BUREAUCRACY AND NETWORKS: THE POLITICS OF CAREER MOBILITY IN LARGE ORGANIZATIONAL SYSTEMS

A DISSERTATION

SUBMITTED TO THE DEPARTMENT OF SOCIOLOGY
AND THE COMMITTEE ON GRADUATE STUDIES

OF STANFORD UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

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JULY 2018

This dissertation is online at: http://purl.stanford.edu/fw059tm5433

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Abstract

Career mobility in state bureaucracy is an important topic with key implications for policy, development, and labor market dynamics. Existing literature on organizations emphasizes the importance of experience and network connections, whereas careers develop as linear progression in internal labor markets. The standard theories, however, commonly suffer from three issues. First, whereas network research focuses on static effects of connections, I point out the dynamic impacts of connections: the same tie that used to bring career benefits carry inherent risks in an evolving authority structure. Second, whereas the assumption of linear job ladders prevails in internal labor market theories, I find that such functional ladders rarely exist in large bureaucracies. Third, one of the most challenging issues in organizational research is the limited scope condition, as studies typically focus on a single market or institutional setting. Using unique administrative data from the state bureaucracy of China and the Indian Administrative Service, I tackle these theoretical problems with novel empirical strategies, combining techniques from network analysis, quasi-experiment, and stochastic models. The findings challenge the standard theories, bringing out the contextual variations between organizations in different political systems.

Acknowledgements

This dissertation represents my intellectual journey in tackling a long-standing problem of the relationships between bureaucracy, career, and state development. It is a collective effort that involves the continuous support from my advisors, as well as help and encouragement from my friends and family. I am particularly indebted to my advisor, Professor Xueguang Zhou, who invested an exceptional amount of time and energy in helping me develop and refine research ideas. Without his guidance, I would not have learned and improved to the current level, and the data collection for this project would not have happened in the first place.

At the same time, I am very much indebted to my co-advisor, Professor Andrew Walder, who taught me how to write a paper through our collaborations. Professor Woody Powell, who always provided excellent feedback on my papers as well as during my numerous presentations at his workshops. Professor Matthew Jackson has been an inspiration ever since I took his class, which also kick-started my research ideas in political networks. I am sincerely grateful that Professors Xueguang Zhou, Andrew Walder, Woody Powell, Matthew Jackson, and Amir Goldberg agreed to serve on my dissertation committee. In addition, I appreciate the critical comments from Professors Mark Granovetter, Jean Oi, Ezra Zuckerman, as well as workshop participants at Stanford University.

The data collection and management for this project involve team effort, thanks to the contributions from Wei Zhao, Song Yang, Yun Ai, Jianhua Ge, Huijun Gu, Lan Li, Ling Zhu, and our excellent research assistants. I am very much obliged to Professor Sharique Hasan, who generously shared with me his data on the Indian Administrative Service.

The research in this dissertation has received generous funding support from the Stanford Center on Philanthropy and Civil Society, the Shorenstein APARC, the Stanford Center for International Development, and the Institute for Research in the Social Sciences.

A PhD journey is much more than academics and research. Spending more than 5 years, working towards solving a problem comes with its fair share of frustrations, anxieties and moments when you do not want to continue. Friends who help and support you to get over such moments form the unseen backbone of a research career. I would like to thank Jessica, Jacob, Yi, Gary, Bruno, Christof, Jean, Chen-pang, Ling, Ariela, Rekha, Yan, and many more for their kindness and support. I am also greatly indebted to Vaibhav, who has been my motivation for self-improvement, and whose support is instrumental in pursuing and finishing what I have started in graduate school.

Lastly, I would like to thank my parents, without whose limitless love, unconditional support, and continuous sacrifices I would not have ventured so far out in the world. My achievement is the fruit of their labor. I am certain that I will not be able to return even a small fraction of what they have done for me, although I will keep trying.

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Chapter 1. Introduction

Political institutions, particularly the state, have important implications on market economy and policy directions, which influence short-term prospects and long-term development. Whereas past studies emphasize the importance of personal relations in bureaucratic careers by contrasting the formal versus informal aspects, few delve upon the dynamic nature of connection, which reflects an underlying power structure with varied implications for career processes. This dynamic perspective is central to my analysis of organizational careers. Using unique archival data from the Chinese bureaucracy and the Indian Administrative Service, the dissertation presents a systematic comparison between two of the most important organizations from different polities and regimes. I investigate in three parts the evolving political relations and the rhythms of institutional change that shape and disrupt careers.

The first part studies the impact of sponsorship networks on career mobility. Whereas prior theories of sponsored mobility invariably emphasize the benefit of connections, I point out that connections are a double-edged sword: the same ties that used to bring career rewards also carry inherent risks in a changing authority structure. I interpret this phenomenon, which is substantiated by findings from a quasi-experimental design that analyzes individual mobility before and after political change, as a reflection of the evolving power structure. As sponsorship implies proximity to power, a sponsor's loss of power transforms the meaning of relationships and brings career penalty by the stigma of affiliation. The changing access to power suggests that network effects are time-varying.

An important issue that follows, however, is that when connections matter the most. My study shows that political elites use networks in their strategic actions of power consolidation, as the network effect spikes when a new leader assumes office. The dynamics of social and political relations in organizations, therefore, are contingent upon the rise and fall of authority figures on which individual careers are interdependent.

While network connections facilitate and disrupt mobility, individual trajectories are also shaped by career lines that reflect the underlying opportunity structure of a labor market. Existing studies on organizations and internal labor markets predominantly assume that career advancement approximates a linear progression along a hierarchical job ladder. This assumption, while taken-for-granted, is challenged by the observation that opportunities are unevenly distributed based on the political dynamics in organizations. The opportunity structure implies varied avenues of achievement, which contrast with the view of linear career progression. The second part of the dissertation examines this issue by delineating career lines in the Chinese bureaucracy, using novel computational methods and stochastic models. The analysis reveals that hierarchical ladders within functional lines are almost non-existent, whereas mobility typically follows lateral or downward moves among units along the administrative ladder. This implies alternative paths of career advancement, which is related to the institutional context of the bureaucracy in the centralization of power by the communist party.

As the first two parts focus on the Chinese bureaucracy, the empirical setting presents a challenge to theory generalization: To what extent do networks and career depend on the institutional and political environment of the Chinese bureaucracy? I examine this question with a comparative analysis of bureaucracies in China and India in

the third part, extending the theories developed until this point. By comparing the relative importance of career mechanisms such as specialization and political networks, I point out that different administrations follow similar logics in the political management of bureaucratic experience, although the relationships between loyalty- and experience-based careers differ by organizations. Whereas distinctive experiences are preferred in each bureaucracy, the civil services of China and India are both subject to political influences, which are distributed through personal networks and crystalized during leadership change. These commonalities and differences between the bureaucracies illuminate the political logics of bureaucratic control, as well as the institutional impacts on the relative importance of career mechanisms.

An underlying question that motivates this research, however, is the long-standing puzzle regarding the relationships between bureaucracy and development. As theory proposes that a Weberian state outperforms a patrimonial one subject to political interference (Evans and Rauch 1999), the developmental outcomes of China and India provide contradictory evidence and suggest that the empirical reality is far more complicated. Whereas this question is beyond the scope of the dissertation, the current project offers an initial glance into the phenomena of bureaucracy and political networks, which open up the possibilities of studying related topics such as state-business/society relationships, resources allocation during market transition, and the institutional support for growth and development across regimes. The research is thus a step towards understanding the role of bureaucracy in development, first through the lens of dynamic political relations in organizational careers.

Part I. Connection as a Double-Edged Sword:

Dynamic Effects of Political Networks in an Evolving Bureaucracy

Chapter 2. Political Networks and Career

Regardless of organizations and contexts, social and political networks lie at the heart of various processes that shape individual careers as an outcome of both formal and informal arrangements. The problem of relationships in formal organizations is exemplified in studies of bureaucracy, which follow a long tradition since Max Weber's characterization of the "iron cage" as an impersonalized machinery of rationalization (Weber 1978). This ideal type of organization, devoid of political influences, has been a target challenged by studies that emphasize informal, personalized practices in the bureaucracy (Blau 1969; Selznick 1943, 1949). What is less explored is the issue on how multiple processes jointly shape career outcomes. Even less understood is the dynamic impacts of networks: the same connections have varying meanings over time due to the changing organizational context. Their associated benefits could disappear, and even reverse into a liability under different circumstances (Siegel 2007). These issues raise the questions on the implications of connections, such as what they mean in relation to the organizational context and career process in a dynamic way.

Among the hierarchical organizations that have been studied, the Chinese bureaucracy presents a unique case as one of the largest institutions in the world: the scale of its employees is equivalent to the population of a major European country.[1] The structure

[1] Based on the 2015 official statistics, the Chinese bureaucracy has 7 million direct employees, and over 60 million affiliates. The population of the United Kingdom is 65 million in 2015. See Ministry of Human Resources and Social Security. 2015. "Statistical Communiqué on Labor and Social Security Development in 2015." Retrieved February 20th, 2017 (http://www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/buneiyaowen/201605/t20160530_240967.html).

of the bureaucracy has classical Weberian features: well-defined offices and roles with authority tied to formal positions, career advancement as a progression along hierarchical ladders, and institutionalized management practices (Harding 1981; Lieberthal and Lampton 1992; Zhou 1995). At the same time, the dual authorities of the Chinese Communist Party (CCP) and the government are central to the organization of activities, rendering the bureaucracy both a political and administrative machinery. This duality of political dominance and administrative competency provides the institutional foundation for multiple considerations in personnel management, leading to a joint emphasis on both loyalty and merit in elite selection (Landry, Lü, and Duan 2018).

Whereas the key mobility mechanisms appear to be in contention, what is lacking is the relationship and synthesis of these contrasting aspects: formal requirements maintain the façade of a competitive process, but the key concern of institutional rulers remains domination through the consolidation and expansion of power. Loyalty and competency are not necessarily at odds, as they satisfy requirements in different domains, and one aspect can transform into the other. The important question, then, is that how this transformation takes place. Studies on bureaucratic appointments in various regimes, such as the U.S. and India, suggest that the top bureaucrats are typically political appointees (Calvert, McCubbins, and Weingast 1989; Iyer and Mani 2012; Wood and Waterman 1991). While this is often interpreted as an institutional arrangement that exercises political control or facilitates coordination between bureaucrats and politicians, it also implies that those with powerful connections are strategically assigned to high-stakes areas, which are critical to the maintenance of institutional or individual authority. These coveted jobs, in turn, make the appointees appear more qualified by their positional importance, while

providing rich opportunities of future advancement. Political networks can thus convert into legitimate experience that enhances one's perceived merit, specifically through strategic appointment, which leads to differential prospects of those with varied connections.

An additional issue regarding political networks is their time-sensitive nature. Existing studies typically emphasize the static effects of political ties, such as their associated benefits (Haveman et al. 2017) or perceived risks during a slice of period (Pontikes, Negro, and Rao 2010). Connection to the same person, however, has varied meanings over time, depending on the evolving institutional conditions, in which the person may have changing hierarchical positions and different accesses to power and resources. Timing is critical, as elite recruitment is subject to bureaucratic clocks and political cycles, which give rise to corresponding calculations and expectations of the positional incumbents. Within the limited range of a leader's tenure, power consolidation relies on early recruitment of loyalists, and replacement of those who are deemed untrustworthy. When to foster a supportive environment, and who are to be included or excluded in elite selection, are the key concerns in personnel appointment, resulting in varied implications of connections over time. While this means emerging opportunities for a new cohort of officials, it is also detrimental to those associated with prior authorities, who are possibly perceived as obsolete and obstructive to the implementation of new policies (Zhou, Tuma, and Moen 1996; Zhou 2001:1040). An important implication, therefore, is that the connections that used to bring rewards carry significant risks in an evolving authority structure, depending on the relationships, as well as the ideological alignment, between cohorts of elite officials. This phenomenon is especially salient in a

politically charged bureaucracy, in which an authority's downfall can impede the careers of subordinates, due to the stigma of affiliation and loss of access to resources.

In Part I, I address these key issues regarding political connections and career mobility in an analysis of the Chinese civil service. Using network analysis on unique archival records from a major province, I seek to answer two questions. First, how do sponsorship and formal processes, such as requirement on career experience, complement each other in facilitating mobility? In approaching this question, I point out that political networks are an integral part of the bureaucracy that interacts with institutional processes. The conversion of network capital into legitimate experience makes sponsored individuals appear more qualified than others, as elite connections channel resources and opportunities, facilitating strategic placement of protégés that bring valued experience as well as enhanced prospect. Second, how does an evolving power structure impact individual careers, and what are the changing implications of connections over time? Using leadership transition in a quasi-experimental design, I demonstrate the disruptive impact of connections that used to produce career rewards. Proximity to power brings temporary glory; however, it is associated with inherent risks, crystalized during transitional periods, that undermine careers in the long run.

2.1 Sponsorship from Network Connections

A long-standing concept in social mobility is sponsorship, which emphasizes the importance of individual background to status attainment. Elites in a sponsored mobility system are recruited by established authorities based on selected criteria, such as socioeconomic status or class origin, which implies preferential treatment of members from

certain groups that are perceived loyal or have close relationships to those with power and resources (Turner 1960). In political networks, sponsorship is rooted in the hierarchical relations between subordinates and superiors, which are based on status differentials in formal positions as well as the superiors' control of resources. Due to one party's dependence on the other for career rewards and punishments, the relationship is power-dependent with explicit displays of loyalty, deference, and control (Blau 1963; Emerson 1962).

Sponsored mobility, in contrast to the open contest in tournament mobility (Rosenbaum 1979, 1984), is endemic to systems in which a single authority or hierarchy controls recruitment and monopolizes elite credentials (Turner 1960). This means that the mobility pattern depends on the authority context of an organization, which is the institutional framework in which social relations are embedded. As organizations provide the foci of normative behaviors and informal associations (Feld 1981), workplace interactions generate familiarity to varied circles, while reflecting one's political identity. Connections to high-status players, especially those holding powerful positions, signal one's elite insider status, providing accesses to information, resources, opportunities, and social support (Burt 2004; Podolny 2001; Podolny and Baron 1997).

The Chinese civil service, in which the Communist Party controls access to job assignment, is arguably a sponsored mobility system. Past studies developed in this context view sponsorship as either an organizational phenomenon or product of factionalism, both of which differ from the network conceptualization. Sponsorship, from an organizational perspective, is a systemic feature of the party's "principled" particularism of those who display loyalty and initiative, specifically through early party membership. This political

credential, on the one hand, explicitly requires motivation and effort, and on the other hand serves as a screening device that differentially promotes individuals in the administrative track based on their relationships to the party (Li and Walder 2001; Walder 1986, 1995; Walder, Li, and Treiman 2000). Whereas the argument offers insight into the systemic origin of sponsorship as party patronage, it suffers from two critical issues: first, it downplays the importance of political connection, which facilitates the obtainment of both party credential and career advancement. In other words, the relationship between party membership and career advancement is predicated on individual connections that produce both phenomena. Second, party-based loyalty is less meaningful in administrative careers, in which the majority of elite cadres are communist party members (Walder 2004). Hence, it is likely that the screening of alternative signals, such as loyalty towards individuals, produces a stronger basis for particularistic treatments of officials.

