), we first use *GrowthRate_TotalAssets* as the dependent variable to estimate Equation (4) for the three groups to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to *EnterpriseScale*. The results of the three difference-in-differences regressions are reported in Table 11.

Then, we use $GrowthRate\_TotalFixedAssets$ as the dependent variable to estimate Equation (4) for the three groups to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to $EnterpriseScale$. The results of the three difference-in-differences regressions are reported in Table 12.

By Tables 11 and 12, one could reach two conclusions. First, except that the two estimated coefficients of the interaction term $(treatment \times postamendment)$ for Category "Small-Size" in the two regressions for Group (YR03, YR04, YR05) are statistically insignificant, all the other estimated coefficients of the interaction term $(treatment \times postamendment)$ for all the three categories in all the six regressions are positive and statistically significant, which implies that secure private property rights do promote economic growth.

Second, for each of the six regressions, the estimated coefficient of the interaction term $(treatment \times postamendment)$ for Category "Large-Size" is greater than that for Category "Medium-Size", and the estimated coefficient of the interaction term $(treatment \times postamendment)$ for Category "Medium-Size" is greater than that for Category "Small-Size". For example, according to Table 11, for the Group (YR03, YR04, YR05) regression that uses $GrowthRate\_TotalAssets$ as the dependent variable, the estimated coefficients of the interaction term $(treatment \times postamendment)$ for Category "Large-Size", Category "Medium-Size", and Category "Small-Size" are 0.136 (statistically significant at the 1% level), 0.095 (statistically significant at the 1% level), and statistically insignificant respectively. Hence, our analysis shows that ceteris paribus, the 2004 amendment to the Constitution has a larger impact on a larger-size enterprise. This result is as expected and intuitively makes sense because a larger-size enterprise might have more in danger to potential expropriation before the 2004 amendment to the Constitution.

Part (3): Use both *GrowthRate_TotalAssets* and *GrowthRate_TotalFixedAssets* as the dependent variable to estimate Equation (5) for the three groups to study the impact of secure property rights brought about by the 2004 amendment to the Constitution relative to *InformalLevy_Category*

In Part (3), we first use $GrowthRate\_TotalAssets$ as the dependent variable to estimate Equation (5) for the three groups to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to $InformalLevy\_Category$. The results of the three difference-in-differences regressions are reported in Table 13.

Then, we use $GrowthRate\_TotalFixedAssets$ as the dependent variable to estimate Equation (5) for the three groups to study the impact of secure private property rights brought about by the 2004 amendment to the Constitution relative to $InformalLevy\_Category$. The results of the three difference-in-differences regressions are reported in Table 14.

By Tables 13 and 14, one could also reach two conclusions. First, just like Part (2), the results of the six difference-in-differences regressions conducted in this part in general show that secure private property rights do promote economic growth.

Second, for each of the six regressions, the estimated coefficient of the interaction term $(treatment \times postamendment)$ for Category "$InformalLevy > 40\%$" is greater than that for Category "$InformalLevy <= 40\%$". Recall that the level of private property rights protection in one area is inversely proportional to $InformalLevy$ in that area. The results of the six difference-in-differences regressions conducted in this part therefore show that the 2004 amendment has a larger impact on areas whose level of private property rights protection before the 2004 amendment is lower, which is as expected and intuitively makes sense.

In summary, the results of Part (1) analysis show that the identifying assumption of our identification strategy is satisfied and thus the difference-in-differences analysis conducted in Parts (2)~(3) has solid foundation. The difference-in-differences regressions conducted in Parts (2)~(3) show that: (1) secure private property rights do promote economic growth; (2) ceteris paribus, the 2004 amendment to the Constitution has a larger impact on a larger-size enterprise; and (3) the 2004 amendment has a larger impact on areas whose level of private property rights protection before the 2004 amendment is lower.

VII. Conclusion

The potential role of secure private property rights played in promoting economic growth has received considerable attention in recent years, and hence the theme that secure private property rights would foster economic growth has been reformulated in recent years.

