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# Confucianism and the Legalism: A Model of the National Strategy of Governance in Ancient China

Haiwen Zhou

## Abstract

The Confucianism school emphasizes family value, moral persuasions, and personal relations. Under Confucianism, there is a free-rider issue in the provision of efforts. Since national officials are chosen through personal relations, they may not be the most capable. The Legalism school emphasizes the usage of incentives and formal institutions. Under the Legalism, the ruler provides strong incentives to local officials which may lead to side effects because some activities are noncontractible. The cold-blood image of the Legalism may alien citizens. By exploiting the paternalistic relationship between the ruler and the ruled under Confucianism and the strength of institution-building under the Legalism, the ruler may benefit from a combination of Confucianism approach and the Legalism approach as the national strategy of governance. As each strategy has its pros and cons, which strategy of is optimal depends on factors such as the minimum enforceable level of public service and the level of institution building costs.

**Keywords:** Confucianism, Legalism, national strategy of governance, ancient China, incentive provision, culture

**JEL Classification Numbers:** N45, H10, A10

## 1. Introduction

A national strategy of governance was useful to unify thoughts, to guide expectations, and thus to consolidate resources to achieve national goals. Rulers in ancient China might choose from different national strategies of governance. First, the Confucianism approach could be used as the national strategy of governance. Second, the Legalism approach could be used as the national strategy of governance. Third, different combinations of Confucianism approach and the Legalism approach could be used as the national strategy of governance.<sup>1</sup> There are some interesting questions about the national strategies of governance in ancient China. First, Confucianism was believed by many to be too idealistic. It was also frequently criticized as an obstacle for the adoption of new and valuable ideas. If so, why did rulers in ancient China promote Confucianism as a national philosophy? Second, while the institutions from the Legalism school helped Qin Shi Huang to unite China in 221 BC, why did many rulers avoid promoting the Legalism publically as

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<sup>1</sup> Other strategies of governance were also practiced in ancient China. For example, at the beginning of the Han Dynasty (206 BC – 220), the Daoist was followed as a national strategy of governance. The Daoist school promoted a life style of a hermit (Waley, 1982). Under the influence of the Daoist school, the Han government had a laissez-faire attitude toward the daily lives of citizens.

a national strategy of governance? Finally, what were the key factors affecting a ruler's choice of national strategy of governance?

There are voluminous studies on ancient China. For example, Huang (1982, 1997, 1999) and Wong (1997) provide illustrations of China's general history. Elvin (1973), Chao (1986), Huang (1974), Shiue (2004, 2005), and Shiue and Keller (2007) specialize on economic history. Lin (1995), Wong (1997), and Pomeranz (2000) focus on the divergence between China and Europe in terms of achieving industrial revolution independently. More specific to this paper, Gu (2010) and Waley (1982) provide illustrations of different schools of thoughts in China. However, to our best knowledge, there is no formal model addressing the national strategy of governance in ancient China. A formal model will be useful to organize our thinking on this important issue. This paper contributes to the literature by interpreting the key features of Confucianism and the Legalism from the perspective of economics and analyzing the advantages and disadvantages of using Confucianism and the Legalism as a national strategy of governance in ancient China in a formal model. In this model, there are multiple districts. In each district, output is determined by the labor input and public service of local officials and the average ability of national officials. A higher amount of institution building will lead to higher average ability of national officials with the corresponding higher cost. The ruler chooses the national strategy of governance which determines the levels of labor input and public service of local officials and the average ability of national officials, and thus the level of output in each district. Suppose beyond a minimum level of public service, the ruler could not write a contract on the level of public service provided by a local official.

First, we study the first-best case as a benchmark. In the first-best case, inputs of a local official and the degree of institution building are optimally chosen. We show that there is complementarity in the choices of labor input and public service of local officials and the choice of the intensity of institution building. The ruler provides less incentive to local officials when the institution building cost increases. A decrease of the cost of effort of a local official leads to higher levels of public service and labor input. In the first-best case, the levels of public service, labor input, and the intensity of institution building increase with the number of administrative regions in the country.

Second, we study the usage of Confucianism as a national strategy of governance. Under the Confucianism approach, the country was like an extended family and moral persuasions rather

than incentives were emphasized. Also, Confucianism valued personal relations. We show there are pros and cons of the Confucianism approach. On the one hand, because relying on formal incentives could lead to negative side effects, there are roles to be played by culture and social norms. More specifically, Confucianism can be used as an informal contract to soften the free-rider problem when no formal incentive was provided. On the other hand, under Confucianism, since local officials share local output, there is a free rider issue. Also, since national officials are chosen through personal relations, national official may not be the highest quality.

Third, we study the usage of the Legalism as a national strategy of governance. Under the Legalism approach, the ruler provided strong incentives to citizens and emphasized the usage of institutions in achieving desired results. Also, the government had a strong control of the daily lives of citizens. There are pros and cons associated with the Legalism approach. On the one hand, the free-rider issue in the provision of efforts is solved. If the number of districts in the country is high, it pays to build formal even though costly institutions to select national officials. On the other hand, providing strong incentives to local officials could lead to undesirable side effects (Lazear, 1989, Holmstrom and Milgrom, 1991). Since the level of public service is noncontractible, under the Legalism, the provision of public service by a local official could be too low. Also, the cold-blood image of the Legalism may alien citizens.

The Legalism school argued that reward and punishments should be significant and citizens should be kept poor to make the policies more effective. In addition, individuals were restricted in their career choices and residential choices. We show that those strategies adopted by the Legalism school are consistent with economic theory. As those measures decreased the reservation utility of a citizen, they decreased the cost of providing incentives to citizens and increased the payoff of the ruler. Showing the working of the Legalism as a system is another contribution of this paper to the literature.

Finally, we discuss which strategy should be adopted as the national strategy of governance. Which approach would work better than others depends on various factors. First, when the cost of institution building is lower, or if the spread of the distribution of talents in society is higher, the ruler is more likely to use institutions in the selection of national officials. Second, when the minimum enforceable level of public service increases, the ruler will provide more incentives to local officials. Third, an increase of the number of administrative regions would increase the adoption of formal institutions in the selection of national officials.

