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Tournament Competition of Chinese Political Leaders at Provincial Level

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ABSTRACT

One important question in political science and economics is whether Chinese government personnel system has triggered yardstick competition among local officials to boost economic growth. In this paper I consider the incentives of Chinese local officials in terms of their career development and lifetime productivity. I find no significant positive effect of princeling status¹ on governor's education investment level. Officials with princeling status tend to be appointed to provinces with high historical economic growth. Also, relative GDP growth has a strong positive effect on promotion, but it has no significant effect on termination, which indicates that economic performance only matters for promotion and governors should have little to worry about being terminated due to poor economic performance.

¹ Princeling status indicates whether the official is child of a ministerial level official or above.

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Chapter 1

Introduction

When communism failed in Eastern Europe and the Soviet Union, the future of the Chinese regime was very much in doubt. Two decades later, however, China surprised the world by embracing a breathtaking series of politically difficult reforms and continuously high rates of economic growth. Landry (2008) argued that it was the economic decentralization in conjunction with institutional and political reforms that enabled Chinese Communist Party (CCP) to acquire regime stability and prosperity. While decentralization may benefit economy, existing studies found a strong correlation between fiscal decentralization and a weaker autocracy. To balance the need of economic efficiency through decentralization and the preservation of Party rule, CCP conducted a series of political reforms that involve devising institutional mechanisms that minimize the chance that the Party may lose control over local elites.

A successful reform or policy requires local elites to perceive and act in line with the expectation of the Central Government. Understanding local officials' incentives helps one to comprehend and predict their political behaviors, choices, and ultimately outcomes. One important question is whether the government personnel system has triggered yardstick competition among local officials to boost economic growth, which has stirred heated debate in different studies in past years. In this paper I consider the incentives of Chinese local officials in terms of their career development and lifetime productivity. A tournament model is proposed based on Lazear and Rosen (1981) and empirical tests will be conducted accordingly.

In Chapter 2, I will briefly introduce the background of Chinese political system, history of political and economic reforms, and relevant characteristics of the cadre personal system.

In chapter 3, I review the literature on Chinese political leaders' incentives for career advancement and factors found to affect the promotion likelihood by different studies.

In chapter 4, I propose a rank-order tournament theory model based on Lazear and Rosen (1981) as the framework of this study, which considers the incentive of Chinese local officials in terms of their career development and lifetime productivity. It turns out that the official's investment level depends on both their family background and the spread between the winning and losing prizes. The model is further adjusted to add the constraints in Chinese personnel system. Three hypotheses are proposed based on the analysis of model.

In chapter 5, I explain the dataset used to test the hypotheses based on the framework, and in chapter 6 I interpret the empirical results. In chapter 7 I conclude my findings and suggest future research focuses.

Chapter 2

Background

To understand the Chinese political and economic system, one can start looking at the political institutions and the features of political culture that have been evolved significantly over the past decades. The Chinese Communist Party (CCP or Party) assumed power in 1949 through a victory in the civil war over Chiang Kai-shek's Nationalists, who moved their Republic of China government to the island of Taiwan. The Communists named their new regime the People's Republic of China (PRC).

The primary organizational principle in China was geography-based, with the political system broadly composed of five layers of administration. The first level is the center, collectively led by the Communist Party's Politburo Standing Committee (PSC). As of today, it is composed of seven men ranked from one to seven, each shouldering primary responsibility for a specific portfolio. Excluding Taiwan, Hong Kong and Macau, the second level is made up of 31 provincial-level governments, which include 23 provinces, five geographic entities called autonomous regions, and four municipalities that report directly to the central government (Beijing, Chongqing, Shanghai, and Tianjin). The third level includes more than 300 prefectural-level administrative units; the fourth includes nearly 3,000 counties and county-level cities; and the fifth includes about 40,000 townships and towns (Lawrence and Martin, 2013). Figure 1 below shows the map of 31 provincial-level governments and Taiwan, Hong Kong and Macau.



Figure 1. The 31 provincial-level governments and Taiwan, Hong Kong and Macau

China began its far-reaching economic reforms since 1978. Before the reform, the people's commune was in charge of both politics and economics and these were not separated. After the reform was introduced, there have been continuous calls for separation between party and state, politics and economics, and government and enterprises (Edin, 1998). Thereafter, an economic committee was established under the township government that was supposed to take charge of the economy, but was essentially controlled by the township head and the party secretary. As the reform deepened, ownership were sold to individuals, mostly managers and workers of the enterprises, but apparently only small and/or loss-making enterprises were sold while key enterprises were kept by the local government. As of 2011, 35% of business activity and 43% of profits in the People's Republic of China resulted from state-owned companies (Bradsher, 2012).