On the empirical side, previous studies mostly employ cross-country analysis and instrumental variable (IV) approach to study the impact of secure private property rights on economic development. Both cross-country analysis and IV approach have their limitations that might cast doubt on the credibility of their conclusion.

In this paper, we take the landmark 2004 amendment to the Constitution of the People's Republic of China as a natural experiment and use the difference-in-differences methodology to check whether secure private property rights would promote economic growth. We employ the Chinese Industrial Enterprises Database (2000~2007) produced by the National Bureau of Statistics of China to implement the analysis. Our treatment group is made up of private enterprises affected by the 2004 amendment to the Constitution, while our control group is made

up of state- and collective-owned enterprises unaffected by the 2004 amendment to the Constitution. The results of our analysis show that secure private property rights do play a positive role in promoting economic growth.

APPENDIX

Figure 1. The Trends of the Growth Rate of Total Assets of the Treatment and Control Groups (2001~2004)

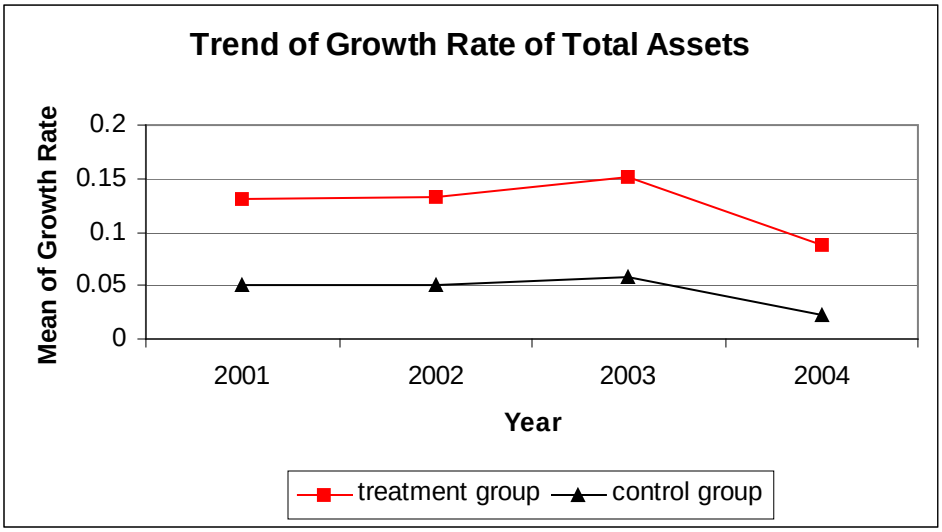

Figure 2. The Trends of the Growth Rate of Total Fixed Assets of the Treatment and Control Groups (2001~2004)