This paper is related to two lines of literature. First, this paper is related to the literature showing that negative externalities might be generated if the principal provides strong incentives to agents. In Lazear (1989), a large reward to the winner of a contest will increase a contestant's allocation of resources to sabotages rather than to productive activities. In Holmstrom and Milgrom (1991), a principal benefits from an agent's effort in multiple activities. If the principal does not provide incentive to the agent, the agent will allocate effort on multiple activities. Rewarding one activity with a low variance of measurement can lead to the decrease of effort on other activities with higher variances of measurement. As a result, the payoff to the principal when incentive is provided to the agent could be lower than that when no incentive is provided to the agent. Second, this paper is related to the literature on culture and social norms. While Confucianism was promoted by rulers intentionally as a national philosophy, social norms could be formed spontaneously. However, once the ideas of Confucianism had become ingrained into the value systems of citizens, they became a part of the social norms. The focus in this paper is different from the focus of models on social norms. Models on social norms study the impact of social norms on social welfare. On the one hand, Fang (2001) shows that social culture can be used to overcome informational free-riding problem. On the other hand, Elster (1989) argues that social norm may not always increase social welfare and various practices that could increase social welfare have not been incorporated into social norms. This model does not focus on how Confucianism or the Legalism may overcome market failure. It recognizes the pros and cons of Confucianism and the Legalism and focuses on the conditions under which one strategy would work better than others.

The rest of the paper is organized as follows. Section 2 illustrates the historical development of national strategies of governance in ancient China to motivate the model. Section 3 specifies the model. Section 4 addresses the first-best national strategy of governance. Section 5 studies the usage of Confucianism, the Legalism, and different combinations of the Confucianism and the Legalism as a national strategy of governance and compares the performance of different strategies of governance. Section 6 concludes.

## **2. Historical Development of National strategies of Governance in Ancient China**

In this section, we illustrate the historical development of different national strategies of governance in ancient China. One thing we should keep in mind is that the development of each

school of thought is a dynamic process. Historically, each school of thought benefited from and borrowed ideas from other schools of thought.

“One hundred schools of thoughts” including Confucianism and the Legalism appeared during the Spring-Autumn Period (770 BC-476 BC) and the Warring States Period (475 BC-221 BC). During this period, because vassals engaged in wars of annexation, the number of autonomous political powers decreased over time. First, at the beginning of the Spring-Autumn Period, there were more than four hundred autonomous political powers. Second, at the beginning of the Warring States Period, there were only seven major states. Finally, at the end of the Warring States Period, the State of Qin united China in 221 BC. This period of fierce competition among rulers created a relatively tolerant environment for different schools of thoughts to prosper. Scholars from different schools tried to promote their policies to rulers dreaming of strategies that could lead to their military dominance over their peers.

## **2.1. Confucianism**

The origin of the Confucianism went back to the Duke of Zhou (? – 1043 BC) of the Zhou Dynasty (1046 BC-256 BC). It is claimed that the Duke of Zhou developed “li” (ritual) to regulate the relationship between the Zhou ruling house and vassals and other nobles (Huang, 1997). The Zhou Dynasty could be viewed as practicing of Confucianism. At that time, communities had small sizes of population. Under Confucianism, society was organized by a hierarchy of relations. Loyalty and filial piety were viewed as important virtues.

Famous scholars of the Confucianism include Confucius (551 BC-479 BC) and Mencius (372 BC-289 BC). Confucius had a very successful record in educating students as it was claimed that he had more than three thousand students of which seventy-two were prominent. Viewing the period of the Duke of Zhou as the golden time, Confucius thought it would be good to go back to the political system in the early period of the Zhou Dynasty. Even though Confucius was elevated to high status after his death, his political career was not very successful. He spent many years in promoting his ideas to rulers in different states and was not well received. Mencius also tried to promote his ideas to rulers. With his fame, he got some interviews such as with the King Hui of Liang (Wei). As Mencius tried to promote “yi” (righteousness) and the rulers were interested in quick and practical solutions to the questions they faced, Mencius lost his audience and was not very successful in his political career.

There are some important features of Confucianism. First, the objective of Confucianism was to establish a harmonic society, rather than to promote the interests of the ruler. For example, Mencius thought that citizens were more important than the government, and the government was more important than the ruler.

Second, the Confucianism school did not encourage the usage of material incentives and opposed the usage of severe punishments to rule. To motivate individual behavior, moral obligations were emphasized. For Confucianism, a country is an extended family and a ruler should take care of his citizens like a father would take care of his children. Both the ruler and his subjects and a father and his children have their rights and obligations. The ruler should behave like a ruler and a minister should behave like a minister, and a father should behave like a father and a son should behave like a son (jun jun, chen chen, fu fu, zi zi).

Third, the Confucianism school did not value institutions in inducing desirable behavior. This school thought that human nature was good. Good behavior resulted from good human nature and institutions would not be necessary to induce good behavior. To rule effectively, the ruler should find people with high moral standards and place them at important positions. Recommendations by local communities or highly respected persons would be a valuable strategy to select government officials. Moral teaching was used to convince government officials that corruption should not be practiced. The ruler should trust government officials.

Fourth, in terms of foreign relations, Confucianism discouraged a state's invasion of other states. Confucianism argued that by following the guidance of li, a humane ruler would induce residents in other states to accept the rule of the humane ruler voluntarily. Relying on military force as a defense would be inferior and would be unnecessary for a state.

Overall, Confucianism emphasized family value and moral persuasions. Also, personal relations rather than institutions were emphasized. The Confucianism approach had a merit of encouraging the rulers to take the welfare of citizens into consideration in their ruling. However, the Confucianism approach could be too idealistic and could not fit reality. In reality, the selection of government officials through recommendations valued by Confucianism led to high level of corruption. High positions of the government were monopolized by individuals with strong family backgrounds and capable individuals with weak family backgrounds could not get high rank positions (Qian, 2001).