The reforms also accelerated the progress of economic and fiscal decentralization. Substantial political and fiscal decentralization has taken place that allowed local governments to account for nearly 70% of all government spending in 2002 (Landry, 2008; Guo, 2009). Provinces have played a much more important role in economic management because provincial leaders have the ultimate authority over the allocation of economic resources in their provinces. Because their political and economic decisions are so important on the economic performance of these provinces, they are also held accountable for the results of their decisions. It should be noted here that while the party secretary and the governor are the two top leaders in a province, they serve somewhat different roles. The secretary is actually the “first hand” in a province, exercising political leadership and personnel control over subordinate party and government cadres, while the governor is the top administrator who takes care of the daily management of government functions. Evidence also indicates that the top two provincial officials (governors and party secretaries) in the reform period are more likely to be promoted for achieving good economic performance than their predecessors or their peers (Chen, Li, and Zhou 2005; Li and Zhou 2005; Tao et al. 2010).

China’s reform of its cadre personnel system coincided with its economic reforms. Before the reform, political conformity was once the only important criterion for promotion. At the beginning of the reform, building a “national civil service system” was seen as necessary for economic development, and “cadre responsibility system” was part of the endeavor to improve government efficiency (Edin, 1998; Edin, 2003). While political loyalty remains important, three new elements were introduced into the evaluation process to measure competence: officials had to be of a young age, have good education, and demonstrate expertise in administrative management. Above all, local economic performance became the most important criterion that

was revealed by local officials' "obsession" with economic ranking among peers. Government reports or provincial yearbooks often contain detailed information on the relative rankings of the provincial performance, ranging from GDP growth, to steel production, to miles of road constructed (Li and Zhou 2005). In 1980, for the first time in its history, the CCP officially proposed abrogation of the lifetime appointment of party and government officials, and installed a mandatory retirement system. Implemented (loosely) in 1982, provincial leaders are required to retire at the age of 65 if they are not promoted to higher positions in the central government, so that younger people have more opportunities.

Typically, provincial leaders do not retire immediately after leaving office unless there are exceptional circumstances such as poor health or removal due to corruption scandal. Before retiring officially, they are often assigned, as a transition, to an honorary yet virtually powerless position, such as director of the provincial People's Congress, chairman of the provincial People's Political Consultative Conference, or even honorary positions on the National People's Congress or the National People's Political Consultative Conference. But no matter what the glory is, the loss of power determines the end of an official's political career. Public announcement of demotions are typically vague and rare, and a seemingly routine retirement may in fact disguise a dismissal. Because of the subtle difference between retirement and demotion, I choose not to distinguish them in this paper, and define termination as any departure from position of secretary or governor not followed by a horizontal move or promotion.

Chapter 3

Literature Review

Evidence suggests that a primary goal of cadres is to seek political advancement from which their personal enrichment can be further achieved through rent-seeking and lucrative business opportunities (Pan, 2013; Landry, 2008; Perry and Goldman, 2007). Promotion of local officials in China is determined by their upper-level governments, but the criteria of promotion have always been mysterious and highly unpredictable among different regions and at different bureaucracy levels. Some scholars argue that officials are more likely to be promoted for achieving good economic performance in the reform period, while others suggest little effect of economic growth on the chance of being promoted. At provincial level, governors and secretaries may be further promoted to membership of the State Council, the vice-premiership, the premiership and membership of the Politburo or the Politburo Standing Committee.

In the pursuit of political advancement, different studies have identified incentives for Chinese elites to maintain social stability, achieve economic and fiscal performance, and cultivate factional ties and sponsors (O'Brien and Li, 2006; Edin, 2003; Li and Zhou, 2005; Shih, Adolph and Liu, 2012). A key hypothesis in both economics and political science is that the CCP's cadre evaluation system, combined with China's geography-based governing logic, has provided strong incentives for regional administrators to compete with one another to generate high economic growth, in order to win promotion (Chen, Li, and Zhou, 2005; Li and Zhou, 2005; Maskin, Qian, and Xu, 2000). However, Shih (et.al, 2012) finds no correlation between higher party rank and improvement of GDP growth, nor between higher rank and other competence

factors including urban and rural standards of living, social service provision, and employment. Instead, he finds factional ties with top leaders, as well as princeling status, boosted the chance of climbing higher in the CCP upper echelons through much of the reform period. The hypothesis supported by the results is that if a regime experiences concealed or explicit power struggles at the top, faction-based promotion predominates. In factional politics, loyalty counts more than skills or performance on core tasks such as growth, revenue collection, and stability. Skills, in this case, may even be a liability, because clever subordinates may be too good at figuring out the expected payoffs of betraying the dictator, while less capable ones are more loyal (Egorov and Sonin, 2005). In the change of Communist Party's leadership in November 2012, Communist Party Politburo member and Chongqing Municipality Party Secretary Bo Xilai fell from grace, exposing at least one serious rift in the leadership, raising questions about the unity and probity of China's remaining leaders, and, because of Bo's ties to senior military figures, raising questions about the loyalty of parts of the military to the central Party authorities (Lawrence and Martin, 2013).