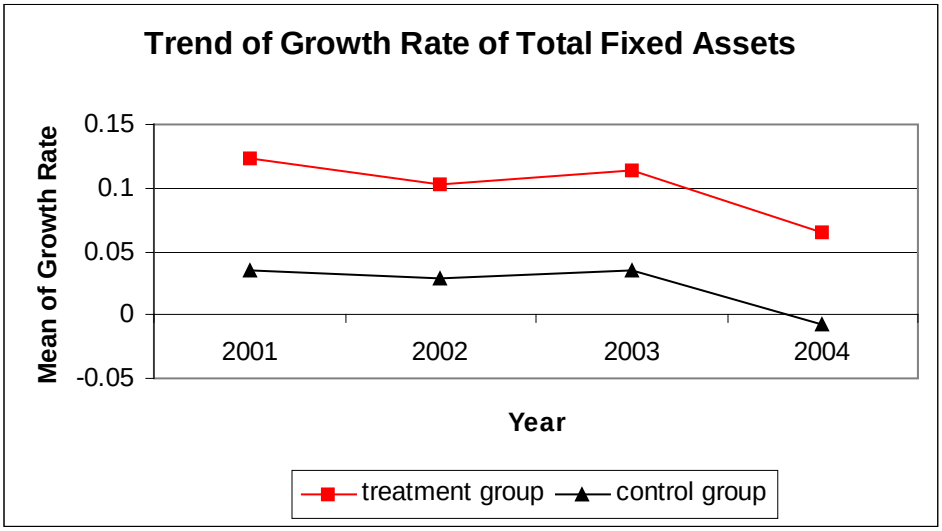

Table 1. Illustration of the Empirical Strategy

	Before The 2004 Amendment to the Constitution	After The 2004 Amendment to the Constitution
Treatment Group	$GrowthRate_{tb}$	$GrowthRate_{ta}$
Control Group	$GrowthRate_{cb}$	$GrowthRate_{ca}$

Table 2. Overview of the Chinese Industrial Enterprises Database (2000~2007)

Year	Sample Size	Size of the Intersection
2000	162,883	
		119,445
2001	169,031	
		143,018
2002	181,557	
		149,087
2003	196,222	
		144,539
2004	279,092	
		230,436
2005	271,835	
		244,980
2006	301,961	
		273,191
2007	336,768	

Table 3. Overview of the Three Groups of Years of Data (namely, Group (YR03, YR04, YR05), Group (YR03, YR04, YR06), and Group (YR03, YR04, YR07)) to Implement the Difference-in-Differences Analysis

Year	Sample Size	Size of the Intersection
2003	196,222	
2004	279,092	130,606
2005	271,835	
2003	196,222	
2004	279,092	120,134
2006	301,961	
2003	196,222	
2004	279,092	109,389
2007	336,768	
2003	196,222	
2004	279,092	
2005	271,835	107,640
2006	301,961	
2007	336,768	

Table 4. The Frequency Table by Year for *Location_ID*

Location_ID	Area	2000	2001	2002	2003	2004	2005	2006	2007
11	Beijing	2.81	2.51	2.51	2.05	2.47	2.32	2.12	1.9
12	Tianjin	3.33	2.94	2.94	2.72	2.32	2.26	2.09	1.89
13	Hebei	4.46	4.2	4.2	4.04	3.35	3.66	3.52	3.23
14	Shanxi	2.01	1.91	1.91	1.84	1.82	1.63	1.55	1.33
15	Neimeng	0.84	0.79	0.79	0.84	0.82	0.9	1.02	1
21	Liaoning	3.69	3.31	3.31	3.49	4.11	4.23	4.89	4.92
22	Jilin	1.67	1.42	1.42	1.16	1.24	1.02	1.08	1.18
23	Heilongjiang	1.64	1.43	1.43	1.31	1.2	1.06	0.98	0.94
31	Shanghai	5.26	5.54	5.54	5.66	5.65	5.45	4.77	4.48
32	Jiangsu	11.24	11.83	11.83	12.16	14.65	11.85	12.03	12.42
33	Zhejiang	8.95	12.06	12.06	13.01	14.82	14.82	15.13	15.32
34	Anhui	2.26	2.16	2.16	2.12	1.72	1.94	2.16	2.41
35	Fujian	3.69	4.11	4.11	4.69	4.28	4.56	4.56	4.51
36	Jiangxi	2.18	1.69	1.69	1.55	1.53	1.62	1.77	1.79
37	Shandong	7.17	7.42	7.42	8.24	8.57	10.13	10.58	10.73
41	Henan	6.1	5.33	5.33	4.63	4.21	4	3.94	4.01
42	Hubei	3.86	3.41	3.41	3.2	2.28	2.51	2.5	2.67
43	Hunan	2.95	3	3	3.04	2.73	2.95	2.98	3.03
44	Guangdong	12.09	12.46	12.46	12.48	12.45	12.93	12.42	12.55
45	Guangxi	1.94	1.6	1.6	1.46	1.34	1.36	1.34	1.31
46	Hainan	0.37	0.33	0.33	0.32	0.23	0.23	0.2	0.14
50	Chongqing	1.25	1.13	1.13	1.14	0.95	1.08	1.06	1.16
51	Sichuan	2.7	2.7	2.7	2.78	2.67	2.93	2.98	3.18
52	Guizhou	1.28	1.14	1.14	1.08	0.91	0.95	0.86	0.68
53	Yunnan	1.3	1.14	1.14	1.02	0.86	0.87	0.86	0.8
54	Tibet	0.22	0.19	0.19	0.17	0.07	0.07	0.07	0.03
61	Shaanxi	1.57	1.36	1.36	1.27	1.12	1.1	1.12	1
62	Gansu	1.75	1.76	1.76	1.47	0.72	0.64	0.57	0.55
63	Qinghai	0.27	0.22	0.22	0.2	0.17	0.15	0.14	0.14
64	Ningxia	0.25	0.21	0.21	0.21	0.24	0.25	0.25	0.22
65	Xinjiang	0.89	0.7	0.7	0.64	0.52	0.53	0.49	0.47
Sum		**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Sample Size		**162,883**	**169,031**	**181,557**	**196,222**	**279,092**	**271,835**	**301,961**	**336,768**