Whereas the party controls career process in the Chinese bureaucracy, appointment decisions are made by individuals in authority positions. Connections to these authority figures lead to patronage factions, which provide a more fine-grained basis of sponsorship than party loyalty. Patronage factions are the intended consequences of political elites' strategic calculations: they exist to promote elite goals through interest alignment and collective action, and the favorable assignments of faction members are the leaders' maneuver in consolidating and expanding influence. Elite positions are shared among protégés of various leaders to maintain balance among competing groups (Dittmer 1995; Dittmer and Wu 1995; Nathan 1973; Pye 1995; Shih, Adolph, and Liu 2012). A critical issue regarding this line of arguments, which is not inherent to the network theory, is the assumption of interest alignment: an individual can have divergent interest from that of his

faction or being affiliated to multiple sponsors. This not only implies that the focal individual may not share each sponsor's interest, but also means that one can leverage multiple ties to play them off against one another (Burt 1992; Padgett and Ansell 1993). The career advancement of the person could be based on a compromise or consensus among competing groups, rather than the strength of each affiliation. Second, an additional difference between the network argument and factionalism is the distinction of political ties from interest groups: the association between connection and faction is not exact, as faction members may not all know each other, and those who are connected do not necessarily belong to the same group. This means that the factionalist argument provides a more restrictive view than the network perspective with stronger, and less realistic, assumptions about political connections.

The shared recognition by factionalism and the network perspective, however, is that sponsorship is the strategic action of authorities in elite recruitment. Particularistic treatment of protégés in career advancement not only fosters a sense of loyalty, but also expands the sponsors' influence by having trusted allies in important positions. This creates a hospitable environment for coordination and reinforces agent control in power sharing, while reducing conflict through career incentives (Huang 2002; Moe 1984). Recruitment of new elites is particularly important during leadership succession, when new incumbents would like to consolidate power through promotion of loyal supporters (Zheng 2000). Personnel reshuffling in elite recruitment disrupts and re-establishes the political order, while at the same time gives rise to emerging networks with new alliances and opportunities. The change brings instability to an evolving authority structure, as the rise

and fall of powerful individuals have cascading impacts on the political life chances of individuals in their network vicinities.

2.2 Strategic Appointment in Bureaucratic Mobility

Although it is well understood that sponsorship has critical impacts on job mobility, an important question remains that how it works in facilitating career advancement. Specifically, how do authorities make appointments to build up their protégés' careers? It has been observed that individuals with political connections are strategically appointed to important positions, which is a common practice in bureaucratic management and serves as a basis of political control (Iyer and Mani 2012; Wood and Waterman 1991). The career advancement of sponsored individuals is thus built on their strategic placement, which not only improves their career prospects but also consolidates their sponsors' power. This explanation, however, gives rise to two additional issues. The first is regarding the institutional basis of strategic appointment, as this common practice in civil services is likely to be a structural phenomenon. The second concern, however, is regarding the actual practices involved. How do authorities exercise their influence in job appointment?

Appointment in the Chinese bureaucracy follows a nomenklatura system, which is a list of offices and positions with different functionalities and political importance. The nomenklatura system provides an institutional basis for elite recruitment through job variation, and this structural arrangement reflects a distribution of power (Zhou 1995; Zhou, Tuma, and Moen 1997). Within each jurisdiction, there are more than 100 work units subordinate to the local CCP and government headquarters, as well as a wide range of social organizations and state-owned enterprises. Based on their strategic importance, the

units offer distinctive accesses to resources and opportunities. As important bureaus command key resources in the political and economic domains, local leaders have strong incentives to control them by appointing loyal supporters. The Organization Department, for instance, is one of the most influential units in the bureaucracy that oversees cadre management. The department director typically has close tie to the party secretary and serves as a standing member of the local CCP committee. Appointments to important units thus offer means of career reward for the maintenance and expansion of patronage networks (Burns 1994:472). Meanwhile, job assignment to marginalized bureaus entails limited prospect, as these units have fewer resources and opportunities available. The institutional basis of strategic appointment is thus built on the opportunities structure, in which work units offer differential prospects.

The influences of authorities in job assignment, however, come from consensus-making in the appointment process. Bureaucratic mobility typically involves promotion and lateral transfer, with the former being an upward move in administrative rank or job title, and the latter involving no rank change but appointment to a different office (Manion 1985). These events are tightly controlled by higher authorities through a "one-level-down" cadre management system, in which superiors of the immediate upper-level administration have the authority to appoint officials at positions of lower ranks (Landry 2008; Perry and Goldman 2009). The leading cadres in any work units are evaluated and appointed by the Organization Department, which keeps detailed dossiers that contain information related to their experiences, evaluations and appointment decisions (Edin 2003; Mertha 2005:799-800). The appointment process involves bargaining and consensus making among multiple sides. In filling a local bureau chief position, the bureau shall send a list of nominees to the

Organization Department at the next higher level, which in turn consults with the local CCP committee to make a final decision.[2] This means that candidate selection in a work unit is based on the joint decision-making among local leaders, higher-level authorities, as well as the focal unit. It is through this process that leaders at different levels can exercise influence by strategically appointing their supporters, which maintains sponsorship networks and advances the political interests of patrons.

Strategic appointment puts the politically connected in structurally advantaged positions and generates endogenous processes that facilitate their future advancement. The appointment of protégés to important jobs accrues to their experience and makes them more qualified in future contest. Oftentimes, a major promotion is preceded by movements among several key offices. For instance, the former provincial governor and CCP secretary of Hunan and Gansu, Xu Shousheng, used to be a local official in Jiangsu. After working for Li Yuanchao, who used to be the provincial CCP secretary of Jiangsu and later the vice president of China, Xu was appointed to several important offices, including the Provincial Organization Department, before promotion to the top leadership positions in two provinces. Through strategic appointments to key offices, Xu's stellar trajectory seems justifiable on the grounds of merit and experience. His political connection was converted into legitimate signals of competency that bring advantage in formal evaluation.

Hypothesis 1: Sponsorship connections to those holding powerful positions have a positive effect on strategic appointments to important jobs.

[2] Central Party Committee. 2002. "Regulations on the Work of Selecting and Appointing Leading Party and Government Cadres." Retrieved February 20th, 2017 (http://www.china.org.cn/english/congress/226530.htm).

Although powerful connections bring career rewards, the meanings of connections change over time. In an evolving authority structure, a sponsor may have changing positions with different amounts of power. This leads to the question that whether the benefit of political connections stays over time, and what happens to the subordinates once a sponsor loses power. The aforementioned figure, Xu Shousheng, was removed from the leadership role once his superior became unfavorable in the new administration. This illustrates the risks of connections in a changing authority context, in which the career trajectories of individuals are intertwined with the rise and fall of their sponsors.

2.3 Risks of Connections in a Destabilized Authority Structure

Whereas theory of sponsored mobility typically emphasizes the benefit of elite connection, a critical condition is often overlooked: connections are embedded in a changing authority structure, in which the control of access to power and status by any individual or elite class does not persist. Formal positions and informal influence are interdependent, while the changing positions of authorities indicate different degrees of control over others' careers. One's power is limited by institutional constraints, as an official's influence wanes when he or she is removed from an authority position due to tenure limits or rotation. This implies that the benefit of connection eventually dissolves when a sponsor loses power.

Patterns of mobility are systematically affected by the opportunity structures that create vacancies and chains of movement, which can result from institutional constraints and organizational changes (Haveman and Cohen 1994; Smith 1983; Stewman and Konda 1983; White 1970). Local leaders' tenure in the Chinese bureaucracy has specific terms, typically five years, beyond which the leaders should rotate elsewhere (Li and Zhou 2005).

As leaders of a city do not have decision-making power in another region, they have limited influence over the careers of individuals outside their jurisdiction. These institutional constraints mean that a sponsor's span of control is contained within limited time, as well as organizational and geographical boundaries. At the same time, they create room for power transition that destabilizes an existing authority structure.

The time-varying impacts of sponsorship further translate into risks, in addition to rewards, under changing circumstances (Siegel 2007). Both aspects, paradoxically, derive from the same reason: sponsorship is a control mechanism by the elites to ensure loyalty in creating a hospitable personnel and social context. As loyalty is inferred from one's connections, those associated with prior elites are viewed with suspicion by the incumbent authorities. The changing influences of networks suggest that career advancement is interdependent on the power of one's contacts. The risk is crystalized during leadership succession, which is a period of uncertainty typically followed by power consolidation with massive waves of turnover in lower levels of the bureaucracy (Dittmer 1990; Sandschneider 1985). As Dittmer (2003:912) points out, succession produces "a source of inordinate concern and occasional outbursts of concentrated, disruptive strife." The removal of cadres associated with prior administrations and recruitment of new elites transform an existing power structure, creating distinctive opportunities for cohorts of officials (Lampton 1987; Zhou 2001; Zhao and Zhou 2004). This type of bureaucratic renewal, however, is different from the regular retirement of old cohorts, since it is politically motivated rather than management routines.

The downfall of a sponsor may negatively affect the careers of subordinates, and the spillover effect suggests that the mobility of sponsors and subordinates are intertwined

regardless of merit. The inherent risks of connections, brought by political uncertainty during leadership transition, provide a rare glimpse into an evolving power structure that redistributes political life chances based on personal networks. For instance, a massive wave of promotion and retirement of local officials occurred around the time of presidential succession from Jiang Zemin to Hu Jintao in the late 2002 (Li and White 2003; Shambaugh 2001). Meanwhile, news reports provide detailed accounts of the downfall of high-profile officials during anti-corruption campaigns, who allegedly have close ties to the previous administration. The chain reaction, starting from leadership transition at the top, cascades down to the recruitment and replacement of officials at different levels. The rising elites and those who fall from grace are speculated to have come from the networks of leaders who gain and lose power. Events of leadership transition demonstrate the impact of connections in a sponsored mobility system: if mobility is truly meritocratic, a sponsor's changing position would not affect one's quality as well as subsequent career. If job assignments are controlled by authorities, however, the downfall of a sponsor would restrict one's access to privileged resources, while bringing political stigma in disorienting one's future trajectory.

Hypothesis 2: The same sponsorship ties that used to bring career rewards carry heightened risks during leadership turnover. One's chance of career advancement significantly decreases once a sponsor is removed from a powerful position.

Episodes of political change exemplify the dynamics of an evolving bureaucracy, in which the stability of hierarchical structure disguises the contention between elite cohorts in the continued strife for power. New leaders, after succession, want to consolidate power quickly within the limited range of their tenure by replacing their predecessors'

supporters with their own protégés. For instance, the former provincial CCP secretary of Jiangsu, Hui Liangyu, was a close associate of Jiang Zemin. Right after the presidential succession from Jiang to Hu in November 2002, however, Hui was replaced by Li Yuanchao in December 2002, who was a loyal supporter of Hu Jintao. The rising opportunities during this transition period, alongside the vulnerability of losing position, suggest that political connections are a double-edged sword in a destabilized authority structure. Timing, however, is critical to the importance of connections: the network effect does not occur uniformly over time, but is likely the strongest right after leadership succession, when uncertainty creates opportunities for elites' strategic actions in power consolidation.

Hypothesis 3: Sponsorship connections have larger impact on strategic appointment right after leadership turnover, when new leaders would like to consolidate power by promoting their loyal supporters.

2.4 Career Diversity and Sponsorship

Sponsorship, as a key mechanism of bureaucratic mobility, is built on one's career experience that serves as an important criterion in personnel selection. Experience implies one's political capital: career diversity signifies familiarity with cross-cutting social circles, rendering one a multiple insider with the potential to form important connections (Blau and Schwartz 1984; Lin 1999; Vedres and Stark 2010; Wegener 1991). An individual's power base is built on a series of work experience, which provides deep local knowledge as well as influence from extensive networks (Dittmer 1978, 1990). This implication of career

experience means that it is not an independent aspect from sponsorship, as those with diverse backgrounds are likely to acquire elite connections through varied circles.

Complex and focused trajectories give employees different exposures to potential sponsors. The range of career backgrounds across functional areas implies one's experience depth and diversity, as well as platforms of establishing important connections. Work experience provides the major foci for building non-kinship ties (Feld 1981; Podolny and Baron 1997). Through socialization on the job, individuals gather reliable information about one another, forming loyalty and trust through informal association and shared experience. Indeed, recent research on the Chinese bureaucracy finds that co-work experience is the most reliable indication of faction formation, compared to alternative connections from co-schooling and hometown homophily (Keller 2016; Opper, Nee, and Brehm 2015). While this does not preclude the possibility of friendship formation in other domains, those relationships tend to generate more false positives (Landry et al. 2017).

The advantage of diverse experience further relates to the opportunity structure of the bureaucracy. The functional division of labor in the Chinese bureaucracy features dual career ladders: some officials are technical specialists, whereas others have general responsibilities in political and administrative domains (Huang 2002; Zang 2004). Elite positions in the CCP and government, however, are generalist roles in charge of varied responsibilities that prefer both broad experience and political connection. This suggests that loyal generalists who are well-connected have the best career outlook (Whyte 1973:150-151), as they are structurally preferred by important positions that bring better opportunities and prospects. This generalist preference is supported by the institutional rules of cadre management, according to which officials promoted to a leading position

above the county level must have a range of experience, such as seniority (more than five years in the bureaucracy) and at least two rotations at the next lower level.[3]

The interrelations between career experience and sponsorship imply that their benefits mutually reinforce each other, rendering well-connected generalists unique advantage in elite selection. The counterfactual here is the career generalists without sponsorship. Although these officials match the experience requirement for higher positions, their advancement prospect is limited compared to those with similar experience as well as powerful sponsors.

Hypothesis 4: Diverse experience increases one's chance of career advancement, especially moving to important offices.

Hypothesis 5: There is a positive interaction effect between sponsorship and diverse experience on career advancement.

In summary, sponsorship facilitates career advancement through the strategic appointments of individuals to important work units and positions, which bring valued experience, better access to opportunities, and promising career outlook. Whereas institutional rules in the bureaucracy explicitly emphasize experience, such formal requirement complements political connections in jointly facilitating advancement. Both are control mechanisms, aiming to reinforce the elites' reign through legitimate rules and expectation of loyalty. While sponsorship consolidates elite control through interest alignment, grooming and loyalty filtering, experience leads to connections and channels individuals into varied career tracks. The two sides of the bureaucracy, both formal criteria

[3] Central Party Committee. 2002. "Regulations on the Work of Selecting and Appointing Leading Party and Government Cadres." Retrieved Feb. 20th, 2017 (http://www.china.org.cn/english/congress/226530.htm).

and informal politics, coexist and complement each other in shaping careers through their complex interactions (Choi 2012; Jia, Kudamatsu, and Seim 2015; Mintzberg 1985).

Chapter 3. Data and Methods

To test the theoretical implications, the empirical analysis employs an original dataset that I have collected with a research team from archival sources over the last six years.[4] The records are extracted from over 300 officially compiled almanacs and yearbooks published annually since 1990, covering more than 100 counties and county-level districts, 13 prefectural cities, and the provincial administration in Jiangsu Province. Overall, the data include 300,000 person-year records of 32,000 officials between 1990 and 2008. Our research team has assembled information on personnel flows of officials, including (1) chief officials in territorial administrations, such as party headquarter, government, people's legislative bodies, court, and prosecutorial office at county, prefecture, and provincial levels; (2) heads of government bureaus/offices within prefecture and provincial administrations. Only chief officials at or above certain bureaucratic rank (such as directors or associate directors of county-level offices) are included in the sample, but not those rank-and-file staff members. In this sense, the data are on elite officials in a sub-provincial administration.[5]

The records contain eight bureaucratic ranks, ranging from township to provincial levels, based on which I construct four groups as described in Table 3.1:[6] the lowest two

[4] We tentatively name it Jiangsu Bureaucratic Structure data (JSBS).