## 2.2 The Legalism

The Legalism school argued that law should be applied equally among all individuals, regardless of the position of an individual. This school did not depict a romantic picture of the past and had a pragmatic attitude in designing policies to handle governmental affairs. During the Spring-Autumn period and the Warring States period, the Legalism school was adopted by Guan Zhong (about 723 BC or 716 BC – 645 BC) of the State of Qi, by Shen Buhai (about 385 BC – 337 BC) of the State of Han, and by Li Kui (455 BC – 395 BC) of the State of Wei. More significantly, the Qin Dynasty (221 BC – 206 BC) adopted the Legalism as the national strategy of governance.<sup>2</sup>

Guan Zhong, who introduced various types of social and economic policies in the State of Qi and helped the State of Qi to become a superpower at that time, was usually credited as a pioneer of the Legalism school (Lu, 2011). Shang Yang (about 395 BC – 338 BC) and Li Si (about 284 BC – 208 BC, the prime minister of Qin Shi Huang (259 BC – 210 BC)) were also some of the famous followers of the Legalism. Ideas of the Legalism were synthesized by Han Fei (about 281 BC - 233 BC) who was a member of the royal family of the State of Han. Han Fei integrated the three tools of ruling proposed by other thinkers of this school: law (fa), political tactics (shu), and authority (shi). First, law would be used to rule average citizens. Second, political tactics would be used to control powerful ministers. Third, a ruler's authority depended on his position, legitimacy, and the high pressure produced under harsh law. Han Fei was mainly a scholar, and his political career was not very successful and he died in the jail of the State of Qin.<sup>3</sup>

There are some important features of the Legalism. First, the sole purpose of the Legalism was to make the rule of the ruler longer.<sup>4</sup> For the Legalism, each citizen should be loyal to the ruler rather than loyal to his father or his clan. To further the interest of the ruler, a ruler's adoption of the Legalism was associated with a tight control of society. For example, Han Fei thought that only peasants and soldiers were useful for society. Other professionals such as Confucianism followers should be prohibited to maximize the number of individuals directly engaging in

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<sup>2</sup> Qin Shi Huang united China in 221 BC and he was the first emperor of China. Before this unification, Qin was one of the states competing for the unification of China. In this paper, Qin is used to refer to both the Qin Dynasty after the unification of China and the State of Qin before the unification of China.

<sup>3</sup> While Han Fei argued in his writing that the trust of the ruler should be ensured before a scholar began advising the ruler, he did not get the trust of Qin Shi Huang before he advised Qin Shi Huang. Even though Qin Shi Huang admired Han Fei's works, he decided to put Han Fei into jail. Li Si, who was a former classmate of Han Fei and jealous of his abilities, played a bad role in the death of Han Fei.

<sup>4</sup> That is, the purpose of the Legalism school was not to ensure the "rule of law".

production. Second, as discussed in the Shang Yang Reform later on, the Legalism emphasized the usage of incentives to govern.

Third, the Legalism emphasized the usage of institutions in inducing desired behavior. Not inconsistent with the standard assumption in modern economics that individuals are self-interested, the Legalism school thought that human nature was bad.<sup>5</sup> As an individual could not be trusted, rather than trying to find good individuals to serve the government, this school of thought paid much attention to the design of institutions to prevent undesirable things from happening.<sup>6</sup> Even though the ability of the ruler may not be high, if the institutions were well designed, the government would still function well. This was different from the approach of Confucianism which emphasized that officials should have high moral standards and should be capable. To prevent powerful ministers from rebelling, the Legalism followers thought that the division of power should be implemented among officials to ensure the rule of the ruler. To select government officials, the Legalism school thought that an impartial system such as the Imperial Examination System should be used.

Fourth, in terms of foreign relations, the Legalism school encouraged the building of a strong army. In the case of the State of Qin, the state was turned into a war machine under the Legalism influence. For rulers trying to survive the competition among states, the Legalism approach was more practicable than the Confucianism approach.

The famous Shang Yang Reform of the State of Qin is an example of the application of the thoughts of the Legalism. Before the reform, the State of Qin was not a superpower among the states. Started at 356 BC, Shang Yang introduced a series of institutional reforms in about twenty years. Policies tried to provide strong incentives to individuals.<sup>7</sup> First, public land (the “well field system”) was eliminated and land was privatized. Individuals exclaiming new pieces of land would be granted ownership of the land. Various policies such as tax policies were established to attract immigrants and to encourage internal population growth. Second, individuals would be awarded government positions according to their contribution to the government rather than

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<sup>5</sup> Han Fei did not think the selfishness nature of individuals would be a problem. In his opinion, the reason that citizens followed the ruler was because the ruler had the power to reward and punish. If instead citizens did not response to reward and punishment, it would be very difficult for the ruler to control his citizens.

<sup>6</sup> Zhou (2012) has a discussion of the strategies used by rulers in ancient China to prevent internal rebellions. Those strategies might weaken the country’s abilities to defend external threats.

<sup>7</sup> There were also measures taken to increase productivity. For example, measurement units were united to achieve economies of scale. When the State of Qin united China, the government provided standards for the writing of Chinese, the size of wagons, and the measurement units at the national level.

according to their blood. Positions needed to be earned rather than inherited. Significant punishments and rewards were used to induce individuals to fight for the country rather than for their clans. Third, various policies increased the direct control of the ruler of Qin over society. For example, rather than awarding land to vassals to be ruled indirectly, counties were established to be ruled by the ruler directly. An individual was required to report to the government if his neighbor engaged in unlawful activities. Institutional reforms introduced by Shang Yang helped to consolidate resources for the Qin rulers.<sup>8</sup> Even though some other states also engaged in reform, the Shang Yang Reform was more extensive than other states. As a result, the State of Qin became a formidable superpower among the states. About 135 years after the reform, Qin Shi Huang was able to annex the other six major states and achieved unity of China in 221 BC.