Table 5. The Frequency Table by Year for *Industry_ID*

Industry_ID	2000	2001	2002	2003	2004	2005	2006	2007
06	1.64	1.54	1.55	1.6	1.89	2.13	2.25	2.24
07	0.05	0.05	0.05	0.06	0.07	0.06	0.06	0.05
08	0.37	0.38	0.38	0.47	0.6	0.77	0.83	0.86
09	0.88	0.29	0.71	0.65	0.53	0.56	0.62	0.65
10	1.09	1.03	0.94	0.93	0.79	0.82	0.86	0.89
11	0.01	0.01	0.01	0.01	0	0.01	0.01	0.01
12	0.31	0.25	0.21					
13	6.55	6.14	5.74	5.7	5.17	5.36	5.42	5.39
14	2.88	2.7	2.54	2.36	2.03	2.04	2.01	1.97
15	2.09	1.96	1.81	1.63	1.27	1.29	1.3	1.31
16	0.21	0.19	0.16	0.13	0.08	0.07	0.06	0.04
17	6.73	7.14	7.3	7.57	8.72	8.3	8.39	8.29
18	4.34	4.75	4.99	4.95	4.33	4.36	4.33	4.39
19	1.94	2.09	2.17	2.3	2.3	2.29	2.27	2.21
20	1.57	1.66	1.67	1.78	1.82	1.99	2.11	2.33
21	0.92	0.96	0.97	1.04	1.09	1.13	1.19	1.22
22	2.87	2.97	2.91	2.84	2.7	2.74	2.61	2.49
23	2.27	2.18	2.1	2.08	1.87	1.78	1.67	1.51
24	1.15	1.2	1.28	1.28	1.21	1.24	1.2	1.21
25	0.61	0.61	0.63	0.67	0.73	0.73	0.72	0.64
26	7.02	6.97	6.96	7.03	6.78	6.89	6.86	6.82
27	2.03	2.06	2.03	2.07	1.71	1.83	1.78	1.71
28	0.51	0.52	0.5	0.48	0.55	0.48	0.46	0.46
29	1.09	1.05	1	1.03	1.15	1.12	1.11	1.1
30	3.82	4.07	4.22	4.27	4.42	4.43	4.47	4.57
31	8.93	8.7	8.43	8.28	7.24	7.4	7.26	7.21
32	1.84	1.88	1.84	2.1	2.58	2.45	2.32	2.13
33	1.56	1.18	1.62	1.72	1.91	1.9	1.94	1.99
34	5.14	5.49	5.53	4.97	5.09	5.08	5.16	5.35
35	5.73	5.93	5.93	6.39	7.43	7.35	7.59	7.95
36	3.93	3.78	3.61	3.63	3.96	3.77	3.85	3.98
37	4.21	4.12	4.11	4.22	4.28	4.16	4.17	4.18
39	0.08		0.06	5.3	5.82	5.65	5.6	5.74
40	4.82	5.13	5.17	2.98	3.3	3.26	3.22	3.33
41	2.74	2.82	2.93	1.28	1.41	1.37	1.35	1.34
42	1.14	1.19	1.18	2.17	1.85	1.89	1.91	1.91
43	2.3	2.48	2.52	0.05	0.14	0.16	0.18	0.19
44	2.96	2.88	2.72	2.55	2	2.03	1.9	1.65
45	0.18	0.19	0.18	0.18	0.18	0.18	0.17	0.18
46	1.48	1.42	1.33	1.23	0.98	0.92	0.82	0.52
Sum	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Sample Size	**162,883**	**169,031**	**181,557**	**196,222**	**279,092**	**271,835**	**301,961**	**336,768**