[5] A significant proportion (62.4 percent) of the individuals has experienced no mobility during the observed period and is excluded from analysis.

[6] 18 percent of the individuals have no rank information available, and they are mainly administrators of state-owned enterprises and heads of public institutes (such as hospitals and schools), not directly affiliated to government offices.

ranks, *ke*- and vice *ke*-levels, are combined into the low-rank group (2.5 percent of the data), which consists of officials and staff members in sub-county or sub-district offices (e.g. assistant to the county chief). Since the yearbooks do not record most officials in low-rank positions, this group is a biased sample and is excluded from analysis. The largest group in the data consists of the vice *chu*-level (48 percent of the data), which represents associate directors or equivalent in bureaus at the prefecture level. This rank stands alone as the lower-mid rank. County leaders, chief officials in prefecture bureaus, and associate directors of provincial bureaus are typically at *chu*-level and associate *ting*-level, and they are combined into the mid-rank group (29 percent of the data). Officials at *ting*-level and above constitute the high-rank group (2 percent of the data), which includes top prefecture leaders, directors of province-level bureaus, and provincial leaders.

Insert Table 3.1 about here

3.1 Dependent Variable

The dependent variable is mobility outcome next year, which is constructed based on the types of movement as well as the destinations of job change. The types of movement include promotion and lateral transfer, whereas the destinations are categorized according to office importance. I distinguish regular work units from the important ones that are known to hold key responsibilities in the political and economic domains, which include the Organization Department, the Propaganda Department, the Commission for Discipline Inspection, the Development and Reform Commission, the Economic Commission, the Political and Legal Affairs Commission, the Finance Bureau, the Traffic Bureau, the Bureau of Public Security, as well as the local CCP and government headquarters. I then

divide mobility events into four categories: mobility into important offices through either promotion or lateral transfer is considered as status-enhancing events that clearly signal career advancement. They are likely to involve strategic calculations by the job-granting authorities, while offering superior prospect to the appointees. These events are hence the focus of my analysis. Appointment to a regular office, however, does not necessarily imply status advancement and provides less future opportunities. This point will be explored further in the next chapter. In addition, I exclude exit events, such as retirement and migration into industry, which are typically induced by institutional regulations and bureaucratic reforms.[7]

Mobility outcome is an unordered categorical variable, which is coded as "1" for lateral transfer to a regular office (i.e. regular events), "2" for lateral transfer into an important office (i.e. important events), "3" for regular promotion, "4" for important promotion, "5" for exit, and "0" for no change (base category). As emphasized above, my analysis focuses on promotion and lateral transfer into important offices for studying career advancement through strategic appointment (categories 2 and 4). A description of mobility categories is provided in Table 3.2.

Insert Table 3.2 about here

[7] Bureaucratic reform in the 2000s transformed many industrial bureaus into state-owned enterprises (SOE). This resulted in a wave of officials' migration into the business sector, as many of them became SOE managers.

3.2 Independent Variables

3.2.1 Sponsorship

The key independent variable, sponsorship, is constructed using network analysis on shared work experiences from the administrative records. Nodes in the networks are officials, and two individuals are connected by an undirected edge if they have worked in the same office at the same time and location. Sponsored individuals are those who have worked with people in prominent positions, specifically government leaders and CCP secretaries at the prefectural and provincial levels.[8] In constructing sponsorship ties, I only include individuals in lower positions than the leaders, as the power dynamics among status equals potentially involve rivalry and do not count as patronage ties.

Sponsorship is coded in two ways to capture its time-varying effects. First, sponsorship is indicated by connections to the incumbent leaders who have the power of personnel appointment in their localities. Connection to the current leader is a time-varying indicator, which is coded as 1 when one's sponsor is the local CCP or government leader in a year, and 0 otherwise. Second, the same tie may qualitatively change meaning over time, when a sponsor rotates elsewhere or retires from a leadership position. Connection to a previous leader in a locality is coded as 1 when one's sponsor is transferred or retires, and 0 otherwise.

Moreover, I examine the risks associated with sponsorship in a quasi-experiment. I construct the treatment group as individuals whose sponsors leave the leadership positions. The treatment variable, sponsor removed, is a binary indicator that takes effect when an

[8] Connections to county leaders are not considered as sponsorship, since county leaders are on the same rank as many city officials.

individual's contact is no longer the leader of their jurisdiction. I then match the treated individuals to a control group with otherwise similar characteristics. This design is based on two considerations. First, networks are endogenous, as individuals with certain unobserved qualities, such as merit, experience, or workplace characteristics, may self-select into sponsorship while having better careers. If the mechanism of advancement were unobserved aspects other than connections, then the positional loss of one's contacts would not have a negative impact since these aspects remain unchanged. Second, much of the network research focuses on the static effects of connections, whereas their time-sensitive nature is under-explored. By using the quasi-experiment, I tease out the confounding effects of connections from alternative mechanisms, while exploring their dynamic implications in a changing authority context.

3.2.2 Leadership Turnover

To measure the effect of leadership turnover, I construct an indicator variable, upper-level CCP leader change, to capture important political events that have cascading impacts on personnel mobility. This indicator variable is coded as 1 in the year when CCP secretary change occurs at the next higher level: for county-level units, the variable indicates prefecture-level leader change; for prefectural cities, it means provincial leader change. Furthermore, I count the number of years since CCP change and interact them with sponsorship to identify the time-varying effects of connections after leadership turnover.

3.2.3 Career Diversity

The third independent variable, career diversity, captures the variety of experience through the number of past jobs and years spent in each office. One's degree of diversity at a given

time point, $D_{i,t}$, is calculated as the complement of the Herfindahl index on the fractions of experience durations in one's career (Ferguson and Hasan 2013):

$$D_{i,t} = 1 - \sum_{t=1}^{N} \left(\frac{s_{i,m,t}}{s_{i,t}} \right)^2, \quad s_{i,t} = \sum_{m=1}^{M} s_{i,m,t}$$

where $s_{i,m,t}$ is the duration of i's experience in office m up to time t, and $s_{i,t}$ is the total length of experience for i at time t. The Herfindahl index explains the concentration of one's job experience. Intuitively, the more quickly that an individual changes jobs among offices, the more diversified their experience would be. Since individuals with longer tenure tend to have richer experiences, this measure is standardized for each year and tenure. I further construct an interaction term between sponsorship and career diversity to test the hypothesis on their complementarity in facilitating advancement (H5).

3.3 Control Variables

To account for the competing mechanisms that potentially confound with sponsorship and career experience, I include the following controls in analysis.

3.3.1 Office Characteristics

Office status potentially confounds with sponsorship and diverse experience in contributing to career advancement. Appointment to a higher office is likely to bring powerful connections. Higher-status offices also tend to select individuals with diverse experiences while channeling them into varied trajectories. To account for this confounding factor, I approximate the status of an office using its proximity to the local CCP headquarter, which is the most powerful agency, through personnel exchange rates.

The more individuals that an office sends to and receives from the CCP, the higher status it would be. Office status is measured as the Jaccard distance to the CCP headquarter at the same administrative level:[9]

$$D_A = 1 - \frac{|A \cap CCP|}{|A \cup CCP|}$$

where $|A \cap CCP|$ is the number of employees shared by an office and the CCP headquarter between 1990 and 2008, and $|A \cup CCP|$ is the total number of employees in the office and the CCP. Office status is inversely related to distance from the CCP, i.e. a longer (Jaccard) distance implies lower status. Note that this measure is time-invariant, as the bureaucratic status hierarchy is relatively stable during the observed period.[10] Since offices affiliated with the CCP are closer to power and provide distinctive mobility advantage, I control for the CCP sector in analysis. Furthermore, I control for office size, as larger offices provide more resources that lead to connections and experience (Kimberly 1976). Office size is measured as the number of individuals recorded in the almanacs each year and is logged in analysis.[11]

3.3.2 Job Characteristics

Job opportunities are distributed unequally among individuals, as some have limited mobility chances whereas others move frequently. Individuals in higher-status positions, such as bureau chiefs, tend to experience more mobility than others. I control for bureau

[9] For instance, if A were a prefecture office, its status is calculated as the distance to the prefecture CCP; if A were a provincial office, its status is the distance to the provincial CCP.

[10] I calculated office status in 1990 – 2000 and 2001 – 2008 separately and found that most offices had no substantive status change across the two periods.

[11] Although the almanacs do not record the rank-and-file staff members in offices, the number of chief officials is proportional to the number of individuals in each office.

chief position to account for the job advantage. Since seniority and rank also affect the distribution of opportunities, I control for tenure length and positional rank in model estimations. In addition, I include city and year fixed effects to account for annual fluctuation and regional variation in personnel turnover. Table 3.3 presents the descriptive statistics of the main independent and control variables.

Insert Table 3.3 about here

3.4 Methods

I use two methods in empirical research design. First, I use multinomial logit models to estimate the effects of the parameters on mobility outcomes, since the dependent variable has multiple, unordered categories. A positive coefficient estimated from this model is interpreted as increasing the odds of having a mobility outcome versus the baseline outcome, no job change. Standard errors are clustered at the individual level to adjust for within-cluster correlations. The multinomial logit model assumes the independence of irrelevant categories (IIA), i.e. having one outcome versus another does not depend on the presence of other alternatives. I performed Hausman and Small-Hsiao tests to check this assumption. The test results support the assumption and show that it is an appropriate model choice. Further Wald and likelihood ratio tests suggest that none of the mobility outcomes in the dependent variable should be combined. This provides evidence that it is indeed meaningful to differentiate mobility based on the proposed destinations. As we observe in Table A-1, the independent variables have different effects on each mobility outcome, and the sponsorship mechanism is particularly meaningful to moving into important offices.

Second, I use sponsor removal in a quasi-experimental design to address the problems of endogeneity and model dependency common to observational data, in which treatments are not randomly assigned and estimates are sensitive to model choice. As mentioned before, a potential issue is that the assignment of sponsorship is confounded with alternative aspects, such as unobserved quality, experience and job characteristics. This concern is addressed by using coarsened exact matching (CEM) to generate a balanced sample (Iacus et al. 2012), with sponsor removal as the treatment to identify its causal impact on career advancement.[12] The treated group includes individuals whose contacts used to hold powerful positions but have retired or transferred, and a control group is generated using the matching procedure based on office, position, rank, tenure, and geographical location. The analytical results are reported in the next chapter.

[12] The CEM method is a nonparametric procedure that requires no assumption about the data generation process (Iacus et al. 2012). It is superior to conventional matching method as it does not require balance check, and the imbalance between groups is within an ex ante bound based on the researcher's choice of the matching criteria.

Table 3.1 Description of Positional Ranks in the Data

Group	Rank Title	Job Description	Freq.	Percent
Low	Associate Ke	Non-leading employees in county offices; associate township leaders	4,995	2.50%
	Ke	Non-leading employees in county offices; township leaders		
Lower-mid	Associate Chu	Associate directors of prefecture bureaus; vice county/district leaders	96,305	48.13%
Mid	Chu	Directors of prefecture bureaus; county/district leaders	57,730	28.85%
	Associate Ting	Associate directors of provincial bureaus; associate prefecture leaders		
High	Ting	Directors of provincial bureaus; prefecture leaders	4,407	2.20%
	Associate Sheng	Associate provincial leaders		
	Sheng	Provincial leaders		
Excluded	Unknown	Officials in SOE's, public institutes, mass organization etc.	36,675	18.33%
Total			200,112	100%

Table 3.2 Descriptive Statistics of Mobility Outcomes

	Mobility Outcomes	Freq.	Percent
Base category	No change	85,943	79.38
DV	Important lateral	3,320	3.07
	Important promotion	3,397	3.14
Other	Other lateral	6,351	5.87
	Other promotion	1,961	1.81
	Exit	7,292	6.74

N. Obs. = 108,264

The description excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level

Table 3.3 Descriptive Statistics of Main Independent and Control Variables

Variables	Mean	S.D.
Connection to current leader	0.10	0.30
Connection to previous leader	0.08	0.26
CCP leader change	0.22	0.42
Career diversity	0.32	0.28
Bureau chief	0.22	0.41
Tenure	3.14	2.32
Office status (distance to power)	0.96	0.13
CCP sector	0.18	0.38
Office size (logged)	4.55	1.26

N. Obs. = 108,264

The description excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level

Chapter 4. Analysis and Results

4.1 Descriptive Analysis

The descriptive analysis provides intuition about the data without making statistical inference. I first examine the career prospect associated with each mobility category to provide justification for the dependent variable construction. Since I argue that important work units have distinctive implications on career prospect due to their access to resources and opportunities, it is likely that individuals who move to such units have superior outlook compared to others. This reasoning is supported by Figure 4.1, in which I plot the promotion rates in the next four years (the average duration till promotion) over tenure for individuals with each mobility type. Indeed, the officials who move to important units are more than twice as likely as others to experience future advancement: the average promotion rates in the next four years are 25 percent for those who enter important units via either transfer or promotion, and less than 10 percent for all others. Although promotion rates generally decrease over tenure due to age and retirement, the advancement gaps persist among those in different mobility categories. It is hence meaningful to distinguish job moves by the importance of destination units, in addition to rank and title change.

Insert Figure 4.1 about here

Next, I examine the impact of different political connections on career advancement, specifically through strategic appointment to important work units via either transfer or promotion. In Figure 4.2, we observe that connections to the incumbent leaders improve

the chances of strategic appointment, as individuals with only this type of connections experience the best outcomes. Connections to the previous leaders, in contrast, do not help strategic appointment, as individuals with only these ties have no different advancement rates compared to others without political connections. Individuals with connections to both the current and the previous leaders are somewhat in between, as they experience better outcomes compared to those with no political connections, and yet lower rates than the officials who are only connected to the positional incumbents. This shows the dynamic impact of political connections: whereas ties to the authorities in power carry substantial rewards, affiliations to the prior elites become unfavorable over time (H1 and H2).

Insert Figure 4.2 about here

To examine the cascading impact of top leadership turnover, I plot county and prefectural leader change following the provincial CCP secretary turnover in Figure 4.3. The largest circles represent the provincial administration, whereas the smaller circles are prefectural city seats. Purple areas denote new leaders in both the local CCP and government, red for new CCP leader, blue for new government leader, and white for no change.[1] The provincial CCP secretary is the most powerful position in a province, and four turnover events in Jiangsu during the study period occurred in 1993, 2000, 2002, and 2007 respectively. Events following the 1993 leadership change are omitted from the figure, since only 6 out of the 13 cities published almanacs that year.[2] The impact of provincial change on lower-level administrations is almost immediate and extensive: in 2000, 8 out

[1] The area color of the provincial capital, Nanjing, is different from that of the provincial administration in some years, since the provincial and city administrations have different leadership turnover patterns.

[2] Based on the available information, all six cities had new CCP secretaries or mayors in the same year or the next year right after the provincial leader change in 1993, and there were extensive personnel movements in local bureaus.

of 13 cities had leader change that co-occurred with provincial CCP turnover, whereas prefectural leader turnover happened in all 13 cities in 2001, 9 of which had new CCP secretaries as well as new mayors. Only five counties did not have leader turnover by 2001. The 2002 provincial leader change had a similar impact: 6 cities had prefectural leader change in the same year, and 11 the next year. 7 out of 13 cities had new leaders in both the CCP and the government. Interestingly, the 2007 provincial CCP change triggered the fewest events, potentially due to an important reason: the new CCP secretary (Liang Baohuai) used to be the subordinate of his predecessor (Li Yuanchao), while the predecessor continued his political career in the central regime and took on a more powerful role as the director of the central Organization Department. This means that the new CCP secretary carried legacy from the prior administration, while the predecessor's ascension in power helps preserve an established authority structure.