At Chinese county level, Guo (2009) argues that local leaders in contemporary China have both the necessary incentive and sufficient capacity to implement economic and fiscal strategies in their jurisdictions. As the Party's obsession with economic growth brought forth greater emphasis on local leaders' political achievement ("Zhengji"), one of the consequences of the cadre responsibility system² is that local leaders start to focus on more quantifiable and easily measurable targets such as large-scale development projects to impress their superiors with their economic achievements. Such projects are also called "leader promotion projects". More

² The "cadre responsibility system" introduced from the provincial level down has held local leaders responsible for the economic conditions of their jurisdiction.

importantly, the relationship between Chinese local leaders and their superiors resembles a standard principal-agent problem, in which the talent, competence, and even effort of the agents are not directly observable (Stiglitz, 2002). Because the superiors lack complete information on local leaders' ability, and continuous monitoring of subordinates' effort is too costly, large-scale development projects becomes not only more visible and quantifiable, but also more reliable in terms of measuring the agents' effort and competence. From the superiors' perspective, precisely because large development projects are so costly, they indicate the desirable competence and diligent effort of local leaders to generate and extract sufficient resources in the local region to help pay for them. Last but not least, according to the classic career-concerns model, it is rational for local leaders to make effort on improving their performance measures. Because in the "labor market" of this political organization, a high performance raises the perception of a person's ability, and translates into future job opportunities within or outside the organization³ (Dewatripont, Jewitt, and Tirole 1999, 201). The empirical study implies that Chinese local leaders strategically accelerate government spending at crucial moments during their tenure, specifically when their chances of promotion in the following year are the highest: their third and fourth years in tenure.

By employing spatial econometrics, Yu, Zhou and Zhu (2013) presented evidence that local officials in China indeed engage in tournament competition by strategically leveraging investment. In their simple model, local officials have incentives to leverage total investment above the optimal level to increase their chances of promotion, while on the other hand, costs will occur to local officials due to additional efforts to deal with issues including environmental damage, potential

³ Prior to 1990s, Chinese government officials have few options outside the internal political labor market. If a provincial leader is separated from the government hierarchy, it is very unlikely for her/him to find a job elsewhere. However, since the mid-1990s, China's private sector, relatively free from the Party's control, has grown into a large employer in the labor market (Li&Zhou, 2004).

reduction in future growth, and other concerns. In other studies, Pan (2013) finds empirical evidence that the goals of local officials vary with political tenure cycle: local cadres tend to highlight distribution of public and private goods when first taking office, and focus on showcasing their economic and fiscal achievements at the end of their political term.

Chapter 4

Rank-Order Tournament Theory Model

4.1 Basic model

Rank-order tournaments with risk neutrality in Chinese government hierarchy

The competition among local officials is mostly likely to be a tournament for its evaluation and reward system. In a tournament scheme, prizes are paid to winners and losers of the labor market contests, and performance incentives are set by attempts to win the contest. In Chinese cadre personal system, promotion from provincial level to higher ranks in the central government can be viewed as winning the contest, where the increased benefits are not a reflection of his or her improved productivity in one day, but rather to induce all other individuals to perform appropriately when they are in lower hierarchy positions. Such personal benefits may include higher salaries, executive power that has major influence on resource allocations, rent-seeking opportunities, and other welfare associated with the position. All local officials act as utility maximizers or as if they were risk neutral. It turns out that the official's investment level depends on the spread between the winning and losing prizes, and as well as their princeling status, or more generally their family background.

Based on the model proposed by Lazear and Rosen (1981), this paper considers the incentive of Chinese local officials in terms of their career development and lifetime productivity. The official's lifetime output, which refers to his total political achievements, is a random variable with distribution affected both by himself and his family background. In particular, officials are allowed to control the mean of the distribution by investing in costly

skills prior to entering the government. Family background and connections come into play by influencing the locations of officials' next appointments to help them claim credit for preexisting growth trends, which overstates the succeeding official's output on paper for selection bias. Such predetermined family background is considered as a life-persistent multiplier, built in the official j 's total career achievements or output q_j

$$q_j = t_j \mu_j + \varepsilon_j \quad (1)$$

Where t_j is the princeling status factor and μ_j is the level of investment, a measure of skill chosen by the official prior to the realization of the random component, ε_j . The random variable ε_j is a luck or ability factor that cannot be controlled by the official, such as intelligence, with mean zero and variance σ^2 , and its effect is revealed slowly over the official's lifetime. The average skill μ_j is produced at cost $C(\mu)$, with C' and $C'' > 0$.

Starting from the simple two-player tournament, I analyze the best-response strategies of contestants given the fixed prize R_1 to the winner and a fixed prize R_2 to the loser. I first assume the contest is purely meritocratic and the probability of winning only depends on the measured total output of the contestant. Then I add specific constraints of the political advancement on Chinese provincial level to higher into the model. The (R_1, R_2) represents the benefits associated with the winning and losing situations, or the improved welfare of being promoted or not. All essential aspects of the problem can readily generalize to any number of contestants.