Table 6. The Frequency Table by Year for *EnterpriseScale*

EnterpriseScale	2000	2001	2002	2003	2004	2005	2006	2007
Large-Size	4.9	4.9	4.82	1.01	0	0.92	0.89	0.86
Medium-Size	8.44	8.37	8.03	11.03	0	10.03	10.02	9.98
Small-Size	86.66	86.73	87.15	87.96	0	89.05	89.09	89.16
missing	0	0	0	0	1	0	0	0
Sum	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
SampleSize	**162,883**	**169,031**	**181,557**	**196,222**	**279,092**	**271,835**	**301,961**	**336,768**

Table 7. The Distribution of Total Employees and Total Assets by Enterprise Scale in 2003

Summary Statistics of Total Employees by Enterprise Scale			
Category of EnterpriseScale	N	Mean	Median
"Large-Size"	1,984	6,586	3,598
"Medium-Size"	21,647	886	648
"Small-Size	172,591	146	98

Summary Statistics of Total Assets by Enterprise Scale			
Category of EnterpriseScale	N	Mean	Median
"Large-Size"	1,984	3,340,587	1,572,653
"Medium-Size"	21,647	271,883	134,954
"Small-Size	172,591	25,306	10,756

Table 8. The Mapping Table for the Type of Registration

Level_1_Code	Level_2_Code	Level_3_Code	Type of Enterprise
100			Domestic Enterprises
	110	110	State-Owned Enterprises
	120	120	Collective-Owned Enterprises
	130	130	Share Cooperative Enterprises
	140		Associated Enterprises
		141	State-State Associated Enterprises
		142	Collective-Collective Associated Enterprises
		143	State-Collective Associated Enterprises
		149	Other Associated Enterprises
	150		Limited Liability Company
		151	State-Owned Limited Liability Company
		159	Other Limited Liability Company
	160	160	Limited Liability Stock Company
	170		Private-Owned Enterprises
		171	Private-Owned Company (only one owner)
		172	Private-Owned Partnership Company
		173	Private-Owned Limited Liability Company
		174	Private-Owned Limited Liability Stock Company
	190	190	Other Enterprises
200			HongKong-Macau-Taiwan(HMT) Investment Enterprises
		210	HMT-Mainland Joint Venture
		220	Enterprise Jointly Managed by Mainland and HMT
		230	HMT-Owned Enterprise
		240	HMT-Owned Limited Liability Stock Company
300			Foreign Investment Enterprises
		310	Chinese-Foreign Joint Venture
		320	Enterprise Jointly Managed by China and Foreign Countries
		330	Foreign-Owned Enterprise
		340	Foreign-Owned Limited Liability Stock Company