Overall, the Legalism tried to provide material incentives to individuals to induce the desired results. There are pros and cons of the Legalism. On the one hand, the Legalism emphasized institution building. In China's history, institutions of the Qin Dynasty heavily influenced the institutions of all following dynasties. On the other hand, the cold-blood promotion of the sole interests of the rulers might actually backfire because citizens might feel aloof under a ruler adopting the Legalism as the national strategy of governance. The usage of strong incentives under the Legalism also led to negative effects. One aspect of the negative effectives is that citizens might cheat to take advantage of the incentive system under the Legalism. For example, when soldiers were rewarded by the number of heads of enemy soldiers cut down in the battlefields, some soldiers cheated by cutting down the heads of civilians to invite reward. As individuals were encouraged to focus on material rewards, the Legalism was criticized by Confucianism followers such as Dong Zhongshu (179 BC – 104 BC) for leading to harsh relations even within a family: if the son tried to borrow a cue from the father, the father would feel unhappy; if the mother tried to borrow a rake from the son, the son would be reluctant. Under the Legalism, if a husband had conducted a crime, the wife should report the crime to the government and would be rewarded for doing this. Actually, Han Fei argued that a person should not even trust his wife and his children. For Confucianism followers viewing filial piety as an essential virtue, the above would be unacceptable.

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<sup>8</sup> As the interests of the nobles were harmed by the policies introduced by Shang Yang, some of them tried to sabotage those policies. When the prince violated the law, his mentors were punished by Shang Yang. Shang Yang was killed when the incumbent duke (Duke Xiao of Qin) passed away and the prince became the new ruler (King Huiwen of Qin). However, the policies introduced by Shang Yang were kept.

### 2.3. A Combination of Confucianism and the Legalism

The rule of the Qin Empire did not last long. After the death of the founding emperor Qin Shi Huang in 210 BC, the Qin Empire collapsed in 206 BC. It is commonly believed that the harsh laws of the Qin Dynasty contributed to the fall of the Qin Empire: two individuals (Chen Shen and Wu Guang) initiated a rebellion because they would miss the deadline of arriving at the destination they were supposed to provide their military service. According to the Qin law, missing the deadline would lead to the death penalty. Rather than waiting to be sentenced to death, they decided to rebel. Their rebellion led to other rebellions around the country and the Qin Dynasty eventually collapsed. While the Qin succeeded in unifying China, the fast collapse of the Qin Dynasty raised an important question: was the fall of the Qin Dynasty a result of the fundamental flaws of the Legalism or was the fall a result of a wrong application of the Legalism? If the laws were less harsh as those implemented in the Qin Empire, will the Legalism work?

Liu Che (156 BC – 87 BC), an emperor in the Han Dynasty, is commonly viewed as the first ruler attempting to combine the benefits of Confucianism and the Legalism. As a young emperor, Liu Che had a strong desire to win wars with Xiongnu. Liu Che solicited proposals from citizens on strategies to increase the wealth and military power of the country. At that time, Dong Zhongshu reformulated Confucianism. Dong Zhongshu incorporated some ideas from the Legalism into his new Confucianism, he also incorporated the ideas that the power of the emperors was divine and there were unity between deity and human beings.<sup>9</sup> He suggested Liu Che to promote his new Confucianism while to discourage other schools of thoughts. Liu Che adopted Dong's suggestions and Confucianism became the national philosophy of China. The Confucianism was taught at the national level and it was used to achieve cultural unity in ancient China.

While the Confucianism received a high status as the essential part of the national philosophy, rulers knew the limitations of the Confucianism.<sup>10</sup> In practice, institutions were frequently designed under the principles of the Legalism.<sup>11</sup> However, because the Legalism had a

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<sup>9</sup> For Dong, if an emperor did not follow the order of the heaven, the heaven would provide some signals such as earthquakes to warn the emperor. This was a mechanism to provide some restraints on the behavior of emperors.

<sup>10</sup> Even though Liu Che elevated Confucianism to a high status, he used government officials with various backgrounds such as followers of the Legalism school.

<sup>11</sup> Wang Mang (45 BC - 23 AC), a controversial figure in China's history, tried to implement a large-scale institutional reform according to the principles of Confucianism, was not successful.

harsh image to citizens and it might alien citizens, a ruler might not want to publicly promote the Legalism as the national strategy of governance.<sup>12</sup> Since Liu Che, most rulers in the past two thousand years of China used a combination of Confucianism and the Legalism to rule. Under this combination, local affairs below the county level were handled in the Confucianism style. Clan leaders made various decisions for group members. Consistent with the Legalism approach, institutions were built for the running of the central government. This kind of combination of Confucianism and the Legalism was sometimes called “ru biao fa li” (a Confucianism exterior covering the Legalism core).

This combination of Confucianism and the Legalism had its pros and cons. On the one hand, this combination of Confucianism and the Legalism led to benefits to the rulers and made the government last longer. The propaganda of Confucianism led to the impression that the rulers were trying to maximize social welfare, rather than their personal benefits. This warm relationship between the rulers and the ruled decreased the intention of the ruled to rebel. The practice of the Legalism in actual ruling increased the organization capacity and military power of the country and thus decreased the possibilities that the country would be destroyed by enemies. On the other hand, because Confucianism and the Legalism school have different and usually opposite policy implications, conflicts frequently arose. For scholars educated in the tradition of Confucianism, they would soon find out that the skills needed to pass the Imperial Examinations might not be relevant to the handling of governmental activities (Lu, 2011). Sticking to the ideas of Confucianism produced “loyal” ministers that even the emperors did not feel comfortable with. To learn the subtle points of handling actual governmental affairs, would-be government officials frequently practiced as personal aids to government officials if they were luck enough to have this kind of opportunities.

### 3. Specification of the model

In this section, we specify the model. There is a ruler who will choose the national strategy of governance. There are  $\eta$  identical districts in the country. In each district, there are  $m$  local officials. Each local official decides how much public service and labor input to provide. For  $G \in [0, \bar{G}]$  and  $I \in [0, \bar{I}]$ , output in a district is determined by the sum of the level of public service

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<sup>12</sup> Qin Shi Huang, who promoted the Legalism, had a bad reputation of being cruel.