Insert Figure 4.3 about here

While the discussion above highlights the sensitivity of leadership roles to political change, what about the extent of mobility in other work units? Figure 4.4 plots the average turnover rates of chief officials in all work units, whereas the range shows the variation of rates across jurisdictions. Interestingly, the turnover rates of officials in regular offices are relatively stable throughout periods, whereas important offices have higher turnover rates during the first two periods (2000-01, 2002-03) and lower rates during the third period (2007-08). The pattern shows heightened political sensitivity of the strategically important units. This means that during leadership transitions, officials in prominent positions are more likely to have opportunities of advancement, as well as the vulnerability of positional loss.

Insert Figure 4.4 about here

4.2 Statistical Analysis

Whereas the descriptive analyses provide preliminary evidence to the key arguments, it is important to test the hypotheses through rigorous statistical analyses and control for confounding factors. In this section, I report findings from multinomial logit models for evaluating the hypotheses.

Table 4.1 reports the estimated main effects of the covariates from nested models on strategic appointment, specifically through promotion and lateral transfer into important work units. Each column in the table introduces conceptually distinct blocks of variables. The first column includes the main independent variables of sponsorship, and the coefficients are statistically significant in the expected directions. This lends support to hypotheses 1 and 2 and shows the dynamic impacts of political connections: ties to incumbent leaders facilitate strategic appointment, whereas connections to prior authorities impede career advancement. The second column includes CCP leader change and career diversity, both of which have positive and significant effects on career advancement. In the third column, I control for office and job characteristics, which confound with connection and experience. The fourth column further controls for rank, city and year fixed effects. The findings remain substantively similar, and the main effects of the variables are robust to different specifications. The model fit consistently improves as indicated by the Wald test statistics.

Insert Table 4.1 about here

Next, I consider the interactions between sponsorship and leader turnover. Table 4.2 reports the interaction effects between the main variables. Column 1 includes the interaction between sponsorship, specifically connection to the current leader, and CCP secretary change at the next higher level. The interaction effect is negative and not significant, suggesting that sponsorship does not have an immediate effect at the same time as leader turnover, when the new incumbents have not yet consolidated power. The impacts of connections, however, are the strongest one year after a new leader takes office, as a positive and significant interaction effect on promotion occurs in the first year after leader change (column 2). The magnitude of the interaction term is even larger than the main effect: for those connected to the incumbent leaders, their odds of promotion during leadership change is 27 percent higher than others without sponsorship, and the odds rises to 84 percent one year after a new leader takes office. Although the interactions between sponsorship and years after leader change do not have significant impacts on lateral transfer, the largest magnitude of the terms also appears in the first year. The results suggest that new leaders strategically promote their supporters to important offices earlier during tenure for power consolidation, when connections matter the most in the reestablishment of an authority structure.

Insert Table 4.2 about here

Since both sponsorship and experience are important mechanisms that potentially complement each other in facilitating advancement, I examine their interaction effect, as well as the three-way interactions between sponsorship, experience, and leader turnover. Column 3 of Table 4.2 includes the interaction between connection to the current leader and diverse experience. We observe a positive and significant interaction effect on lateral

transfer, while the effect on promotion is not significant. To interpret the coefficients, each standard deviation increase in career diversity improves the odds of lateral transfer to an important office by 16 percent for an individual without sponsors, and 51 percent for an individual with political connection. Interestingly, the main effect of sponsorship on lateral transfer is no longer significant and is largely absorbed by the interaction term. This suggests that generalists with political connections are more likely transferred among important offices, whereas promotion relies on either sponsorship or experience, but not necessarily both. Moreover, the three-way interactions between sponsorship, experience, and time after leader turnover have significant effects on lateral transfer, which shows that well-connected generalists are likely transferred rather than promoted throughout a leader's tenure (column 4).

From the analysis, we find that sponsorship, specifically connection to incumbent leaders, increases one's chance of career advancement through strategic appointment. The impact of political connections, however, dynamically changes over time, as the same tie brings a career penalty once a sponsor loses power. The time-varying impact of sponsorship is the focus of the next section.

4.3 The Risk of Sponsorship: Quasi-Experimental Design

In this set of analyses, I use sponsor removal as a treatment in a quasi-experiment to derive clearer causal implications. The treatment group includes individuals whose sponsors used to be leaders in their local administrations but have retired or moved elsewhere. The control group is generated using coarsened exact matching based on the criteria of office, rank,

tenure, and locality to remove unobserved heterogeneities along these dimensions that potentially confound with connection and mobility.

Tables 4.3 reports estimates from nested multinomial logit models on the matched sample. The first column includes only the main independent variables, the treatment group and the treatment effect. We observe that individuals in the treatment group experience better mobility than those in the control group before their sponsors' removal, after the point of which they have worse career outcomes. The second column includes CCP leader change and career diversity, both of which have positive effects on career advancement as expected. The third column further includes controls of office and job characteristics, whereas the fourth column adds rank, city, and year fixed effects. Despite the inclusion of more controls, the treatment effect remains negative and highly significant with similar magnitudes across models, showing the disruptive impact of sponsor removal on subordinates' subsequent trajectories.

Insert Table 4.3 about here

The dynamic effect of political connection, however, is potentially related to career stage. It is possible that officials with ties to prior authorities belong to older cohorts, and they might have advanced to certain positions that offer little future opportunities (e.g. close to retirement). This concern is addressed in Table 4.4, in which I conduct analysis on sub-samples of individuals with different tenure lengths and positional ranks. We find that sponsor removal has negative effects on career advancement across all groups, as individuals with shorter tenure (less than 5 years) or in lower-rank positions are impacted in similar ways compared to those with longer tenure (more than 5 years) or in higher positions. The magnitudes of the treatment effect are comparable across groups, which

shows that the risks of affiliation to prior authorities are not simply due to career stage or age cohort.

Insert Table 4.4 about here

Furthermore, I examine in Table 4.5 the mediating factors of sponsor removal, such as leader turnover, career experience, and other connections. Columns 1 and 2 in Table 4.5 include interaction terms between sponsor removal and CCP leader change (and years after leader change), as the impact of sponsorship loss could become less salient over time. The interaction shows no significance, whereas the treatment effect remains negative. This means that the career penalty of sponsorship loss persists throughout a new incumbent's tenure. Column 3 includes an interaction term between career diversity and sponsor removal, as diversity may distribute the risk of connections through cross-cutting circles and generalist experience. The interaction term indeed shows a positive and significant effect on promotion, suggesting that career generalists are less affected by sponsorship loss. This, however, presents an interesting contrast to a prior finding: whereas the movement of well-connected generalists is likely to occur through lateral transfer rather than promotion, their advancement prospects are less disrupted during the aftermaths of sponsor removal. In addition, the penalty of sponsorship loss increases over time, as indicated by the negative interaction between the treatment effect and years afterwards (column 4). Nonetheless, those with multiple elite connections are less impaired, and while connections alone do not improve one's career chances (shown by the negative main effect of the number of connections), they offer a cushion against a superior's downfall through additional network support (column 5).

Insert Table 4.5 about here

The analyses demonstrate the two-sided effects of sponsorship: while powerful connections bring significant career rewards through strategic appointments of individuals to important jobs, the same ties transform into a liability over time with the sponsors' loss of positions. Power consolidation happens early in a leader's tenure, when an authority structure is reestablished through extensive personnel reshuffling and promotion of one's loyal supporters. This means that connections are the most impactful during a period of uncertainty, when political change generates emerging opportunities for the rise of new elites, alongside the risks of positional loss by prior authorities and their affiliates.

The analyses further reveal the relationships between sponsorship and specific institutional aspects, such as experience requirement in personnel selection. While loyal generalists are preferred in bureaucratic mobility, their career progressions are not necessarily built on direct promotion but transfer to coveted positions. At the same time, they are less impaired by a sponsor's downfall, perhaps due to the flexibility of experience and network support. This suggests that being a multiple insider can give one enough leverage for positional gain and job security, but it is not necessarily enough for one to be perceived as a true insider by any patronage networks.

4.4 Summary and Discussion

Part I of the dissertation introduces new conceptual aspects in the examination of political networks. The first is an emphasis on the two-sided effects of connections: while sponsorship facilitates career progression, its advantage transforms into risks right after a sponsor's loss of power. The time-sensitive nature of connections sheds light on an important question: When do networks matter the most? By examining the joint impacts

of leadership change and connections on career advancement, I find that promotion of loyal supporters is most likely to happen during the first year of a leader's tenure, a critical moment of power consolidation. This shows that the impact of sponsorship is largely driven by the strategic calculations of elites in their continued strife for power. The time-varying effect of connections is crystalized during a period of uncertainty that destabilizes an existing authority structure, when chaos is a ladder and individuals are most vulnerable to positional change. The dynamic influences of networks are hence tied to political cycles, as the effects spike at the critical stage of power transition during which sponsors rise and fall.

The changing impact of connections, however, is not only found in civil service administration, but also manifests in a variety of areas, such as state-business relations (Siegel 2007; Zhu and Chung 2014) and the supposedly meritocratic domain of scientific research. The sudden demise of a superstar researcher negatively affects their collaborators' productivity, while creating room for the rise of a new generation of elite scientists (Azoulay, Zivin, and Wang 2010; Azoulay, Fons-Rosen, and Zivin 2015). The two-sided effect of networks hence has generality beyond the current topic of investigation, providing the possibility of future comparative research.

The study further shows that the impact of elite connection operates in conjuncture with certain institutional aspects and opportunity structure. Sponsorship works through the careful planning of a protégé's career by strategic assignments to important offices, which bring not only enhanced prospects based on the opportunity distribution, but also valued experience that signals competency in facilitating favorable evaluation. Whereas cadre selection explicitly prefers diverse experience, this institutional requirement does not

efface the significance of sponsorship, as rich experience provides the platform for network formation, complementing the importance of political connections.

While the current study reveals previously less understood aspects of political networks, it triggers two pertinent questions. First, since network formation and mobility depend on one's workplace feature and organizational location, in what way does the structure of the bureaucracy shape individuals' career experiences? This question is addressed in Part II, in which I examine the structure of career lines that provide systematic channels of mobility. Second, how does the political context of the Chinese bureaucracy affect the relative importance of connection and experience, and how do networks and experience relate to each other in alternative institutional contexts? A logical extension of this inquiry, therefore, is to compare mobility in the Chinese bureaucracy to that in another civil service administration. This issue is examined in Part III, in which I conduct a comparative analysis of bureaucratic career in China and India. The comparison sheds light on the impact of institutional environments on organizational behaviors, exploring the similarities and variations between bureaucracies in authoritarian and democratic regimes.

Table 4.1 Nested Multinomial Logit Models on the Whole Sample

	Promotion to Important Offices				Lateral Transfer to Important Offices			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Sponsorship								
Connection to current leader	0.67***	0.42***	0.28***	0.38***	0.83***	0.60***	0.51***	0.40***
	(0.06)	(0.06)	(0.07)	(0.07)	(0.06)	(0.06)	(0.07)	(0.07)
Connection to previous leader	-0.39***	-0.38***	-0.38***	-0.24**	-0.44***	-0.42***	-0.39***	-0.41***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.07)	(0.08)	(0.08)
CCP leader change		0.14***	0.12**	0.18***		0.11**	0.10*	0.17***
		(0.04)	(0.04)	(0.05)		(0.04)	(0.04)	(0.05)
Diverse experience		0.30***	0.24***	0.29***		0.28***	0.19***	0.18***
		(0.02)	(0.02)	(0.02)		(0.02)	(0.02)	(0.02)
Controls								
Bureau chief			0.01	0.30***			0.06	-0.28***
			(0.04)	(0.06)			(0.04)	(0.06)
Tenure			0.06*	0.12***			-0.09***	-0.04
			(0.03)	(0.03)			(0.03)	(0.03)
Tenure^2			-0.01***	-0.01***			0.00	-0.00
			(0.00)	(0.00)			(0.00)	(0.00)
Office status			-0.01	-0.03*			0.02	0.06***
			(0.01)	(0.01)			(0.01)	(0.01)
CCP sector			0.85***	0.83***			1.14***	1.20***
			(0.04)	(0.04)			(0.04)	(0.04)
Office size (logged)			0.37***	0.46***			0.24***	0.30***
			(0.02)	(0.02)			(0.02)	(0.02)
Rank, city, year fixed effects	No	No	No	Yes	No	No	No	Yes
Constant	-3.28***	-3.44***	-5.41***	-4.55***	-3.33***	-3.47***	-4.66***	-4.53***
	(0.02)	(0.03)	(0.11)	(0.15)	(0.02)	(0.03)	(0.10)	(0.16)
Wald $\chi^2_{(k)}$	$285.55_{(4)}$***	$508.32_{(4)}$***	$2335.12_{(12)}$***	$1290.08_{(62)}$***	$285.55_{(4)}$***	$508.32_{(4)}$***	$2335.12_{(12)}$***	$1290.08_{(62)}$***

N. Obs. = 92,660. Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, two-tailed test

Notes: Wald χ^2 statistics in the first model show improvement relative to the null model. Diverse experience is standardized for each year and tenure. The analysis excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level. Estimated effects on exit, lateral transfer and promotion to other offices are omitted in the table.

Table 4.2 Interaction Effects of Sponsorship

	Promotion to Important Offices				Lateral Transfer to Important Offices			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Sponsorship								
(I) Connection to current leader	0.43***	0.24*	0.26**	0.27**	0.43***	0.29*	0.04	0.06
	(0.08)	(0.12)	(0.10)	(0.10)	(0.07)	(0.11)	(0.10)	(0.10)
(II) Connection to previous leader	-0.23**	-0.25**	-0.23**	-0.24**	-0.41***	-0.42***	-0.36***	-0.37***
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
(III) CCP Leader Change	0.21***		0.18***		0.19***		0.16***	
	(0.05)		(0.05)		(0.05)		(0.05)	
(IV) Diverse experience	0.29***	0.29***	0.28***	0.28***	0.18***	0.18***	0.15***	0.15***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
(I) × (III)	-0.19				-0.14			
	(0.12)				(0.12)			
(I) × (IV)			0.10				0.26***	
			(0.05)				(0.05)	
(I) × (III) × (IV)				0.04				0.22**
				(0.08)				(0.08)
Interactions with years after CCP change								
(I) × 1st year		0.37*				0.24		
		(0.15)				(0.14)		
(I) × 2nd year		0.00				0.16		
		(0.17)				(0.15)		
(I) × beyond 3rd year		0.18				0.08		
		(0.14)				(0.13)		
(I) × 1st year × (IV)				0.13				0.30***
				(0.07)				(0.07)
(I) × 2nd year × (IV)				0.10				0.31***
				(0.08)				(0.07)
(I) × beyond 3rd year × (IV)				0.11				0.21***
				(0.07)				(0.06)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-4.56***	-4.34***	-4.55***	-4.35***	-4.53***	-4.35***	-4.55***	-4.38***
	(0.15)	(0.15)	(0.15)	(0.15)	(0.16)	(0.17)	(0.15)	(0.17)

N. Obs. = 92,660. Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, two-tailed test

Notes: Diverse experience is standardized for each year and tenure. The analysis excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level. Years after CCP leader change are indicator variables (0/1). Estimated effects on exit, lateral transfer and promotion to other offices are omitted in the table.