Table 9. The Frequency Table by Year for *RegistrationType*

RegistrationType	2000	2001	2002	2003	2004	2005	2006	2007
110	26.05	19.95	16.22	11.84	9.14	6.19	4.82	2.99
120	23.23	18.02	15.13	11.46	6.5	5.86	4.7	3.87
130	6.66	6.38	5.61	4.73	2.95	2.75	2.09	1.75
141	0.26	0.22	0.18	0.15	0.1	0.08	0.06	0.05
142	0.45	0.37	0.3	0.25	0.14	0.12	0.11	0.09
143	0.59	0.49	0.4	0.28	0.15	0.13	0.1	0.08
149	0.25	0.22	0.2	0.18	0.12	0.11	0.09	0.08
151	0.75	0.77	0.74	0.68	0.52	0.48	0.44	0.39
159	7.36	10.28	11.64	12.88	14.3	14.96	15.15	15.44
160	3.12	3.32	3.3	3.22	2.58	2.65	2.39	2.31
171	6.55	8.2	9.45	10.96	9.52	10.35	11.25	11.74
172	1.33	1.64	1.97	2.31	2.17	2.36	2.42	2.39
173	5.06	10.4	14.43	19.67	29.44	30.93	33.85	36.33
174	0.64	1.01	1.23	1.52	1.69	1.91	2.07	2.12
190	0.23	0.19	0.19	0.22	0.14	0.39	0.3	0.34
210	5.1	5.08	4.86	4.64	3.84	3.64	3.38	3.24
220	1.24	1.29	1.19	1.03	0.67	0.62	0.54	0.5
230	3.68	4.29	4.6	5	5.58	5.76	5.64	5.64
240	0.1	0.12	0.12	0.12	0.11	0.11	0.1	0.1
310	4.36	4.4	4.43	4.49	4.65	4.65	4.39	4.3
320	0.62	0.55	0.54	0.56	0.62	0.61	0.5	0.46
330	2.29	2.72	3.15	3.72	4.94	5.22	5.48	5.63
340	0.07	0.09	0.1	0.11	0.13	0.13	0.13	0.15
Sum	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Sample Size	**162,883**	**169,031**	**181,557**	**196,222**	**279,092**	**271,835**	**301,961**	**336,768**

Table 10. *InformalLevy* by Area (i.e., by *Location_ID*)

Location_ID	Area	InformalLevy
11	Beijing	41.03%
12	Tianjin	41.41%
13	Hebei	36.36%
14	Shanxi	35.53%
15	Neimeng	48.89%
21	Liaoning	43.92%
22	Jilin	41.25%
23	Heilongjiang	42.00%
31	Shanghai	21.67%
32	Jiangsu	38.35%
33	Zhejiang	28.48%
34	Anhui	41.03%
35	Fujian	34.92%
36	Jiangxi	34.43%
37	Shandong	38.15%
41	Henan	40.56%
42	Hubei	27.20%
43	Hunan	48.44%
44	Guangdong	45.60%
45	Guangxi	53.19%
46	Hainan	25.93%
50	Chongqing	47.42%
51	Sichuan	50.00%
52	Guizhou	42.42%
53	Yunnan	73.17%
54	Tibet	20.00%
61	Shaanxi	37.72%
62	Gansu	36.11%
63	Qinghai	50.00%
64	Ningxia	50.00%
65	Xinjiang	48.89%

Table 11. Results of Diff-in-Diff Analysis by Using *GrowthRate_TotalAssets* as the Dependent Variable to Study the Impact Relative to *EnterpriseScale*

Independent Variable	(YR03, YR04, YR05)	(YR03, YR04, YR06)	(YR03, YR04, YR07)
Intercept	0.089***	0.095***	0.096***
	(SE: 0.023)	(SE: 0.025)	(SE: 0.027)
treatment	0.084***	0.084***	0.089***
	(SE: 0.004)	(SE: 0.005)	(SE: 0.005)
postamendment	-0.007	0.069***	0.142***
	(SE: 0.005)	(SE: 0.005)	(SE: 0.006)
(treatment*postamendment) by EnterpriseScale			
"Large-Size"	0.136***	0.296***	0.498***
	(SE: 0.049)	(SE: 0.048)	(SE: 0.049)
"Medium-Size"	0.095***	0.245***	0.376***
	(SE: 0.011)	(SE: 0.011)	(SE: 0.012)
"Small-Size"	-0.009	0.045***	0.089***
	(SE: 0.006)	(SE: 0.006)	(SE: 0.007)

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level.