$G$ , sum of the labor input  $I$  of local officials, and the average ability of national officials. Specifically, for  $\rho$  denoting a constant between zero and one and  $\beta$  denoting the average ability of national officials, the level of output in a district is specified as  $\beta(\sum G)^\rho(\sum I)^{1-\rho}$ . National output is the sum of output of all districts. A local official's cost of providing public service  $G$  and labor input  $I$  is determined by the sum of public service and labor input. More specifically, for  $k$  denoting a positive constant, a local official's cost of effort is  $k(G + I)^2 / 2$ .

We assume that the ruler is able to write a contract with a local official on the level of labor service, but he is not able to write a contract with a local official on the level of public service provided. However, there is a minimum level of public service  $g$ . A ruler would be able to detect if a local official's provision of the public service is lower than this critical level. The above specifications can be motivated as follows. Suppose a local official exerts effort to collect taxes for the ruler (labor service) and also provides effort to ensure the stability of society (public service). It could be more difficult to measure a local official's contribution to social stability than to measure the amount of tax revenue collected. A local official may use various extraordinary strategies to collect taxes leading to the resentment of citizens. With a lower level of satisfaction, citizens may rebel. Prevention of rebellion requires the minimum level of public service. While the exact level of satisfaction of citizens may be hard to observe and measure, it is easier to detect the existence of a rebellion.

There are two approaches in the selection of national officials and thus the determination of the average ability of national officials.<sup>13</sup> First, a ruler may choose national officials through his personal preference. In this case, the average ability of national officials is  $\underline{\beta}$ , an exogenously given positive number. Second, the ruler may engage in institution building such as the imperial examination system to choose the best qualified officials. Let  $n$  denote the intensity of institution building and  $n \in [\underline{n}, \bar{n}]$ . A higher number of  $n$  indicates a more intensive effort of institution

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<sup>13</sup> In this model, the incentive issue of national officials is not addressed explicitly. This assumption can be justified as follows. Suppose that national officials were paid fixed salaries and it was easier for the ruler to monitor national officials than local officials. Alternatively, national officials might be viewed as more motivated by career concerns than local officials. With more monitoring of national officials or stronger career concerns, the incentive issue of national officials would be less significant as compared with that of local officials.

building. Institution building is costly.<sup>14</sup> Let  $\theta$  denote a positive constant. If the fixed cost of institution building is  $\theta f(n)$ , the average ability of national officials is  $\beta(n)$ . To capture the idea that a higher level of institution building will result in a higher average level of ability of national officials, we assume that  $\beta'(n) > 0$  and  $f'(n) > 0$ .<sup>15</sup> We also assume that  $\beta(\underline{n}) = \underline{\beta}$  and  $\beta(\bar{n}) = \bar{\beta}$ . That is, the average ability of national officials chosen formally through institutions is always better than that of national officials chosen through personal relations.

The ruler may choose from different national strategies of governance. First, when the ruler does not provide incentives to a local official's choices of efforts and national officials are chosen through personal preferences, this strategy of governance is called Confucianism. Second, when the ruler provides incentives to local officials and chooses national officials through the highest level of institution building, this strategy of governance is called the Legalism.<sup>16</sup> Third, a ruler may use different combinations of Confucianism and Legalism to rule.

#### 4. The first-best outcome

In this section, we study the first-best national strategy of governance in which the levels of inputs of a local official and the degree of institution building are optimally chosen to maximize national surplus. The value of national output is  $\eta[\beta(n)(mG)^\rho(mI)^{1-\rho}]$ . The total cost of efforts by all local officials in the nation is  $\frac{\eta mk}{2}(G+I)^2$  and the total cost of institution building for the nation is  $\theta f(n)$ . The objective is to choose the level of public service and labor input of a local official, and the degree of institution building to maximize national surplus

$$V_F \equiv \eta \left[ \beta(n)(mG)^\rho(mI)^{1-\rho} - \frac{mk}{2}(G+I)^2 \right] - \theta f(n). \quad (1)$$

Optimal choices of  $G$ ,  $I$ ,  $n$  require that

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<sup>14</sup> One alternative interpretation of the costly institution building assumption is that the appointment of government officials through personal relations brings more personal benefits while appointment through formal institutions brings less benefit to the ruler.

<sup>15</sup> The specification of institution building costs is similar to the specification of the choice of technologies in Zhou (2004, 2009). Zhou (2004) provides a discussion of the tradeoff between fixed and marginal cost of production in the choice of technologies. Zhou (2009) uses the choice of technology approach to address the lack of industrialization in ancient China.

<sup>16</sup> If under the Legalism, the level of institutions can be chosen in a continuous way like the first-best case, the main results of the paper would not change.

$$\Phi_1 \equiv \rho \beta(n) G^{\rho-1} I^{1-\rho} - k(G + I) = 0, \quad (2a)$$

$$\Phi_2 \equiv (1 - \rho) \beta(n) G^\rho I^{-\rho} - k(G + I) = 0, \quad (2b)$$

$$\Phi_3 \equiv \beta'(n) m \eta G^\rho I^{1-\rho} - \theta f'(n) = 0. \quad (2c)$$

The set  $[0, \bar{G}] \times [0, \bar{I}] \times [n, \bar{n}]$  is a lattice with the usual ordering. Partial differentiation of (1) leads to

$$\frac{\partial^2 V_F}{\partial G \partial I} = 0, \quad \frac{\partial^2 V_F}{\partial G \partial n} > 0, \quad \frac{\partial^2 V_F}{\partial I \partial n} > 0.^{17} \quad (3)$$

The following proposition studies the impact of a change of the level of the cost of exerting effort on the levels of inputs and the intensity of institution building.

**Proposition 1:** In the first-best case, the levels of public service and labor input of a local official, and the intensity of institution building decrease with the cost of effort.