Assuming that both contestants have the same cost of investment $C(\mu)$, so that their behavior is identical and their choice of μ alone depends on their utility maximization strategy as opposed to others' behaviors. Then, a contestant's expected utility (welfare) is

$$\begin{aligned}
E(U) &= (P)[R_1 - C(\mu)] + (1 - p)[R_2 - C(\mu)] \\
&= PR_1 + (1 - P)R_2 - C(\mu)
\end{aligned} \tag{2}$$

Where P is the probability of winning when game is solely meritocratic, and

$$\begin{aligned}
P &= \text{prob}(q_j > q_k) = \text{prob}(t_j\mu_j - t_k\mu_k > \varepsilon_k - \varepsilon_j) \\
&= \text{prob}(t_j\mu_j - t_k\mu_k > \delta) = G(t_j\mu_j - t_k\mu_k)
\end{aligned} \tag{3}$$

Where $\delta \equiv \varepsilon_k - \varepsilon_j$, and $G(\cdot)$ is the cumulative density function of δ with $E(\delta) = 0$. Each player chooses μ_i to maximize utility equation (2), which implies

$$(R_1 - R_2) \frac{\partial P}{\partial \mu_i} - C'(\mu_i) = 0 \tag{4}$$

The Cournot best response occurs when each contestant seeks to maximize his or her own utility given the behaviors of other contestants. Therefore, player j will take μ_k as given in determining his or her investment, and vice versa for player k. It then follows from (3) that for player j,

$$\frac{\partial P}{\partial \mu_j} = \frac{\partial G(t_j\mu_j - t_k\mu_k)}{\partial \mu_j} = t_j g(t_j\mu_j - t_k\mu_k) \tag{5}$$

Substituting (5) to (4) yields best response function for player j,

$$t_j(R_1 - R_2)g(t_j\mu_j - t_k\mu_k) = C'(\mu_j) \tag{6}$$

Player k's response function follows the same form.

To interpret (6), one may see the left side as the marginal return of playing this game, which depends on the probability of winning given certain level of investment, and the right side as marginal cost. It turns out the better family background (higher t_j) the official has, the more investment effort he would be willing to make due to higher marginal return of his effort. In other words, if the official knows in advance that he or she is more likely to be promoted due to his princeling status and political connections, he or she will have more incentive for skill

acquisition prior to coming into the position, because he knows the likelihood of his investments to be paid off in the future is higher. Following this logic, if the spread between the winning and losing prizes is larger, investment incentives is also higher, because once the official wins the contest, the investment can be paid off shortly.

Hypothesis tests on the effect of princeling status on investment incentive and probability of being promoted:

1. Officials with princeling status tend to invest more on education during their early age.
2. Officials with princeling status tend to be sent to provinces with either high historical economic growth or problematic economic situations.
3. Princeling status has a positive effect on the likelihood of being promoted.

4.2 Adjusted Model:

Rank-order tournaments with constraints in Chinese personnel system

While the above shows the investment incentive of a contestant in a performance-based promotion system with selection bias incorporated, Chinese personnel system has more complications than that. In 1980, the CCP officially proposed abrogation of the lifetime appointment of party and government officials, and installed a mandatory retirement system. Since 1982, provincial leaders are required to retire at the age of 65 if they are not promoted to higher positions in the central government. Nonetheless, administrative experience is also very important in consideration of promotion (Shih, Adolph and Liu, 2012), and it is not difficult to argue why a newly promoted official should not be promoted again in the very first years of the new position. Therefore, timing becomes especially important for local leaders to show their

capability and boost the chance of promotion. In fact, Guo (2009) found that Chinese county-level leaders time the highest growth in government expenditures to strategically coincide with their third and fourth years in tenure.

A simple analysis shows a trend of relative government expenditure growth over the tenure of provincial leaders, from 1997 to 2012 (Figure 2). On average, provincial leaders are more likely to increase expenditure in the first 4 years with growth rate slowing down, and reduce expenditure from year 4 to year 8, followed by a sharp increase from year 8 to year 10, and then drop to a low expenditure thereafter.