The estimated coefficients of categorical control variables are omitted.

Table 12. Results of Diff-in-Diff Analysis by Using *GrowthRate_TotalFixedAssets* as the Dependent Variable to Study the Impact Relative to *EnterpriseScale*

Independent Variable	(YR03, YR04, YR05)	(YR03, YR04, YR06)	(YR03, YR04, YR07)
Intercept	0.111***	0.122***	0.094**
	(SE: 0.033)	(SE: 0.036)	(SE: 0.039)
treatment	0.088***	0.093***	0.095***
	(SE: 0.006)	(SE: 0.007)	(SE: 0.007)
postamendment	-0.011	0.029***	0.076***
	(SE: 0.007)	(SE: 0.007)	(SE: 0.008)
(treatment*postamendment) by EnterpriseScale			
"Large-Size"	0.171**	0.400***	0.565***
	(SE: 0.072)	(SE: 0.071)	(SE: 0.071)
"Medium-Size"	0.110***	0.239***	0.349***
	(SE: 0.016)	(SE: 0.017)	(SE: 0.017)
"Small-Size"	-0.013	0.050***	0.097***
	(SE: 0.008)	(SE: 0.009)	(SE: 0.010)

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level.

The estimated coefficients of categorical control variables are omitted.

Table 13. Results of Diff-in-Diff Analysis by Using *GrowthRate_TotalAssets* as the Dependent Variable to Study the Impact Relative to *InformalLevy_Category*

Independent Variable	(YR03, YR04, YR05)	(YR03, YR04, YR06)	(YR03, YR04, YR07)
Intercept	0.084***	0.086***	0.078***
	(SE: 0.023)	(SE: 0.025)	(SE: 0.027)
treatment	0.087***	0.090***	0.096***
	(SE: 0.004)	(SE: 0.005)	(SE: 0.005)
postamendment	-0.007	0.068***	0.139***
	(SE: 0.005)	(SE: 0.005)	(SE: 0.006)
(treatment*postamendment) by InformalLevy_Category			
"InformalLevy<=40%"	0	0.062***	0.110***
	(SE: 0.006)	(SE: 0.007)	(SE: 0.007)
"InformalLevy>40%"	0.001	0.069***	0.137***
	(SE: 0.007)	(SE: 0.008)	(SE: 0.008)

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level.

The estimated coefficients of categorical control variables are omitted.

Table 14. Results of Diff-in-Diff Analysis by Using *GrowthRate_TotalFixedAssets* as the Dependent Variable to Study the Impact Relative to *InformalLevy_Category*

Independent Variable	(YR03, YR04, YR05)	(YR03, YR04, YR06)	(YR03, YR04, YR07)
Intercept	0.102***	0.110***	0.073*
	(SE: 0.033)	(SE: 0.036)	(SE: 0.039)
treatment	0.090***	0.097***	0.100***
	(SE: 0.006)	(SE: 0.007)	(SE: 0.007)
postamendment	-0.011*	0.027***	0.073***
	(SE: 0.007)	(SE: 0.007)	(SE: 0.008)
(treatment*postamendment) by InformalLevy_Category			
"InformalLevy<=40%"	-0.015*	0.056***	0.100***
	(SE: 0.009)	(SE: 0.010)	(SE: 0.011)
"InformalLevy>40%"	0.023**	0.093***	0.169***
	(SE: 0.010)	(SE: 0.011)	(SE: 0.012)

* Statistically significant at the 10% level

** Statistically significant at the 5% level

*** Statistically significant at the 1% level.

The estimated coefficients of categorical control variables are omitted.

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