**Proof:** Define  $t = -k$ . Partial differentiation of (1) leads to  $\frac{\partial^2 V_F}{\partial G \partial t} > 0$ ,  $\frac{\partial^2 V_F}{\partial I \partial t} > 0$ , and  $\frac{\partial^2 V_F}{\partial n \partial t} > 0$ . From Topkis (1998, chap. 2), the objective function (1) is supermodular in  $G$ ,  $I$ ,  $n$ , and  $-k$ . Maximizing a supermodular function on a lattice,  $G$ ,  $I$ , and  $n$  decreases with  $k$ .

From Proposition 1, an increase of a local official's cost of effort will decrease the incentive to build institutions for the selection of national officials.<sup>18</sup> The reason is that an increase of a local official's cost of effort decreases the marginal benefit of a more intensive institution building. As a result, less institution building should be chosen.

Rosenthal and Wong (2011) have argued that the huge size of ancient China compared with a given country in Europe could be used to explain the divergence between ancient China and Europe in terms of achieving industrialization independently. The size of a country can be

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<sup>17</sup> By using (2a) and (2b), it can be shown that  $\partial \Phi_1 / \partial I = 0$  and  $\partial \Phi_2 / \partial G = 0$ .

<sup>18</sup> Similar to the proof of Proposition 1, it can be shown that in the first-best case, the objective function (1) is supermodular in  $G$ ,  $I$ ,  $n$ , and  $-\theta$ . Thus, the levels of public service and labor input of a local official, and the intensity of institution building decrease with the cost of institution building. To understand this result, the marginal benefit of more public service or labor input by a local official decreases when the average ability of national officials is lower. As a result, the equilibrium levels of public service and labor input by a local official decrease with the cost of institution building.

captured by an increase of the number of administrative regions in this model. The following proposition studies the impact of a change of the number of administrative regions on the choice of effort levels of a local official and the intensity of institution building.

Proposition 2: In the first-best case, the levels of public service and labor input of a local official, and the intensity of institution building increase with the number of administrative regions.

Proof: Partial differentiation of (1) leads to  $\frac{\partial^2 V_F}{\partial G \partial \eta} > 0$ ,  $\frac{\partial^2 V_F}{\partial I \partial \eta} > 0$ , and  $\frac{\partial^2 V_F}{\partial n \partial \eta} > 0$ . Thus (1) is supermodular in  $G$ ,  $I$ ,  $n$ , and  $\eta$ . From Topkis (1998, chap. 2),  $G$ ,  $I$ , and  $n$  increases with  $\eta$ .

From Propositions 1 and 2, there is complementarity between incentive provision to local officials and institution building. Higher efforts of local officials will lead to more institution building in the selection of national officials, and vice versa.

## 5. Performance of different national strategies of governance

The first-best case may not be feasible in reality. In this section, we study the performance of different feasible strategies of governance: Confucianism, the Legalism, and combinations of Confucianism and the Legalism. Then we compare the performance of different strategies of governance.

### 5.1. Performance of Confucianism

In this subsection, we study the scenario that the ruler uses Confucianism as the national strategy of governance. Under Confucianism, the ruler will deal with a community (in this model, a district) rather than deal directly with a local official. Compared with a lump-sum tax, a non-lump sum tax may decrease local officials' incentives to provide public service and labor input and thus decreases total social surplus. Since rulers under Confucianism are assumed to maximize social welfare, we assume that the ruler charges a lump-sum tax from a district under Confucianism. Because a lump-sum tax is a transfer between the ruler and a district and it may not affect the total amount of surplus, we do not study the determination of the lump-sum tax under Confucianism. Instead, we focus on the total amount of surplus under Confucianism.

For a local official, let the level of public service provided by all other local officials in the same district be  $G_{-i}$  and the level of labor service provided by all other local officials be  $I_{-i}$ . Since Confucianism emphasizes family value, here we assume the level of output produced in a district is shared equally among the  $m$  local officials. In each district, total output is  $\underline{\beta}(G + G_{-i})^\rho (I + I_{-i})^{1-\rho}$  and a local official's share is  $\underline{\beta}(G + G_{-i})^\rho (I + I_{-i})^{1-\rho} / m$ . A local official's cost of effort is  $k(G + I)^2 / 2$ , thus his payoff is

$$\underline{\beta} \frac{(G + G_{-i})^\rho (I + I_{-i})^{1-\rho}}{m} - \frac{k}{2} (G + I)^2. \quad (4)$$

A local official takes the levels of public service and labor service provided by other local officials as given and chooses his own levels of public service and labor input to maximize his payoff (4). A local official's optimal choices of  $G$  and  $I$  require that

$$\frac{\underline{\beta} \rho (G + G_{-i})^{\rho-1} (I + I_{-i})^{1-\rho}}{m} - k(G + I) = 0, \quad (5a)$$

$$\frac{\underline{\beta} (1 - \rho) (G + G_{-i})^\rho (I + I_{-i})^{-\rho}}{m} - k(G + I) = 0. \quad (5b)$$

Let a subscript of  $C$  denote the equilibrium variables under Confucianism. In a symmetric equilibrium, local officials provide the same level of public service and the same level of labor input. Thus equations (5a) and (5b) become the following two equations showing that the levels of public service and labor input provided by a local official decrease with the cost of effort of a local official:

$$\frac{\underline{\beta} \rho G_c^{\rho-1} I_c^{1-\rho}}{m} - k(G_c + I_c) = 0, \quad (6a)$$

$$\frac{\underline{\beta} (1 - \rho) G_c^\rho I_c^{-\rho}}{m} - k(G_c + I_c) = 0. \quad (6b)$$

From equations (6a) and (6b), the level of public service and the level of labor input of a local official decrease with the number of local officials in the same district. Thus under Confucianism, there is a free rider issue in the provision of inputs.