Table 4.3 Nested Multinomial Logit Models on the Matched Sample from Coarsened Exact Matching

	Promotion to Important Offices				Lateral Transfer to Important Offices			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Sponsorship								
Treatment group	1.06***	0.96***	1.17***	1.13***	0.75***	0.67***	0.82***	0.82***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)
Treatment effect:								
Sponsor removed	-1.31***	-1.34***	-1.33***	-1.09***	-1.05***	-1.09***	-0.95***	-1.02***
	(0.11)	(0.11)	(0.10)	(0.11)	(0.10)	(0.10)	(0.10)	(0.11)
CCP leader change		0.11*	0.09	0.17**		0.12*	0.10	0.17**
		(0.05)	(0.05)	(0.06)		(0.05)	(0.06)	(0.06)
Diverse experience		0.23***	0.20***	0.26***		0.19***	0.15***	0.13***
		(0.02)	(0.02)	(0.02)		(0.02)	(0.02)	(0.03)
Controls								
Bureau chief			0.00	0.50***			-0.08	-0.25**
			(0.05)	(0.09)			(0.06)	(0.08)
Tenure			0.20***	0.26***			-0.05	-0.02
			(0.04)	(0.05)			(0.04)	(0.04)
Tenure^2			-0.03***	-0.03***			-0.00	-0.01
			(0.01)	(0.01)			(0.01)	(0.01)
Office status			0.02	-0.04*			0.04*	0.06**
			(0.02)	(0.02)			(0.02)	(0.02)
CCP sector			0.61***	0.52***			1.00***	1.01***
			(0.05)	(0.05)			(0.05)	(0.05)
Office size (logged)			0.39***	0.44***			0.23***	0.22***
			(0.02)	(0.03)			(0.02)	(0.03)
Rank, city, year fixed effects	No	No	No	Yes	No	No	No	Yes
Constant	-2.94***	-3.07***	-5.50***	-4.58***	-2.93***	-3.04***	-4.38***	-3.99***
	(0.03)	(0.03)	(0.14)	(0.19)	(0.03)	(0.03)	(0.13)	(0.19)
Wald $\chi^2_{(k)}$	$534.53_{(4)}$***	$188.93_{(4)}$***	$1256.29_{(12)}$***	$897.08_{(62)}$***	$534.53_{(4)}$***	$188.93_{(4)}$***	$1256.29_{(12)}$***	$897.08_{(62)}$***

N. Obs. = 38,350. Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, two-tailed test

Notes: Wald χ^2 statistics in the first model show improvement relative to the null model. Diverse experience is standardized for each year and tenure. The analysis excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level. Estimated effects on exit, lateral transfer and promotion to other offices are omitted in the table.

Table 4.4 Treatment Effects across Career Stages

	Promotion to Important Offices				Lateral Transfer to Important Offices			
	Tenure ≤ 5 years	Tenure > 5 years	Lower Rank	Mid & High Rank	Tenure ≤ 5 years	Tenure > 5 years	Lower Rank	Mid & High Rank
Sponsorship								
Treatment group	1.14***	1.16***	1.05***	1.07***	0.82***	1.25***	0.88***	0.76***
	(0.06)	(0.28)	(0.09)	(0.09)	(0.07)	(0.34)	(0.10)	(0.09)
Treatment effect: Sponsor removed	-1.03***	-1.51**	-1.55***	-0.89***	-1.00***	-1.72***	-1.35***	-0.90***
	(0.11)	(0.46)	(0.20)	(0.13)	(0.12)	(0.42)	(0.24)	(0.13)
CCP leader change	0.16*	0.38	0.12	0.27*	0.19**	-0.35	0.12	0.23*
	(0.06)	(0.28)	(0.08)	(0.11)	(0.07)	(0.35)	(0.09)	(0.09)
Diverse experience	0.27***	0.12	0.24***	0.28***	0.14***	-0.23	0.07*	0.23***
	(0.02)	(0.14)	(0.03)	(0.04)	(0.03)	(0.13)	(0.04)	(0.04)
Controls								
Bureau chief	0.48***	0.47	0.13	0.47***	-0.29***	0.46	-0.18	-0.19*
	(0.09)	(0.35)	(0.49)	(0.09)	(0.08)	(0.30)	(0.59)	(0.08)
Tenure	0.31***	1.15	0.26***	0.30***	-0.11	-0.40	0.08	-0.08
	(0.09)	(0.84)	(0.05)	(0.09)	(0.09)	(0.48)	(0.07)	(0.06)
Tenure^2	-0.04**	-0.09	-0.03***	-0.04***	0.01	0.02	-0.02*	0.00
	(0.02)	(0.05)	(0.01)	(0.01)	(0.02)	(0.03)	(0.01)	(0.01)
Office status	-0.04*	-0.10	-0.50***	-0.03	0.07***	-0.21**	0.14	0.04*
	(0.02)	(0.10)	(0.10)	(0.02)	(0.02)	(0.07)	(0.11)	(0.02)
CCP sector	0.53***	0.39	0.43***	0.43***	1.00***	1.31***	1.13***	0.79***
	(0.06)	(0.27)	(0.07)	(0.10)	(0.05)	(0.22)	(0.07)	(0.08)
Office size (logged)	0.42***	0.60***	0.32***	0.50***	0.21***	0.48***	0.28***	0.13***
	(0.03)	(0.13)	(0.04)	(0.05)	(0.03)	(0.13)	(0.04)	(0.04)
Rank fixed effects	Y	Y	N	N	Y	Y	N	N
City and year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Constant	-4.62***	-8.39**	-4.59***	-4.89***	-3.91***	-4.10	-4.71***	-2.95***
	(0.20)	(3.15)	(0.26)	(0.31)	(0.21)	(2.15)	(0.32)	(0.26)
Observations	34,344	4,006	21,420	16,930	34,344	4,006	21,420	16,930

Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, two-tailed test

Notes: Diverse experience is standardized for each year and tenure. The analysis excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level. Estimated effects on exit, lateral transfer and promotion to other offices are omitted in the table.

Table 4.5 Interaction Effects of Sponsor Removal on the Matched Sample

	Promotion to Important Offices					Lateral Transfer to Important Offices				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Sponsorship										
Treatment group	1.13***	1.13***	1.14***	1.07***	1.26***	0.82***	0.82***	0.83***	0.71***	0.86***
	(0.06)	(0.06)	(0.06)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)	(0.07)
(I) Treatment effect: Sponsor removed	-1.09***	-1.08***	-1.72***	-0.82***	-1.25***	-1.02***	-1.00***	-1.28***	-0.66***	-1.42***
	(0.12)	(0.19)	(0.23)	(0.12)	(0.19)	(0.12)	(0.19)	(0.21)	(0.13)	(0.20)
(II) CCP leader change	0.17**		0.17**	0.17**	0.18**	0.16*		0.17**	0.17**	0.17**
	(0.06)		(0.06)	(0.06)	(0.06)	(0.07)		(0.06)	(0.06)	(0.06)
(III) Diverse experience	0.26***	0.26***	0.25***	0.26***	0.27***	0.13***	0.13***	0.12***	0.13***	0.14***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
(IV) Year since sponsor removed				-0.02					-0.03**	
				(0.01)					(0.01)	
(V) Number of leader connections					-0.32***					-0.08
					(0.07)					(0.06)
Interactions										
(I) × (II)	0.02					0.02				
	(0.21)					(0.20)				
(I) × 1st year after CCP change		0.40					0.08			
		(0.24)					(0.24)			
(I) × 2nd year after CCP change		-0.44					-0.36			
		(0.28)					(0.29)			
(I) × beyond 3rd year after CCP change		-0.17					0.06			
		(0.24)					(0.23)			
(I) × (III)			0.52***					0.23		
			(0.15)					(0.15)		
(I) × (IV)				-0.08*					-0.08*	
				(0.04)					(0.04)	
(I) × (V)					0.30***					0.19*
					(0.08)					(0.08)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-4.58***	-4.41***	-4.58***	-4.61***	-4.56***	-3.99***	-3.84***	-3.99***	-4.05***	-3.98***
	(0.19)	(0.20)	(0.19)	(0.19)	(0.19)	(0.19)	(0.21)	(0.19)	(0.20)	(0.19)

N. Obs. = 38,350. Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, two-tailed test

Notes: Diverse experience is standardized for each year and tenure. The analysis excludes individuals with no mobility during the observation period, and unknown rank or below *ke* level. Years after CCP leader change are indicator variables (0/1). Estimated effects on exit, lateral transfer and promotion to other offices are omitted in the table.

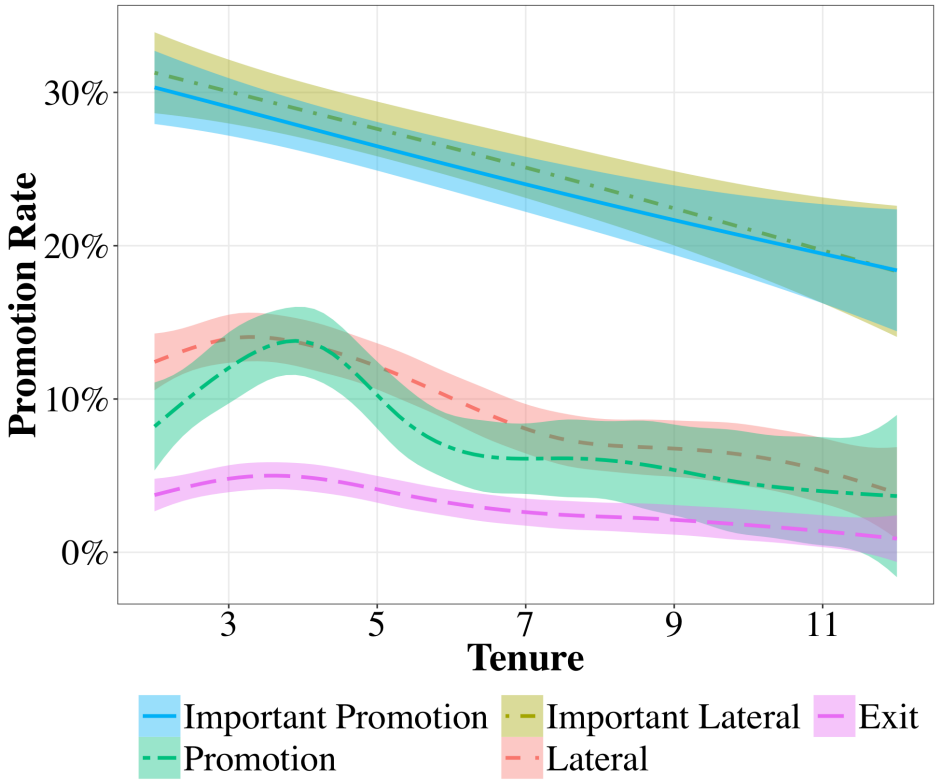


Figure 4.1 Promotion in the Next Four Years by Current Year's Mobility Outcome

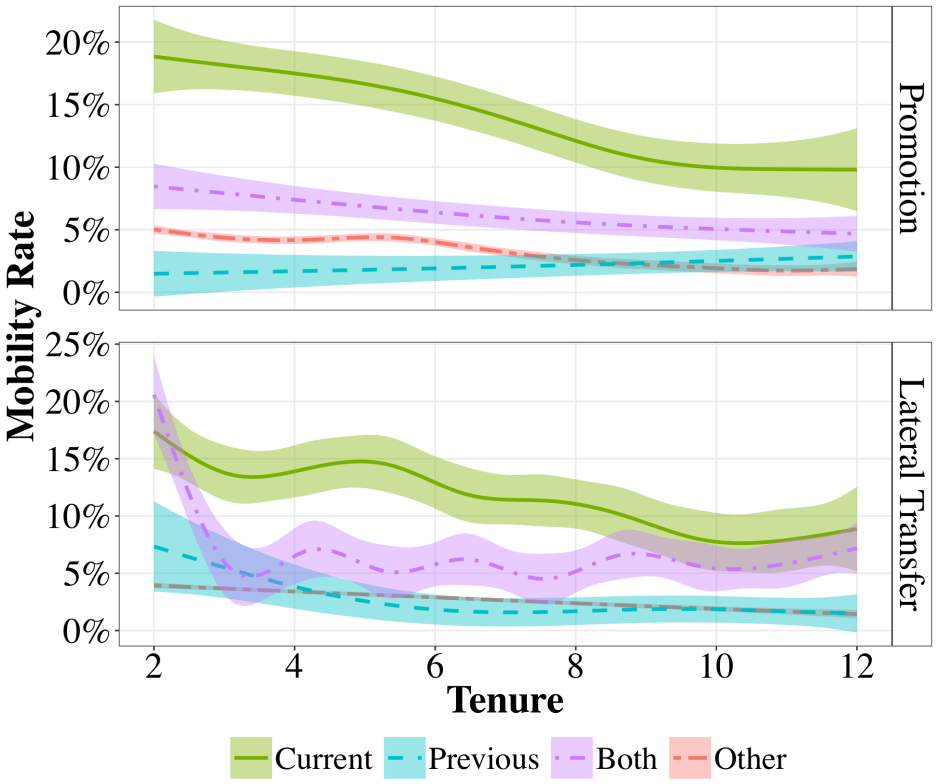


Figure 4.2 Mobility Rates by Political Connection

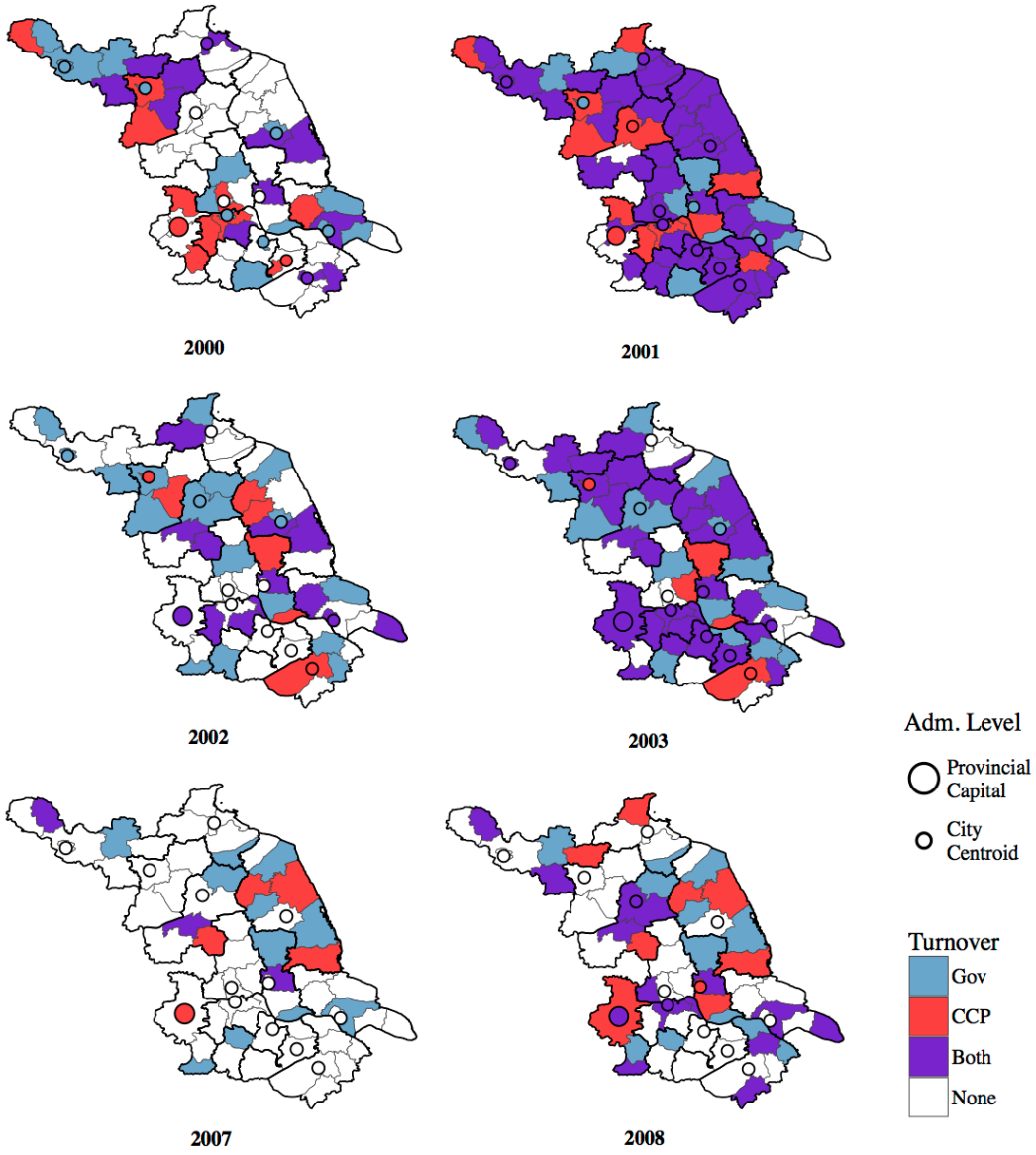


Figure 4.3 Leadership Turnover in Cities and Counties Following Provincial CCP Secretary Change in 2000, 2002, and 2007