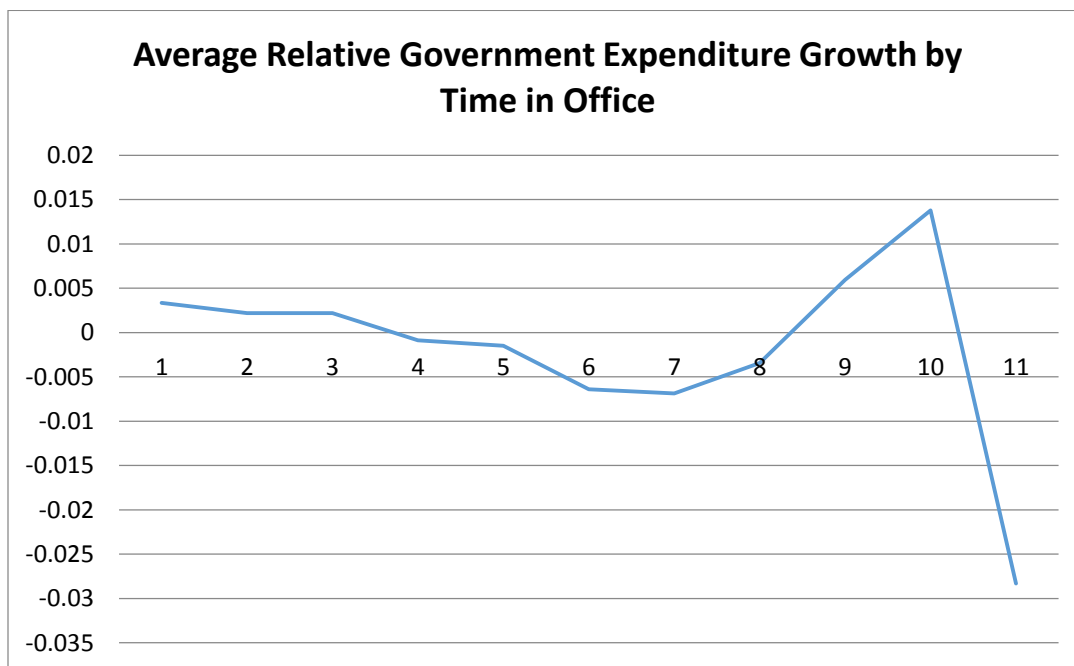


Figure 2. Relative government expenditure growth by time in office, 1997 to 2012

Since age and tenure experience are important factors in promotion consideration, following (3) the probability of being promoted can be adjusted to

$$\begin{aligned}
 P(\text{promotion}) &= \text{prob}(q_j > q_k) + \theta(\text{Age}_j) + \varphi(T_j) \\
 &= G(t_j\mu_j - t_k\mu_k) + \theta(\text{Age}_j) + \varphi(T_j)
 \end{aligned} \tag{7}$$

Where $prob(q_j > q_k)$ depends on family background, t_j , and level of investment on skills, μ_j . T is the variable “time in office”, which is the number of years the provincial leader has been in office. For instance, if a party secretary came to office in 2001, then his “time in office” variable would take the value of “1” for 2001, value of “2” for 2002, value of “3” for 2003, and so on. If he or she leaves the position in 2004, the variable takes back on value of “1”. If year 1997 is already the 5th year of a party secretary in office, then the variable takes a value of “5”.

Chapter 5

Data

Together with Dr. Xun Cao in the Department of Political Science at Penn State University, we collected a comprehensive database to include the biographies, performance measures, and political mobility for the top two provincial leaders, the party secretary and the government chairman, from 1997 to 2012. The biographies include variables of name, gender, age, birth year, birth place, central committee status, princeling status, education level, studying abroad, and local status. Princeling status indicates whether the official is child of a ministerial level official or above. Local status shows whether the jurisdiction (province, municipality, and autonomous region) is where the official was born and grew up in. This factor is considered because “localism” in China is a charge against local leaders who defend local interests at the expense of central policies, or national interest, which is an indication of disloyalty associated with higher chance of being demoted or dismissed. In this case, local status may or may not have influence on the political mobility of the official.

The performance measures include local government revenue and expenditure, provincial GDP, government deficit ratio, and large-scale municipal projects that receive support from World Bank. I created the relative performance scores by subtracting the average performance from each province’s growth rate in each year. This helps filter out shocks that are common to the whole peer group, such as tax-sharing policy with the central government in 1994 and global financial crises in 2008. Relative performance measures also better explain the political

advancement, as the game is essentially zero-sum and only officials who outperform their peers could advance.

Political mobility reflects the change in political statuses each year from 1997 to 2012: promotion, stay-in-power, and termination. Recall that termination is defined as any departure from position of secretary or governor not followed by a horizontal move or promotion. The variable “time in office” is the number of years the provincial leader has been in office. Guo (2009) found that Chinese county-level leaders time the highest growth in government expenditures to strategically coincide with their third and fourth years in tenure. Government expenditure and World Bank-supported development projects are included to reflect the strategies used by local leaders to impress their superiors with visible and quantifiable achievements.

Two potential limitations of the data are, first, it does not directly deal with the selection bias in the relative performance measures. It is important to notice that some officials might maneuver themselves into provinces with strong growth prospects, or be sent to turn problematic provinces around, and these officials should not receive credit for growth trends determined before they took office. Shih (et.al, 2012) addressed this problem by filtering out the predetermined growth trends in the performance scores, particularly by modeling the expected future provincial performance before each official taking office. The other limitation of the data is the incomplete list of large-scale development projects. Such projects are called “leader promotion projects” because they are in line with the interest of the superiors, and also tackle the problem of imperfect information in principal-agent problem by being observable and quantifiable. However, it is extremely hard to find accurate information about these projects, and therefore, an alternative is used to record only those projects that received commitments from

World Bank. This is in fact a quality indicator of the diligent effort of local leaders to extract resources from different places to improve local people's life standard, and manage to pay back in the future. The more projects sponsored by World Bank, the more competent the leader is in terms of making a difference and financing his or her projects. These projects⁴ include transportation, infrastructure, environment, sanitation, health, culture heritage, and other social welfare aspects.

On top of everything, this database is new and up to date, contributing to the existing biographical database developed by Shih, Shan, and Liu, which contains all Central Committee (CC) and Alternate Central Committee (ACC) members from 1921 to 2002.

⁴ Implementing Agency is controlled to: Provincial and City-level Government, Development and Reform Commission, Financial Bureau, Communication Department, Construction Department, Waterway Bureau, Environmental Protection Bureau, Project Management Office (PMO), Department of Human Resource and Social Security. National and enterprise projects are excluded.