Under Confucianism, the national level of surplus is

$$V_c \equiv \eta \left[ \underline{\beta} (mG_c)^\rho (mI_c)^{1-\rho} - \frac{mk}{2} (G_c + I_c)^2 \right]. \quad (7)$$

Partial differentiation of (5a) and (5b) leads to

$$\frac{\partial V_c}{\partial G_c} = m\eta \left[ \underline{\beta} \rho (G_c)^{\rho-1} (I_c)^{1-\rho} - k(G_c + I_c) \right] > 0, \quad (8a)$$

$$\frac{\partial V_c}{\partial L_c} = m\eta \left[ \underline{\beta} (1 - \rho) (G_c)^\rho (I_c)^{-\rho} - k(G_c + I_c) \right] > 0. \quad (8b)$$

From (8a) and (8b), under Confucianism, an increase of the level of public service or labor input of a local official will increase total amount of surplus. That is, the level of public service and labor input of a local official under Confucianism is lower than the first-best case.

## 5.2. Performance of the Legalism

In this subsection, we study the scenario that the ruler uses the Legalism as the national strategy of governance. Under the Legalism, the ruler could deal with a local official directly rather than through a community. Suppose the ruler provides the following incentive mechanism for each local official: the ruler charges a fixed fee of  $z$  and provides a unit reward of  $w$  for each unit of labor service provided by a local official. Since a local official is not rewarded for contribution on public service  $G$ , a local official will provide the minimum level of public service  $g$ . For a local official, his income is  $wI$  and his cost of providing  $g$  units of public service and  $I$  units of labor is  $k(I + g)^2 / 2$ . A local official chooses the level of labor input to maximize his net benefit

$$wI - \frac{k}{2}(I + g)^2 - z. \quad (9)$$

A local official's optimal choice of labor input requires that

$$I = \frac{w}{k} - g. \quad (10)$$

Let the reservation utility of a local official be  $R$ . From (9) and (10), the net benefit of a local official is  $\frac{w^2}{2k} - wg - z$ . The ruler will choose the fixed fee so that the payoff of a local official is equal to this official's reservation utility. As a result, the ruler sets the fixed fee equaling to  $\frac{w^2}{2k} - wg - R$ . Under the Legalism, the ruler's total revenue is the sum of output produced by

all districts  $\bar{\eta}\bar{\beta}(mg)^\rho(mI)^{1-\rho}$  and fixed fee collected from all local officials  $\eta m(\frac{w^2}{2k} - wg - R)$ , and his total cost is the sum of the cost of inducing labor inputs  $\eta wI$  and the cost of institution building  $\theta f(\bar{n})$ . Thus the ruler's payoff is

$$\bar{\eta}[\bar{\beta}(mg)^\rho(mI)^{1-\rho} - mwI + m(\frac{w^2}{2k} - wg - R)] - \theta f(\bar{n}).$$

Plugging the level of labor input from (10) into the above expression, the ruler will choose the level of reward  $w$  to maximize

$$V_L \equiv \arg \max_w \left( \bar{\beta}\bar{\eta}(mg)^\rho \left( \frac{mw}{k} - mg \right)^{1-\rho} - \frac{m\eta w^2}{2k} - \theta f(\bar{n}) - m\eta R \right). \quad (11)$$

An application of the Envelope theorem on (11) reveals that the ruler's payoff decreases with the reservation utility of an individual. Thus if possible the ruler has an incentive to decrease the reservation utility of a citizen. In this model, we have assumed that the reservation utilities of local officials to be exogenously given. This assumption can be motivated by arguing that there is a lowest limit of the level of utility for a citizen because citizens might rebel if their utilities become too low. Sometimes a citizen's reservation utility is not exogenously given and can be affected by the policies of the ruler. This observation is useful in understanding why the government adopted the Legalism approach in China's history tried to control the activities of citizens, such as the restriction of career choices and the mobility of citizens under Guan Zhong of the State of Qi.<sup>19</sup> Those kinds of restrictions would decrease the reservation utilities of citizens and the ruler's costs of providing incentives to citizens, and thus increase the payoff of the ruler.

The ruler's optimal choice of  $w$  requires that

$$\Gamma \equiv (1 - \rho)\bar{\beta}g^\rho \left( \frac{w}{k} - g \right)^{-\rho} - w = 0. \quad (12)$$

An increase of  $\rho$  means that the role of public service in the production of output increases. The following proposition studies the impact of a change of the share of public good in the production of output on the incentive provided to a local official.

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<sup>19</sup> Restriction of the mobility of citizens was followed by other political regimes, such as Shang Yang of the State of Qin and the Ming Dynasty (1368 - 1644).

Proposition 3: Under the Legalism,  $dw/d\rho < 0$  if and only if

$$(1 - \rho) \ln \left( \frac{g}{\frac{w}{k} - g} \right) - 1 < 0. \quad (13)$$

Proof: From (11),  $\frac{\partial^2 V_L}{\partial w \partial \rho} < 0$  if (13) is satisfied. Thus, if (13) is satisfied,  $V_L$  is submodular in  $w$  and  $\rho$ . As a result,  $dw/d\rho < 0$ .

When  $g$  is small, (13) is more likely to be satisfied. From Proposition 3, when the level of minimum public service is small, a ruler offers less incentive to labor service provided by a local official if the share of public service in the production of output increases.

The following proposition studies the impact of the level of the minimum level of public service on the ruler's choice of incentives to local officials.

Proposition 4: Under the Legalism,  $dw/dg > 0$ .

Proof: Partial differentiation of (11) leads to  $\frac{\partial^2 V_L}{\partial w \partial g} > 0$ . Thus,  $V_L$  is supermodular in  $w$  and  $g$ . Thus,  $dw/dg > 0$ .

To understand Proposition 4, since public service and labor input of a local official are complementary in the production of output, a higher level of minimum public service will increase the marginal product of labor service and thus increases a ruler's provision of incentives to a local official.

### 5.3. Performance of combinations of Confucianism and the Legalism

In this subsection, we study the scenario that the ruler uses different combinations of the Confucianism and the Legalism as a national strategy of governance. There are two ways to combine Confucianism with the Legalism.