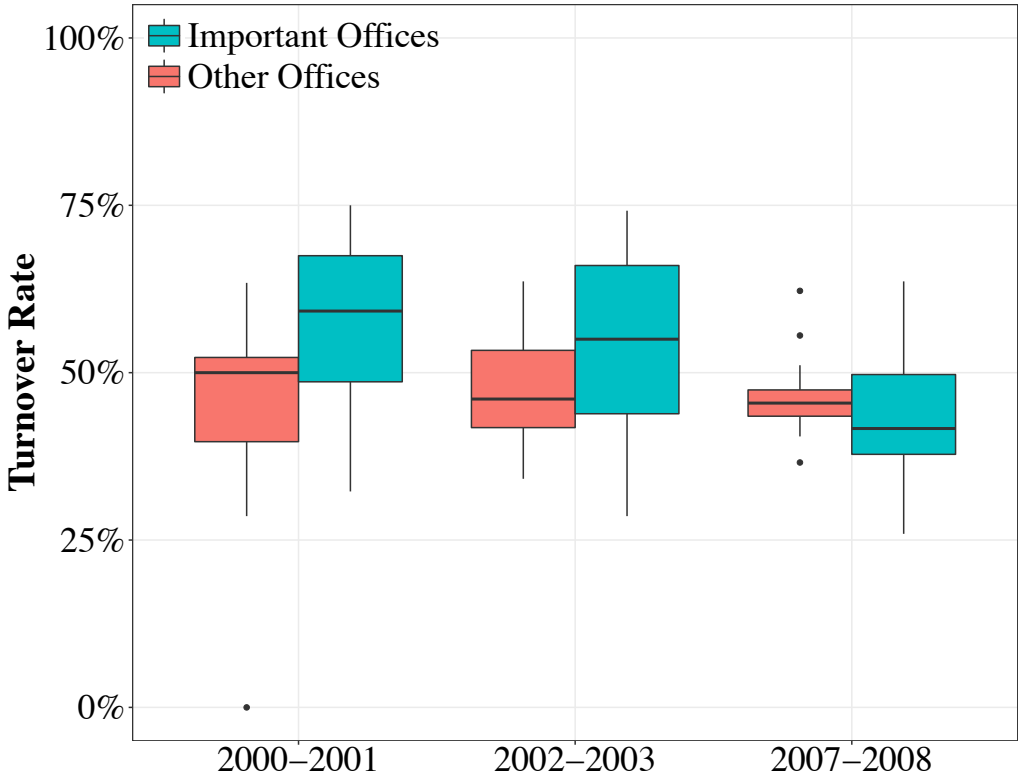


Figure 4.4 Average Turnover Rates of Chief Officials in Prefectural Cities and Province Following Provincial CCP Leader Change

Part II. The Missing Ladders of Opportunity:

Career Lines in a Large Bureaucratic System

Chapter 5. Internal Labor Market Theories

Organizational structure systematically shapes career mobility based on a latent stratification order (Baron 1984; Baron and Bielby 1980; DiPrete and Soule 1986). The relationships between individual attributes and career outcomes are influenced by the institutional processes of job sorting and matching, which select ascribed and achieved attributes into positions with relevant requirements (Jovanovic 1979; Kalleberg and Sørensen 1979; Rosenbaum 1979a). These processes are channeled through career lines, which are the shared mobility paths by individuals from given positions in producing differential accesses to resources and opportunities (Doeringer and Piore 1985).

Although past research emphasizes the significance of career lines, studies on internal labor markets invariably assume that hierarchical ladders are the natural ways of career development (Althauser and Kalleberg 1981; Althauser 1989; Caplow 1954). Career progression thus occurs from lower to higher levels, presumably within the same functional line as individuals move among closely related jobs. This prevailing assumption, however, contrasts with two important observations. The first is related to the structure of hierarchical organizations. Whereas the assumption of job ladders provides a linear view on career progression, internal hierarchies often take pyramidal shapes with fewer opportunities at higher levels, which means that promotion becomes increasingly difficult as one progresses. Instead of vertical advancement, mobility is bounded by clusters with different rates of promotion and career ceilings (Baron, Davis-Blake, and Bielby 1986; Doeringer and Piore 1985). The heterogeneous timing and rates of movement suggest that

work units have different dynamics in producing vertical moves, and career change happens in varied directions that are often horizontal or even downward (DiPrete 1987; Spilerman 1977).

The second challenge is regarding the structural arrangements of internal labor markets, many of which display a core-periphery pattern. This reflects a latent distribution of power and resources (Pfeffer and Salancik 1974), which concentrates at the center that provides superior opportunities and prospects. The structure of a labor market implies a stratification order with uneven distribution of opportunities, in which individuals have differential avenues of achievement while those in marginalized positions are inherently disadvantaged (Barnett, Baron, and Stuart 2000; Baron 1984). Although the issue of opportunity distribution has been extensively studied, its relationship to job ladders is underexplored. How, then, do careers truly develop based on the opportunity structure of a labor market?

The subject of this investigation is to examine career lines and their relationships to the labor market structure. Using unique administrative data from the Chinese civil service, the study is among the first to reveal the influence of its organizational structure on personnel mobility. Using stochastic models and network analysis, I reveal the mobility paths over time and point out that instead of hierarchical movement along functional lines, job changes are typically horizontal or downward. The missing vertical ladders are replaced by alternative routes of advancement, based on a latent stratification order that derives from the authority structure of the Chinese bureaucracy. The research not only fills the gap in existing theories by examining the institutional arrangement of career lines, but also develops empirical methodologies that are generalizable to studies on alternative labor

markets. The context of the Chinese bureaucracy motivates the theoretical discussion and is described in the next section.

5.1 Authority Structure of the Chinese Bureaucracy

The Chinese civil service is one of the most complex organizational systems in the world that consists of integrated hierarchies. Unlike civil services in democratic regimes that are nominally independent from political parties, the Chinese Communist Party (CCP) is an integral part of the bureaucracy and oversee its administrative activities. The bureaucracy employs a dual-authority structure with two intertwined hierarchies following the leadership of the CCP and the government. This structure is replicated across regions at each administrative level, rendering the bureaucracy a multi-divisional organization (Qian and Xu 1993). The dual-authority structure implies strong political orientation of the bureaucracy. Whereas the CCP has de facto leadership, the government controls a wide range of agencies performing technical and administrative tasks (Landry 2008; Liberthal and Lampton 1992; Perry and Goldman 2009). The formal organizational structure thus resembles a pyramidal tree, with a few powerful offices leading a multitude of units with less differentiated status. Besides the highest-status departments, such as the CCP and the government headquarters, most units are of the same rank at each administrative level. A latent prestige order, however, is reflected by the structure of career lines in personnel exchange.

Authority structure of the bureaucracy is organized along both vertical lines and horizontal sectors (Mertha 2005), which renders the bureaucracy an interconnected hierarchy with multiple chains of command. Whereas line management allows functional

superiors in the upper administration to supervise subordinates at the lower level, sectors maintain the power of control by the local CCP and government authorities. For instance, a Finance Bureau at the prefectural level reports to the Finance Bureau at the provincial level (line management), whereas at the same time it carries out the tasks by its local CCP or government superiors (sector management).

The existence of multiple hierarchies in the Chinese bureaucracy, as well as the intertwining chains of command, implies that career lines consist of a complex network of personnel exchange. The network reflects the interdependent relationships among work units, which form a structure of opportunities based on authority relations. Personnel exchange from the core of the dual-authority structure, the CCP and the government, to the various domains serves as a control mechanism, ensuring loyalty in elite recruitment and subordination through resource dependence. These powerful units are central to the organization of activities in the bureaucracy, and their engagements with other units bring varied opportunities to the officials. Besides control relations, bureaus with similar functions are likely to exchange personnel, as the regular channels of mobility facilitate coordination based on shared knowledge and transferable skills. For instance, the Commerce Bureau and the Commission of Economics and Trade both oversee aspects of commercial activities. Officials in these bureaus work closely together, and they are likely to have more frequent exchange than that with a department in a distant domain. These expected paths imply the distinctive opportunities accessible from one's work unit, based on the unit's function and power in authority relations.

Not all jobs, however, provide career prospect since some are closer to the retirement stage. These dead-end positions are not necessarily low-status, but

institutionally designed to reinforce the party's legitimacy and authority. The bureaucracy has three additional branches that are ultimately controlled by the CCP, namely the Local People's Congress (LPC), the Political Consultative Conference (CPPCC), and judiciary institutions such as the court and the procuratorate. The LPC is a legislative body that amends and enacts laws and the constitution, as well as electing and appointing officials. It is officially the highest organ of state power in China, although much less powerful in reality and typically rubberstamps decisions made by the CCP and government leaders (Manion 2008; O'Brien 1994; Truex 2014). Offices in the LPC are typically pre-retirement arrangements for senior party and government officials, while the local CCP secretaries preside over the LPC committees. The CPPCC is a political advisory body that enlists delegates from a wide range of non-CCP parties and social organizations, such as civic associations, research institutes, and state-owned enterprises. It serves as a bridge between the government and external associations in elite cooptation, following the United Front strategy that permits political participation of parties besides the CCP (Unger 1996).[15] In practice, however, the CCP has about two-thirds of the seats in the CPPCC, most of which are reserved for senior retirees. These institutional arrangements render the LPC and the CPPCC high-status career dead ends, which, instead of performing independent checks and balances, provide additional legislative and political support to the ruling party. The court and the procuratorate are the judiciary organs that handle criminal and civil cases. While these institutions are supposedly independent in their exercise of judicial power, they are subject to party leadership as well as budgetary constraint from the local government

[15] There are non-CCP political parties in China, typically called "democratic parties," whose members consist of elites from social, economic, and educational domains. Examples of democratic parties include the Nationalist Party of China (KMT), United Republic Party, Progressive Party, to name but a few.

(Liebman 2007; Wang 2013). Due to the technical specificity, the judiciary organizations are rather specialized, and their employees' mobility are more likely to happen within the functional lines than across domains.

The institutional context implies different patterns of career lines for work units, based on their functionalities and roles in authority relations. The conceptual dimensions and implications of career lines are discussed in the following sections.

5.2 Careers Lines of a Bureaucratic Labor Market

Civil service administrations approximate an ideal-typical internal labor market (ILM), which refers to "the complex of rules which determines the movement of workers among job classifications within administrative units" (Dunlop 1966:32). These administrations share the defining characteristics of an ILM including different ports of entry, stable employment, promotion and recruitment from lower-level jobs (Caplow 1954; Grandjean 1981:1059). Different from external markets, in which job matching are driven by competitive mechanisms, mobility in internal markets is governed by structural arrangements that reduce the uncertainties of competition and imperfect information (Kalleberg 1988; Williamson 1975). Career lines, as sequences of related jobs shared by portions of the labor force, are one of such institutional attempts of uncertainty reduction (Spilerman 1977:551-552). The structure of career lines provides employment stability and role expectations (Scholl 1983), and the shared experience differs from individual trajectory that marks an idiosyncratic succession of jobs with much randomness (March and March 1977; Wilensky 1961:523). The units of analysis for career lines are

interconnected jobs through personnel mobility (Baron et al. 1986; Kalleberg and Sørensen 1979; Rosenfeld 1992).

Despite the variety of phenomena covered by labor market studies, the literature predominantly assumes that job ladders are the major avenues of achievement in an internal hierarchy. Job ladders derive from a classification system that assigns ranks along functional lines (DiPrete 1987), and they reflect an ideal hierarchy based on specialized division of labor. Career advancement proceeds as vertical movement along a sequence of role-related experiences, which approximates a linear progression with steady development of human capital (Althauser 1989:179; Althauser and Kalleberg 1981:130; Becker 1964; Caplow 1954).

The assumption of linear job ladders, however, is problematic in light of the institutional features of the labor market. Whereas specialized ladders are applicable to organizations devoid of political influence, labor market structures correspond to deliberate strategies of domination and political control (Courpasson 2000; Weber 1978). For instance, the U.S. has a segmented market with a core-periphery structure (Cain 1976; Reich, Gordon, and Edwards 1973), which reflects the political landscape of organizations in connecting the paths of employee movement. The labor market structure indicates differential importance of organizations, as well as an uneven distribution of opportunities.

The core-periphery structure is central to authority relations in the Chinese bureaucracy, which are organized around the dual cores of the CCP and the government. The integration of the party into the civil service is a key feature of politicization of the bureaucracy, which gives rise to the interweaving paths between politics and administration. The CCP occupies the most important position in the Chinese bureaucracy,

as appointments are subject to the discretion of party officials and the Organization Department. Authority relations in the bureaucracy follow both line (tiao) and sector (kuai) management, which suggest that progression along functional lines is only one of the ways of career advancement. Whereas a number of bureaus are directly managed by line authorities at the higher level, most departments are overseen by the sector authorities of the local CCP and the government (Mertha 2005).[16] The sectorial management allows the local CCP to retain political control over personnel exchange, which is likely organized around party organizations. Indeed, it is observed that officials' careers are not simply a gradual rising through the ranks, but involve intertwining movements among the party, the government, and state-owned enterprises (Kornai 1992; Meyer-Sahling 2008). At the same time, bureaus that obey line authorities are not immune from the political influences of local authorities, as their personnel intersect with local departments through regular exchange and coordination. The multiple management practices based on line and sector imply alternative routes of achievement, whereas the centralization of political power by the party produces a latent opportunity structure that shapes mobility and career lines.