Chapter 6

Empirical Analysis

To test Hypothesis 1, I run a regression with education as dependent variable, princeling status and birth year as independent variables. It turns out no significant positive effect of princeling status on governor's education investment level. However, it should be noticed that all the governors with princeling status have at least college degree, and the two most important princes, Xi and Bo, have post-graduate degrees.

- (1) Hypothesis 1: officials with princeling status tend to invest more on education during their early age.

$$Edu_i = \beta_0 + \beta_1 Birth_i + \beta_2 Prince_i + \varepsilon_i$$

Where Edu_i is the education level coded as 0=less than high school, 1=high school or its equivalents, 2=college, 3=post-graduate degree, $Birth_i$ is the birth year of governor i , and $Prince_i$ is the princeling status of governor i 0=no, 1=yes.

Source	SS	df	MS	Number of obs = 198		
Model	18.1088286	2	9.05441432	F(2, 195) =	39.01	
Residual	45.2649087	195	.232127737	Prob > F =	0.0000	
Total	63.3737374	197	.321694098	R-squared =	0.2857	
				Adj R-squared =	0.2784	
				Root MSE =	.4818	

education	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
birthyr	.0413396	.0046815	8.83	0.000	.0321068	.0505724
prince	.0934619	.1855294	0.50	0.615	-.2724399	.4593638
_cons	-78.1542	9.105487	-8.58	0.000	-96.11208	-60.19632

Table 1. Effect of princeling status on governors' education investment level

(2) Hypothesis 2: officials with princeling status tend to be sent to provinces with either high historical economic growth or problematic economic situations.

Figure 3 highlights the jurisdictions of all princeling governors during the period of 1997 to 2012. Among these provinces, most of them locate at the coastal area with high economic growth potential after China reforms and opens its economy (1978--). Table 2 below shows the growth trends of some provinces before princeling-governors taking office. One can see that these provinces share extraordinarily high growth rates in the five years prior to their taking office. Particularly (Figure 4), Fujian province suffered a continuous drop in economic performance until Xi Jinping (president of China from 2012) took office and realized a turning point from 2000 to 2002.



Figure 3. Jurisdictions of princeling governors, 1997 to 2012

Name	Year	Province	Average growth rate in past 5 years prior to taking office	Linearly fitted change in growth rate	R ²
Xi Jinping	2000-2002	Fujian	15.93%	- 4.72%	0.948
Xi Jinping	2003-2007	Zhejiang	11.35%	+ 2.1%	0.875
Yu Zhengsheng	2008-2012	Shanghai	16.85%	+ 0.31%	0.035
Bo Xilai	2008-2011	Chongqing	15.96%	+ 0.44%	0.051
Wang Qishan	2004-2007	Beijing	16.08%	+ 0.51%	0.152

Table 2. Growth trends of provinces before princeling-governors took office

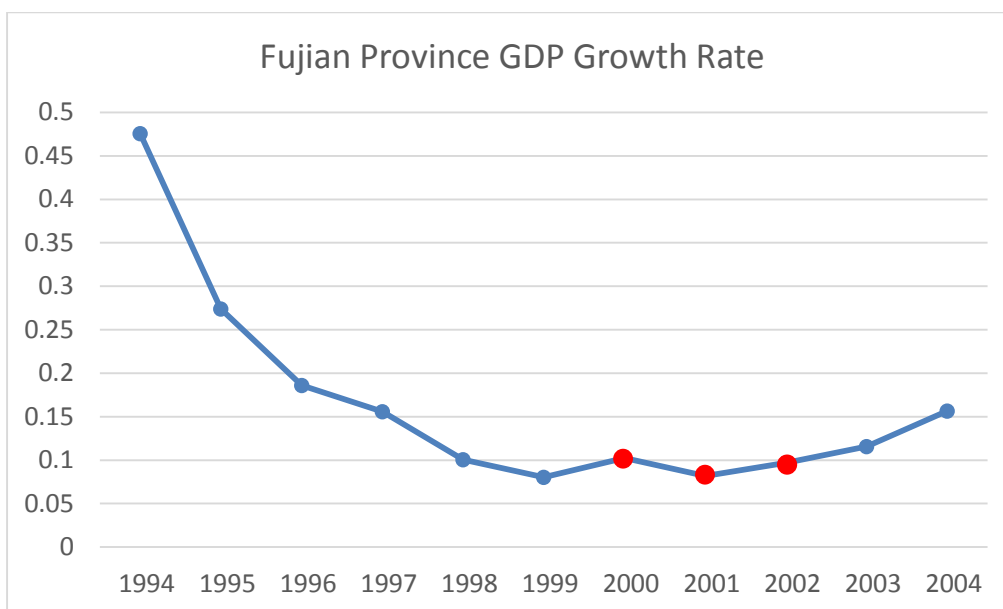


Figure 4. Fujian Province GDP Growth Rate, Xi's performance highlighted in red

This turning point could be a result of Xi's extraordinary competence due to his early investment in his education and skills. It could also be driven by extra subsidies from central government aiming at building up Xi's political records. Or be the result of both. In order to further study the cause of this turning point, one could start from looking at central government's

tax subsidies and other types of support to Fujian Province. However, data from internet are extremely limited and access may be restricted, at least for the case of this research.