First, suppose that the efforts of local officials are determined by the Confucianism approach, while the choice of national officials is determined by the Legalism approach. Under

this combination of Confucianism and the Legalism, a local official in a district choose the levels of labor input and public service to maximize

$$\frac{\bar{\beta}(G + G_{-i})^\rho (I + I_{-i})^{1-\rho}}{m} - \frac{k}{2}(G + I)^2. \quad (14)$$

Optimal choices of  $G$  and  $I$  require that

$$\frac{\bar{\beta}\rho(G + G_{-i})^{\rho-1} (I + I_{-i})^{1-\rho}}{m} - k(G + I) = 0, \quad (15a)$$

$$\frac{\bar{\beta}(1-\rho)(G + G_{-i})^\rho (I + I_{-i})^{-\rho}}{m} - k(G + I) = 0. \quad (15b)$$

A comparison of (5a) and (5b) with (15a) and (15b) reveals that a local official provides higher efforts under this combination of Confucianism and the Legalism than that under Confucianism.

Let a subscript of  $CL$  denote the equilibrium variables under this combination of Confucianism and the Legalism. For  $G_{CL}$  and  $I_{CL}$  defined in (15a) and (15b), the national surplus produced under this combination is

$$V_{CL} \equiv \bar{\beta}\eta(mG_{CL})^\rho (mI_{CL})^{1-\rho} - \theta f(\bar{n}). \quad (16)$$

Second, suppose the levels of labor input and public service of a local official are determined by the Legalism approach, while the choice of national officials is determined by the Confucianism approach. In China's history, this combination of the two schools of thoughts was less common than the first combination. In this case, the ruler chooses the level of incentives to local officials to maximize his total surplus

$$V_{LC} \equiv \arg \max_w \eta \left( \underline{\beta}(mg)^\rho \left( \frac{mw}{k} - mg \right)^{1-\rho} - \frac{mw^2}{2k} \right). \quad (17)$$

The ruler's optimal choice of  $w$  requires that

$$\underline{\beta}(1-\rho)g^\rho \left( \frac{w}{k} - g \right)^{-\rho} - w = 0. \quad (18)$$

A comparison of (12) with (18) shows that the level of incentive provided to a local official under this combination of Confucianism and the Legalism is lower than that under the Legalism.

#### 5.4. Comparison of Different Strategies of Governance

In this subsection, we compare different national strategies of governance and discuss the conditions under which a strategy would be optimal for the ruler.

The following proposition compares the marginal incentives for labor input under the Legalism and that under Confucianism. This proposition confirms the traditional wisdom that the incentive provided to a local official under the Legalism is stronger than that under Confucianism.

Proposition 5: The marginal incentive provided to a local official under the Legalism is stronger than that under Confucianism.

Proof: Under Confucianism, from (5b), the marginal incentive to a local official for each additional unit of labor input is  $k(G_c + I_c)$ . Under the Legalism, from (9), the marginal incentive to a local official for each additional unit of labor input is  $w = k(g + I)$ . We want to show that  $g + I > G_c + I_c$  if the Legalism is the best feasible strategy. If  $g + I < G_c + I_c$ , from (8a) and (8b), since the level of public service and the level of labor input are lower than those in the first-best case, for a given level of average ability of national officials, the total surplus increases if there is a switch to the Confucianism because the total amount of inputs is higher and the allocation of inputs is unconstrained under Confucianism.

From (7), (11), (16), and (17), the ruler's choice of the national strategy of governance is affected by various factors. First, when the cost of institution building is low ( $\theta$  decreases), the ruler will be more likely to use institutions in the selection of national officials. Second, if the spread of the distribution of talents in society is sufficiently high ( $\bar{\beta} - \underline{\beta}$  increases), the ruler will be more likely to use institutions in the selection of national officials. Third, when the minimum enforceable level of public service is high, the ruler will provide more incentives to local officials. Fourth and finally, when the number of administrative regions increases, the ruler will be more likely to adopt formal institutions to select national officials.

In China's history, rulers frequently used the first combination of Confucianism and the Legalism (payoff in equation (16)) as the national strategy of governance: local affairs were handled by clans and government officials above the county level were chosen mainly through examinations. This strategy would be the best feasible strategy when the level of minimum public

service was low and the number of administrative regions was high. This strategy would also be desirable from the following perspective. We have assumed that each individual is concerned with his own payoff only. Under the moral teaching of Confucianism, each individual could also care about the welfare of other relatives. With this change of the preferences of a local official, the free-rider issue can be partly avoided and each local official would provide higher efforts.

## **6. Conclusion**

In this paper, we have studied a ruler's optimal choice of the national strategy of governance in ancient China in a formal model. Under Confucianism, since local officials in the same district share local output, there is a free rider issue. Also, since national officials are chosen through personal preferences, most capable persons may not be chosen. Under the Legalism, the ruler provides incentives to local officials which may lead to side effects. National officials are chosen through formal institutions and more capable persons are more likely to be chosen. However, institution building is costly. The cold-blood image of the Legalism may alien citizens. By exploiting the paternalistic relationship between the ruler and the ruled under Confucianism and the strength of institution-building under the Legalism, the ruler may benefit from a combination of Confucianism approach and the Legalism approach as the national strategy of governance. As each strategy has its pros and cons, which strategy of governance is optimal depends on factors such as the minimum enforceable level of public service, and the level of institution building costs.

In this paper, we have assumed that the economy has only one sector of production. When there are multiple sectors of production, whether the ruler should provide incentives to officials in a sector depend on the specific features of this sector. Suppose there are a civilian sector and a military sector. Compared with the civilian sector, the ruler would be more likely to provide incentives to the military sector because the tasks performed by the military sector would be simpler than the tasks performed by the civilian sector: the main function of the military sector is to win a war while the function of the civilian sector can be more complicated and more difficult to measure. Thus, a ruler may not provide strong incentives to civilian officials while at the same time he may provide strong incentives to military officials.

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