The opportunity structure implies the institutional constraints on career progression. Many mobility events do not move in a vertical manner, but instead occur laterally between similar-status positions or even downward (Spilerman 1977). This is because that individuals have differential opportunities of reaching a desired position depending on their structural locations (DiPrete and Soule 1986, 1988). Employees in positions that offer fast turnover and better opportunities are structurally advantaged, whereas those in dead-end

[16] The bureaus managed by line authorities include the Customs Office, Taxes, Commodities, Quality Supervision, and the major state-owned banks (Mertha 2005).

positions are less likely to have similar outcomes regardless of individual effort. For instance, experience in the party organizations is a key requirement before advancement to higher levels, rendering the CCP departments the nexus of personnel flows in producing senior cadres. In contrast, a chief official in a prefectural Environmental Protection Bureau (EPB) rarely reaches a prominent position, due to the marginalized status of the work unit. A viable strategy for those who are trapped in less desirable situations, however, is to change their job ladders through lateral or downward moves if promotion is not available. This allows them to pursue opportunities that are otherwise inaccessible. Take the previous example, the same EPB official can move to a county government headquarter and take a leadership role at the same rank. Although the official moves down the administrative hierarchy, he assumes a more important position and enters a better line of work. This transition thus allows him to pursue an alternative trajectory with more power and opportunities. Similar strategy is supported by a study on a large U.S. insurance company, which finds that changing one's job ladder significantly increases promotion chances, whereas the presence of vacancies does not (Petersen, Spilerman, and Dahl 1989).

The discussion above emphasizes multiple avenues of career advancement, which, however, depend on the characteristics of work units that affect the shapes of job ladders and mobility rates. Mobility opportunities are not uniformly distributed among individuals in different structural locations, as promotion chances are related to the sources and presence of vacancies, as well as the competition and reward structures (Konda and Stewman 1980; Sørensen 1977; Stewman 1975a, 1975b, 1986; Stewman and Konda 1983; Stolzenberg 1975). Hence, an important question is that how do we distinguish work units

based on their personnel exchange patterns, and what are the associated ladders of advancement?

5.3 A Conceptual Taxonomy

The multiple avenues of achievement are captured by the idea of career lines, which reflect the functional differentiation and opportunity structure through work units' interactions in personnel exchange (Benson 1975; Jacobs 1974; Pfeffer and Salancik 2003; Provan, Beyer, and Kruytbosch 1980; Tichy, Tushman, and Fombrun 1979). Career lines create the institutional divisions of a labor market by constraining mobility within clusters of jobs with similar requirements or shared structural locations (Averitt 1968; Doeringer and Piore 1985; Stolzenberg 1975; Smith 1983; Kalleberg, Wallace, and Althauser 1981). Jobs within the same domains or locations are more likely to exchange employees, and the relationships give rise to diverse competition structures and career interdependencies (Barnett and Miner 1992; Baron et al. 1986).

Units that frequently co-occur in mobility engage in an impersonalized mode of coordination, which is based on task uncertainty, interdependencies and complexity (Thompson 1967; Van de Ven, Delbecq, and Koenig 1976). This gives rise to organizational domains and sectors that facilitate coordination through regular channels of communication and knowledge transfer (Burris 2005; Powell et al. 2005; Vedres and Stark 2010). Socialization of employees is better achieved through job rotation, which produces shared understanding in task coordination (Edström and Galbraith 1977; Baron and Bielby 1980; Baron 1984). Job clustering based on functional similarity is therefore one of the bases from which career lines derive.

Beside functional similarity, personnel mobility in career lines involve two aspects that signal the distribution of authority in an underlying opportunity structure. The first aspect is the centralization of power, as internal hierarchy facilitates bureaucratic control in maintaining workforce stability, centralized supervision, and employee co-optation (Baron, Dobbin, and Jennings 1986; McGregor 1974; Sørensen 1983). Powerful work units occupy central positions in channeling flows, which allow them to monopolize personnel resources in increasing others' dependence (Emerson 1962; Hillman, Withers, and Collins 2009; Pfeffer and Salancik 2003).

The centralization of power and resources is reflected in the diversity and range of mobility channels. For instance, the CCP headquarter is likely to occupy a central position in personnel exchange based on its leading authority, while being affiliated with others of similar prestige in personnel exchange (Burris 2004; Podolny and Phillips 1996; Sauder, Lynn, and Podolny 2012). Units in peripheral areas, in contrast, are distant to power and produce trajectories with more career ceilings or less structured movement. For instance, the careers of CCP officials would contrast those from a marginalized unit, such as the Environmental Protection Bureau, as the former would enter various important departments whereas the latter have limited movement. The diversity of personnel exchange relations thus reflects the importance of a unit based on its position in the personnel flow network.

Second, personnel exchange in career lines implies work units' relative status in control relations. The importance of a unit is reflected in the directionality of employees' movement. Personnel inflow confers status, as high-status departments are promotion destinations and recruit widely from lower-status units. The core units, which are central

to the technical and political goals of the organization, offer more rewards and mobility chances (Brass 1984). For instance, the CCP and the government headquarters are the most important departments in the bureaucracy, and they are likely receiving personnel from various bureaus. This, however, does not mean that individuals have equal opportunities of entering such destinations. Officials in marginalized units, such as the Environmental Protection Bureau (EPB), would have limited chances of moving into the CCP and government headquarters, whereas individuals from the headquarters can enter the EPB relatively easily. The example above shows that personnel outflow does not necessarily confer status but reflects inequality in control relations. Powerful departments in the bureaucracy maintain control by sending employees to others, especially high-priority units, as the bureaucracy is structured to maximize centralization in the distribution of power and resources (Lin and Bian 1991:659). For instance, the CCP sends out a network of party cadres to each functional bureau to ensure ideological conformity (Lee 1991), while it directly appoints the heads of important units. The directionality of personnel flow thus reflects status conferral and control relations in the distribution of authority.

The diversity and directionality in personnel exchange form a basis for work-unit taxonomy. Specifically, diversity of personnel inflow reflects status, as high-status organizations have multiple exchange partners and occupy key positions in task coordination and employee retention. Diversity of personnel outflow, however, reflects patterns of control, as powerful departments maintain centralized authority by sending employees to various other units. Note that the interpretation of outflow diversity is subject to discretion, as entry-level bureaus (such as township government) may extensively send out personnel while having limited authority. It is hence important to define the status of a

work unit by considering both dimensions of personnel flows. A conceptual taxonomy of units based on inflow and outflow diversity is given in Figure 5.1.

Insert Figure 5.1 about here

The power dynamics and status of organizational units have key implications for the opportunity distribution, such as the shapes of job ladders that impose varied constraints on employees' status advancement. As shown in Figure 5.1, the top right quadrant includes work units that are abundant in diverse inflow and outflow, which consist of the power core of the bureaucracy (i.e. "nexus", such as the CCP and government headquarters) that connects various functional domains. Hierarchical ladders and fast turnover are likely to occur in the core sectors that facilitate the movement of those in authority positions, since these actors have better career rewards, which in turn serve as a control mechanism to ensure their loyalty (Rosenbaum 1979b). The employees have better advancement prospects and the incentive to preserve status by moving within the same sectors. This implies that within-sector mobility would be greater than that across sectors.

The bottom left quadrant includes units with limited inflow and outflow. These are the specialists with few personnel exchange partners. The specialized units may not have fast turnover and rich mobility chances. However, their employees are insulated from external competition and have access to niche resources (Hannan and Freeman 1977). Hierarchical job ladders are likely to be the main avenues of achievement for specialist employees, since they experience limited mobility and competition outside the specific domains.

Work units in the top left quadrant have limited inflow but diverse outflow. These units have unclear status and are the personnel suppliers (i.e. "feeders") to other

organizations. Although the heterogeneous trajectories from these units imply higher mobility rates, the employees' movements are likely to have wide variations. As officials in these units are neither specialized nor powerful enough to have rich access to opportunities, their career mobility would mainly occur through lateral moves without clear ladders of advancement.

Finally, work units in the bottom right quadrant have diverse inflows but limited outflows. They are likely to be dead ends close to the end of career lines, such as the LPC and CPPCC that are pre-retirement arrangements for senior officials. Individuals in these units are unlikely to have either mobility or job ladders. Note that the high inflow diversity suggests that the "dead-end" units are nominally high-status; however, they offer no real prospects and are most likely to be personnel retainers or exit positions.

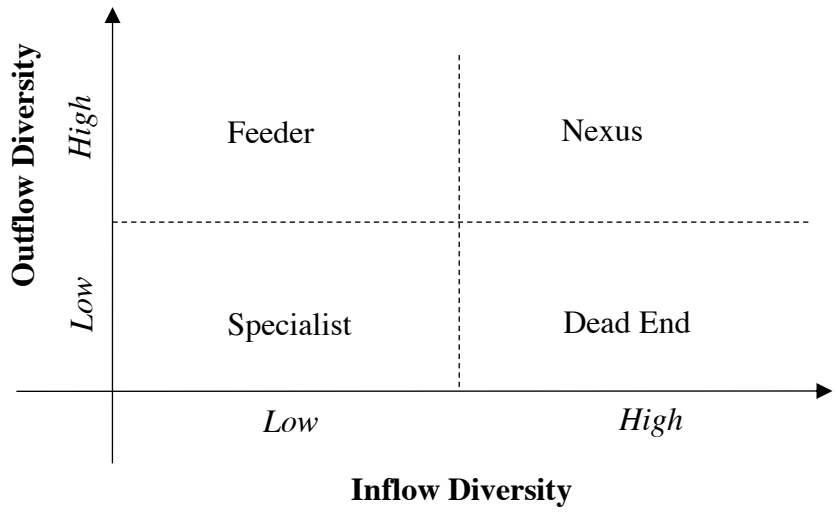


Figure 5.1 Work Unit Taxonomy Based on Personnel Flow Diversity

Chapter 6. Data and Methods

The empirical analysis employs original data from archival sources that the author has collected with a research team over the last six years. The records are manually collected and coded by more than 20 research assistants from over 300 officially compiled almanacs and yearbooks published annually since 1990, covering more than 100 counties and county-level districts, 13 prefectural cities, and the provincial administration in a major Chinese province. The 300,000 person-year records present a systematic picture of mobility among functional units of the Chinese bureaucracy, including offices affiliated with the CCP, the government, the LPC, and the CPPCC, as well as judiciary institutions such as the court and the procuratorate at the provincial, prefectural, county and district levels. In addition, the data provide personnel information of state-owned enterprises (SOE), public institutions, and civic associations that are affiliated with the Chinese bureaucracy. Such comprehensive information extends well beyond existing studies on the bureaucracy and provides a complete picture of personnel movement at different levels.

The organizational units of the bureaucracy are grouped into 79 functional lines, which span across political domains, such as cadre management and propaganda, to economic development, agriculture, industry, cultural and scientific affairs. Some perform highly specific functions, such as statistics, meteorology, and customs office. These functional lines consist of 160 standing bureaus at different administrative levels.[17] Others

[17] For instance, the Organization Departments at provincial and prefectural levels are different offices considering administrative levels, albeit they belong to the same functional line.

perform generalist coordination roles, such as those in charge of politics and economic development. Figure 6.1 presents the structure of the Chinese bureaucracy according to the formal organizational chart. This structure is repeated at each administrative level, following a descending order of province, prefectural cities, and counties in a sub-provincial administration. We can see that the CCP, as the most powerful organization, in fact has only a dozen affiliated departments, whereas the government consists of a wide range of functional branches spanning across over 50 areas. The CCP departments, however, wield significant political clout and work closely with others with similar or complementary functions. For example, the Political and Legal Affairs Commission of the CCP oversees the government Bureau of Public Security, as both are responsible for policing, law and order. The United Front Work Department of the CCP coordinates with the CPPCC for political advisory and elite cooptation. Since the main focus of the paper is on career lines within the core of the dual-authority structure (the CCP and the government), committees of the LPC and the CPPCC, as well as other types of organizations such as civic associations, public institutions, and state-owned enterprises, are combined into large categories for simplifying the analysis. A detailed account of organizational units is described in Table A-2.

Insert Figure 6.1 about here

Career lines are constructed from the shared paths of individual movement across functional lines, the details of which are discussed in the next section. These mobility paths are different from rank progression, which routinely occurs within units as well as for job change to another department. The rank hierarchy in the data is composed of the following (see Table 3.1): the associate division is the entry-level rank that represents the largest

group (48 percent of the data). It mainly includes associate directors of prefectural bureaus and associate magistrates in counties and districts. The division level is the next rung on the ladder, held by county/district magistrates and prefectural bureau chiefs. Achieving this rank is a landmark career accomplishment since it defines one's political elite status in China (Walder 2004:195). The associate department level is typically held by associate directors of provincial bureaus and associate leaders of prefectural cities. Ranks at and above the department level are considered high-status as they are conferred to senior officials, such as prefecture leaders, directors of provincial bureaus, and provincial leaders.

6.1 Dependent Variables

I use two dependent variables to examine the patterns and formation of career lines. I first construct individual mobility trajectories among functional lines, and each line is conceptualized as a Markovian state.[18] Individuals remain in a state until they change jobs to another, and the movement of all individuals in a state constitutes career lines from which I estimate transition probabilities as well as the length of stay. Let X_t be a random variable describing Markovian states at time *t*, the transition probabilities of individuals who change jobs from functional line *i* to *j* at time *t* is expressed as

$$p_{ij}(t) = \Pr\{X_t = j \mid X_{t-1} = i\}$$

Since mobility rates can fluctuate over time due to institutional change or exogenous events, I do not assume that the process is time-homogenous in which transition

[18] Further disaggregation of functional lines is not possible due to the computational limit of Markov-process models in estimation.

probabilities are constant. The likelihood of transition, as well as its variation over time, are both quantities of interest. This renders the time-inhomogeneous semi-Markov process an appropriate model for estimating the empirical distribution of career transition (Ginsberg 1971; Konda and Stewman 1980; McFarland 1970; McGinnis 1968; Stewman and Konda 1983).

Second, to examine the formative process of career lines, I build network simulation models to estimate the likelihood of tie formation among work units based on personnel exchange over time (Snijders et al. 2010). I create personnel exchange networks each year, in which nodes are the 160 offices at different administrative levels, and edges are weighted with mobility rates between a pair of offices estimated as follows:

$$p_{ij,t} = \frac{N_{i \to j,t}}{N_{i,t-1}}$$

where $N_{i \to j,t}$ is the number of individuals who change jobs from *i* to *j* in a given year, and $N_{i,t-1}$ is the number of individuals at office *i* last year. Since some of the job changes are idiosyncratic and not representative of the typical trajectories, I exclude ties with weights less than 0.01, i.e. the likelihood of job change is less than 1% between a pair of offices at any given time.

The dependent variable is the presence of a tie between a pair of offices in the exchange networks, 1 if at least 1% of the employees change jobs from office *i* to *j* in a year, and 0 otherwise. I differentiate ties by lateral transfer of personnel from those by promotion due to the qualitative difference between the mobility events, as well as the exchange of personnel in various positions, such as chief officials versus others. From the differentiation of mobility events, I construct multiplex networks to examine the co-

evolutionary processes in career line formation. The first portion of Table 6.1 presents the summary statistics of personnel exchange networks.

Insert Table 6.1 about here

6.2 Independent Variables

6.2.1 Work Unit Classification

To derive a taxonomy of work units based on the conceptual dimensions, I measure personnel flow diversity using a Herfindahl index. The measurements consider the heterogeneity of personnel exchange partners, directionality of flow, as well as employees' tenure lengths, since shorter tenure implies fast turnover and more employee diversity. The inflow diversity of a bureau, D_i, is measured as

$$D_i = 1 - \sum_j \left(\frac{t_{j \to i}}{T_i}\right)^2, \qquad T_i = \sum_j t_{j \to i}$$

where $t_{j \to i}$ is an individual's tenure in the bureau after career transition, and T_i is the employees' total lengths of stay. Similarly, the outflow diversity is expressed as:

$$D_i' = 1 - \sum_j \left(\frac{t_{i \to j}}{T_i}\right)^2, \qquad T_i = \sum_j t_{i \to j}$$

where $t_{i \to j}$ denotes the tenure length of an individual in the bureau before career transition, and T_i is the employees' total tenure. Both measures are time-invariant to provide a stable

categorization of work units.[19] To interpret the measures, a work unit has greater diversity in personnel flow if employees have fast turnover from or into varied departments.