(3) Hypothesis: Princeling status has a positive effect on the likelihood of being promoted.

6.1 Fit in the Base Model

To measure what affect the likelihood of being promoted, I develop the following multinomial logistic regression model from the tournament base model discussed above.

$$P_i = \beta_0 + \beta_1 (Education_i) + \beta_2 (Prince_i) + \beta_3 (Local_{i,j}) + \beta_4 (Relative\ GDP\ Growth_{i,j}) + \beta_5 (Relative\ Expenditure\ Growth_{i,j}) + u_{i,j}$$

Where P_i represents the political mobility of the official i during the period: it takes the value of -1, 0, and 1 respectively for termination, stay-in-power, and promotion. The explanatory variables include official i 's highest education level, princeling status, local status, relative GDP growth and relative government expenditure growth in year j , and error term.

```

Multinomial logistic regression          Number of obs   =       928
                                         LR chi2(10)     =       87.90
                                         Prob > chi2     =       0.0000
Log likelihood = -545.63804             Pseudo R2      =       0.0745
    
```

prom		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
-1							
	education	-1.11606	.2697907	-4.14	0.000	-1.64484	-.5872804
	prince	.4443299	.5621729	0.79	0.429	-.6575088	1.546169
	local	.3903882	.2488988	1.57	0.117	-.0974444	.8782208
	relative_gdp_growth	-.6814201	3.737673	-0.18	0.855	-8.007125	6.644285
	relative_exp_growth	.7724217	1.637529	0.47	0.637	-2.437075	3.981919
	_cons	.1819286	.586301	0.31	0.756	-.9672003	1.331057
0	(base outcome)						
1							
	education	.6353259	.225894	2.81	0.005	.1925819	1.07807
	prince	1.67878	.335747	5.00	0.000	1.020728	2.336832
	local	-1.581116	.4720658	-3.35	0.001	-2.506348	-.6558845
	relative_gdp_growth	7.462652	3.592697	2.08	0.038	.4210957	14.50421
	relative_exp_growth	-2.800494	1.842273	-1.52	0.128	-6.411283	.8102944
	_cons	-3.566987	.5654891	-6.31	0.000	-4.675325	-2.458648

Table 3. Factors in the likelihood of promotion

The result shows a strong positive effect of relative GDP growth on likelihood of promotion. However, the effect of relative GDP growth on likelihood of termination is not significant at all, which indicates that economic performance only matters for promotion and governors do not have to worry about being terminated due to poor economic performance. Princeling status affects positively the likelihood of promotion but does not show significant influence on termination. Meanwhile, local status⁵ seems to hinder promotion and expedite termination.

⁵ Local status shows whether the jurisdiction (province, municipality, and autonomous region) is where the official was born and grew up in. This factor is considered because “localism” in China is a charge against local leaders who defend local interests at the expense of central policies, or national interest, which is an indication of disloyalty associated with higher chance of being demoted or dismissed.

To test whether “leader promotion projects” influences the likelihood of promotion, I add the variable “Number of Municipal Project Sponsored by World Bank” in the model.

```
Multinomial logistic regression          Number of obs   =      928
                                         LR chi2(12)     =      90.21
                                         Prob > chi2     =      0.0000
Log likelihood = -544.48309              Pseudo R2       =      0.0765
```

prom		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
-1							
	education	-1.116976	.2705862	-4.13	0.000	-1.647315	-.5866364
	prince	.4439242	.5622169	0.79	0.430	-.6580006	1.545849
	local	.3918821	.2495668	1.57	0.116	-.0972599	.881024
	relative_gdp_growth	-.687563	3.739652	-0.18	0.854	-8.017146	6.64202
	relative_exp_growth	.7744535	1.637141	0.47	0.636	-2.434284	3.983191
	num_municiple	-.0212319	.2514793	-0.08	0.933	-.5141222	.4716584
	_cons	.1882366	.5937255	0.32	0.751	-.975444	1.351917
0		(base outcome)					
1							
	education	.6498001	.2268531	2.86	0.004	.2051761	1.094424
	prince	1.674825	.3364577	4.98	0.000	1.01538	2.33427
	local	-1.56254	.4725117	-3.31	0.001	-2.488646	-.6364345
	relative_gdp_growth	7.33716	3.585877	2.05	0.041	.3089691	14.36535
	relative_exp_growth	-2.842341	1.837336	-1.55	0.122	-6.443453	.7587708
	num_municiple	-.4315597	.2990597	-1.44	0.149	-1.017706	.1545866
	_cons	-3.524897	.5675042	-6.21	0.000	-4.637185	-2.41261

Table 4. Factors in the likelihood of promotion, Number of Municipal Project Sponsored by World Bank added into the model

The new variable turns out not having any significant effect that would align with assumption on promotion. One reason might be that World Bank is more likely to support social-welfare projects in regions with economic difficulty. As discussed above, governors with factional ties or princeling status, who have a higher likelihood of promotion, are unlikely to be appointed to such underdeveloped areas. Therefore, governors in these underdeveloped areas suffer a “natural disadvantage” in competing for promotion.

6.2 Fit in the Adjusted Model

The model is adjusted to reflect the effects of age and tenure experience at a position:

$$P_i = \beta_0 + \beta_1 (\text{Education}_i) + \beta_2 (\text{Prince}_i) + \beta_3 (\text{Local}_{i,j}) + \beta_4 (\text{Relative GDP Growth}_{i,j}) + \beta_5 (\text{Relative Expenditure Growth}_{i,j}) + \beta_6 (\text{Age}_{i,j}) + \beta_7 (\text{Time_in_office}_{i,j}) + u_{i,j}$$

Multinomial logistic regression	Number of obs	=	928
	LR chi2(14)	=	235.45
	Prob > chi2	=	0.0000
Log likelihood = -471.86161	Pseudo R2	=	0.1997

	prom	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
-1							
	education	-.7350609	.2913923	-2.52	0.012	-1.306179	-.1639424
	prince	.1889087	.5994404	0.32	0.753	-.9859728	1.36379
	local	.4165815	.2762929	1.51	0.132	-.1249426	.9581057
	relative_gdp_growth	1.571337	4.003519	0.39	0.695	-6.275417	9.41809
	relative_exp_growth	2.377094	1.944199	1.22	0.221	-1.433467	6.187655
	age	.3151184	.0522088	6.04	0.000	.2127911	.4174458
	timeinoffice	.1420505	.0572629	2.48	0.013	.0298174	.2542836
	_cons	-20.35349	3.251676	-6.26	0.000	-26.72665	-13.98032
0		(base outcome)					
1							
	education	.3361807	.2477142	1.36	0.175	-.1493303	.8216917
	prince	1.716502	.3583292	4.79	0.000	1.01419	2.418814
	local	-1.775801	.4836341	-3.67	0.000	-2.723706	-.8278955
	relative_gdp_growth	8.370094	3.659462	2.29	0.022	1.19768	15.54251
	relative_exp_growth	-2.646953	1.856768	-1.43	0.154	-6.286151	.9922458
	age	-.1389145	.0281342	-4.94	0.000	-.1940566	-.0837724
	timeinoffice	.3553372	.0534639	6.65	0.000	.25055	.4601245
	_cons	3.933182	1.791151	2.20	0.028	.4225905	7.443774

Age turns out to affect likelihood of promotion negatively, meaning younger governors have a higher chance of being promoted. Time in office seems to have positive effect on both promotion and termination. To explain this, longer “time in office” is usually associated with better experience, and older age as well.

Chapter 7

Conclusion

To conclude, from the tournament framework that considers the career incentive of Chinese local officials, I find that official's investment level depends on both their family background and the spread between the winning and losing prizes. It predicts the better family background the official has, the more investment effort he would be willing to make due to higher marginal return of his effort. This means officials who know in advance that they have higher chance of being promoted due to their princeling status and political connections, will have stronger incentive for skill acquisition prior to taking on the position, because their investments are expected to be paid off in the near future.

Using the data collected for top two officials at Chinese provincial level from 1997 to 2012, I find no significant positive effect of princeling status on governor's education investment level. However, it should be noticed that all the governors with princeling status have at least college degrees, and the two most important princes, Xi and Bo, have post-graduate degrees. The data analysis also suggests officials with princeling status tend to be sent to provinces with high historical economic growth or in problematic economic situations. Finally, I find relative GDP growth has a strong positive effect on promotion, but it has no significant effect on termination, which indicates that economic performance only matters for promotion and governors should have little to worry about being terminated due to poor economic performance. Princeling status increases the chance of being promoted.

Age turns out to affect likelihood of promotion negatively, meaning younger governors have a higher chance of being promoted. Time in office seems to have positive effect on both

promotion and termination. To explain this, longer “time in office” is usually associated with better experience, and older age as well.

One important limitation of this paper is the lack of data on large-scale development projects in each province. Such projects are called “leader promotion projects” because they are in line with the interest of the superiors, and also tackle the problem of imperfect information in principal-agent problem by being observable and quantifiable. However, it is extremely hard to find accurate information about these projects. I use the alternative to include only projects receiving commitments from World Bank, but this method could produce noisy results that reflect endogenous effects. Because World Bank is more likely to support social-welfare projects in regions with economic difficulty, and governors with factional ties or princeling status are found unlikely to be appointed to these areas. Since princeling status increases the chance of promotion, governors in those underdeveloped areas suffer a “natural disadvantage” in competing for promotion.

Appendix A

Data Code Note

Promotion/Termination

0=Departure from position of secretary or governor not followed by a horizontal move (power sustained) or promotion. This includes retirement, demotion, dismissal, persecution, and death.

1=Provincial Governor, Provincial CPC secretary

2=Promotion to higher level: membership of the State Council, the vice-premiership, the premiership and membership of the Politburo or the Politburo Standing Committee.

Education Level (edu):

0=less than high school

1=high school or its equivalents

2=college

3=post-graduate degree

Princeling-Child of a ministerial level official or above (prince):

0=no

1=yes

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