6.2.2 Dyadic Attributes

Hierarchical ladder is measured as the positive difference between the administrative levels of a pair of offices. Personnel movement from a lower- to a higher-level department is counted as moving up the ladder, whereas movements among units at the same level, or from a higher to a lower level, are not considered. Specifically, a hierarchical ladder exists from county to prefectural departments, and from prefectural to provincial departments.

In addition, I consider personnel exchange more likely to happen among units in the same domain, due to their functional similarity in task coordination. Departments are grouped into domains based on their functionalities, and an indicator variable denotes shared domain if a pair of work units are within the same area.

6.2.3 Office Attributes

To estimate the impact of power of work units on career line formation, I approximate a department's power as its number of affiliated employees (Samuel and Mannheim 1970). Work units are arranged into a hierarchical structure based on the formal organizational structure (see Figure 6.1), repeated for each administrative level. I then recursively count the number of individuals affiliated with an organization via inter- and intra-bureau hierarchies to estimate its power, p_i:

[19] Variation of the classification system over time is beyond the scope of this paper and merits another in-depth study.

$$p_i = \log\left(\sum_{j=1}^{N} p_j\right)$$

where j is a subordinate unit of i, p_j is the power of office j, and N is the total number of i's affiliated branches. The more individuals controlled by the subordinate units, the more powerful is a focal bureau.

Another important organizational attribute is size, which impacts employment relations and opportunity structure in confounding with other mobility mechanisms (Blau 1970; Hall, Johnson, and Haas 1967; Kimberly 1976; Stolzenberg 1978). Larger offices are more likely to provide opportunities, having personnel exchange with others, while producing intense competition among employees. To control for the effect of size, I measure organizational size as the logarithm of the number of individuals recorded in a department in any given year. The descriptive statistics of the independent variables are summarized in the second half of Table 6.1.

6.3 Methods

6.3.1 Continuous-Time Non-Homogeneous Semi-Markov Process (CTNHSMP)

I use two methods to examine the time-varying patterns and formation of career lines. The first is a continuous-time non-homogeneous semi-Markov process (CTNHSMP), which is a type of stochastic processes that have been widely applied to manpower analysis and social mobility (Blumen, Kogan, and McCarthy 1955; Ginsberg 1971; Goodman 1961; Konda and Stewman 1980; McFarland 1970; Spilerman 1972; Stewman 1975b). This model is used as a non-parametric analysis that estimates the transition probabilities among

work units, depending on how long one has spent in each unit. In other words, the stochastic process analysis gives us the characterization of mobility among career lines over time.

A stochastic process $X(t)$ with a finite set of states $N = \{1, 2, \dots m\}$ having stepwise trajectories with jumps at time $0 < \tau_1 < \tau_2 < \cdots$, such that the values $X(\tau_n)$ at its jump instants form a Markov chain with transition probabilities

$$p_{ij} = P\{X(\tau_n) = j | X(\tau_{n-1}) = i\}$$

The process is memoryless, i.e. the outcome of the current state depends only on the immediate previous state and not on earlier moments. Let $(X_n, T_n), n = 0, 1, \dots$ be a homogeneous Markov chain with transition probabilities

$$p_{ij}(t) = P\{X_{n+1} = j, T_{n+1} \leq t | X_n = i, T_n = s\}$$

The process $(X_n, S_n = T_1 + \cdots + T_n)$ is a Markov renewal process defined by both states and times. Let $N(t) = \max(n: S_n \leq t), t > 0$ counts the number of renewals in the time interval $[0, t]$, then the process $X(t) = X_{N(t)}$ is called a semi-Markov process (SMP). The SMP shows the evolution of the stochastic process, whereas realization of the process has a defined state for a given time. Relaxing the assumption of time-homogeneity, meaning that the transition matrix is the same over time, we have a time-inhomogeneous SMP (Janssen and Limnios 1999).

The CTNHSMP is superior to the classical Markovian process based on two reasons. First, the time-inhomogeneity assumption makes it more flexible than the Markovian process, which assumes that the transition matrix is time-invariant. This means that in estimation, the Markovian process will produce a fixed transition rate for a pair of work units regardless of time, whereas the CTNHSMP will produce different rates

depending on one's time in a state. Second, the semi-Markov property of CTNHSMP renders the model closer to empirical reality than a Markovian process, as the latter assumes memoryless, i.e. the current outcome only depends on the immediate previous state, regardless of the preceding history. The CTNHSMP, however, does not assume that the system is memoryless except for at specific jump instants (Bartholomew 1973; McClean, Montgomery, and Ugwuowo 1998; Papadopoulou and Vassiliou 1999). This means that the moment of transition depends on an individual's current work unit, but the mobility process is also influenced by one's past trajectory.

For this analysis, I construct the 79 functional lines into a state space.[20] The length of stay before transition between a pair of states, X_i and X_j, has a probability density function $f_{ij}(t)$ and a survivor function $G_{it}(t)$, where

$$G_{ij}(t) = \int_t^{\infty} f_{ij}(t)\, dt;\ (i \neq j\ )$$

The intensity matrix, $Q(t) = \{\lambda_{ij}(t)\}$, uniquely defines the semi-Markov process that characterizes transitions at a given moment, where the hazard, $\lambda_{ij}(t)$, is expressed as

$$\lambda_{ij}(t) = \lim_{\delta_t \to 0^+} \frac{p_{ij}(t, t+\delta_t)}{\delta_t}$$

where $p_{ij}(t, t+\delta_t)$ is the instantaneous rate of change for individuals moving from state i to j between the time interval $(t, t+\delta_t)$, given that they are in state i at time t (Papadopoulou and Vassiliou 1999:242-247; McClean et al. 1998:195-196). Estimation of the empirical transition probabilities (described in Appendix 1) follows a multi-state model

[20] This means that the transition matrix is 79 by 79 at each time point.

using the Aalen-Johansen estimator, which calculates the marginal quantities of interest from the data without assuming an underlying probability distribution (Datta and Satten 2001, 2002; Ferguson, Datta, and Brock 2012:3-5).

6.3.2 Siena: Network Evolution of Career Lines

Second, I use a network evolution model, Siena (Simulation Investigation for Empirical Network Analysis), to examine the formation of career lines through personnel exchange over time (Snijders 2001; Snijders, van de Bunt, and Steglich 2010). The nodes in the networks are the 160 departments at different administrative levels, and edges denote the presence of job change between a pair of departments that represents the mobility of at least 1% of the employees at the sending department. The model controls for interdependent behaviors of nodes in network formation, which is superior to conventional statistical models that do not consider network endogeneity. However, it is currently limited to predicting the presence of ties in binary format, whereas edge weights are not incorporated. Nonetheless, the transition rates are the key focus of CTNHSMP, whereas the Siena models allow parametric analysis on the mobility mechanisms that are not included in semi-Markov process.[21]

Siena is a continuous-time Markov chain model that represents how network changes from one period to another in its tie formation and dissolution (Ripley et al. 2017; Snijders et al. 2010). Let the current network be denoted as x^0. The time duration until the next possible change is exponentially distributed with parameter

[21] Although the semi-Markov process can also estimate parameters of mobility mechanisms, the end result would yield a different estimate for each cell of the transition matrix, which renders the results extremely difficult to interpret. In this case, each variable would have 79×79 estimates over 18 periods.

$$\lambda_+(x^0) = \sum_i \lambda_i(x^0)$$

where $\lambda_i(x)$ is the rate function for a focal node. Assuming that a department *i* changes its ties to some of the other departments, and C denotes the set of all networks that can potentially result from the change. The probability that we observe a network configuration x after the change is

$$\frac{\exp\,(u_i(x^0, x))}{\sum_{x' \in C} \exp\,(u_i(x^0, x'))}$$

where $u_i(x^0, x)$ defines the probability of change in the network. This objective function is estimated as a linear combination of effects depending on the state of the network:

$$u_i(x^0, x) = \sum_k \beta_k s_{ki}(x)$$

where $s_{ki}(x)$ are node-level or dyadic effects, and β_k are the associated parameters. Results from the statistical methods are reported in the following chapter.

Table 6.1 Descriptive Statistics

	Mean	S.D.
Personnel Exchange Networks		
Nodes	114.50	(11.53)
Edges	269.40	(64.45)
Transition Rate	0.34	(0.40)
Clustering Coefficient	0.13	(0.03)
Diameter	12.78	(2.49)
Descriptive Statistics		
Dyadic Attributes		
Hierarchical Ladder	0.27	(0.44)
Same Domain	0.05	(0.22)
Organization Attributes		
Power	5.98	(1.22)
Size	3.15	(1.51)
Organization Category		
Specialist	58	--
Nexus	47	--
Feeder	26	--
Dead End	29	--

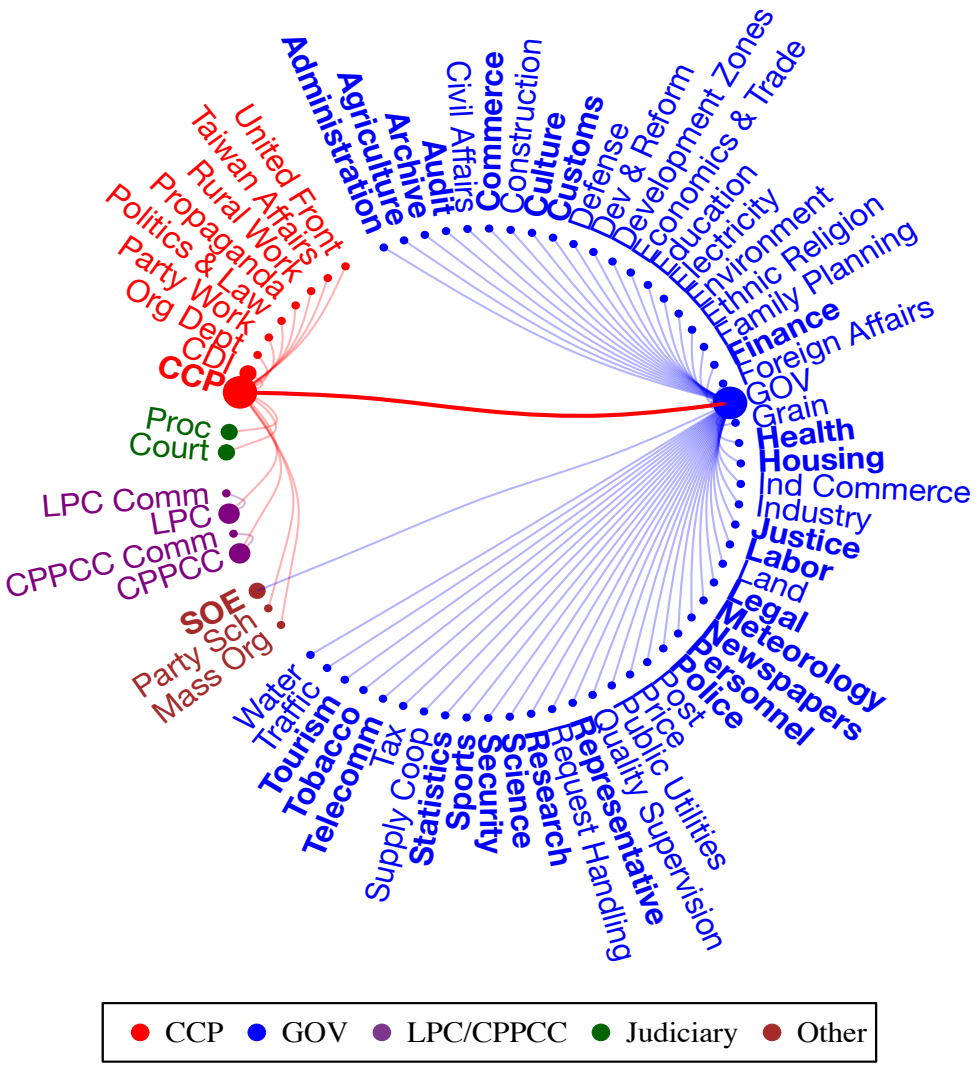


Figure 6.1 Formal Structure of the Chinese Bureaucracy

Chapter 7. Analysis and Results

7.1 Evolution of Career Lines

7.1.1 Networks of Personnel Flows

Figure 7.1 provides an overview of the career line network between 1990-2008. Nodes are the 160 departments at different administrative levels, and edges are weighted with transition probabilities. To present typical mobility paths, the graph includes edges with weights of at least 5%, i.e. more than 5 percent of the employees at the sending unit went to the receiving department. Node colors denote different types of organizations, with red means CCP affiliates, blue for government, purple for legislative and consultative bodies (LPC and CPPCC), green for judiciary institutions (court and procuratorate), and brown for others. Administrative levels are differentiated by shades, where darker shades denote higher levels. In addition, I use the Walktrap community detection algorithm with modularity to cluster the nodes, based on the idea that a random walker is more likely trapped in dense clusters with fewer external connections (Pons and Latapy 2005). The community detection allows us to observe which units have closer relationships in personnel exchange.

Insert Figure 7.1 about here

Three observations emerge from the career line network. First, the personnel exchange patterns indicate status of work units. The highest-status organizations, the CCP and the government headquarters, occupy central positions in connecting career lines; they

are the most powerful "nexuses" of the bureaucracy in linking disparate units from various domains and across levels. Most of the connections of the CCP and government, however, are incoming edges from lower-status organizations, which is consistent with previous network studies in showing that indegree is correlated with status (Ball and Newman 2013; Jackson 2010). High-status departments, however, also send out connections to subordinate units, which not only confers status but also reflects organizational control.

The second observation follows from the first as we notice a clear pattern of control. Lower-status organizations typically do not have direct personnel exchange, and they are connected by the CCP and the government headquarters. This suggests that their communication channels are centrally managed by the superior organizations. The headquarters of the dual-authority structure, besides receiving personnel, also send out employees to oversee important branches, for instance, to the LPC and the CPPCC, as well as the headquarters at lower administrative levels. Institutions outside the bureaucracy, such as mass organizations and non-CCP parties, are coopted into the state through their exchange with the CPPCC, which is in turn controlled by the CCP.

Third, departments cluster to form communities that reflect the functional division of labor, as those with similar tasks have closer exchange relations. For instance, the industrial bureaus have strong relationships to the state-owned enterprises, and the committees in charge of the economy and trade have regular channels of mobility. The more specialized units, such as judiciary institutions, form close-knit communities and rarely exchange with others, although it is interesting to observe that the direction of personnel flow is typically from upper- to lower-level administrations rather than the reverse direction.

The observation above suggests that career mobility does not necessarily occur from lower- to higher-level units within the same functional line, as there are multiple directions of movement along interconnected hierarchies. I thereby examine hierarchical movement across administrative levels in Figures 7.2 and 7.3. In Figure 7.2, we observe mobility from lower-level units to upper administrations and find that hierarchical progression is almost non-existent with only a few exceptions.[22] Upward movement notably occurs in the most powerful units, such as the headquarters of the CCP, the government and the CDI, and extremely specialized units such as the judiciary and meteorology departments. This surprising finding, on the one hand, clearly shows the absence of hierarchical progression along functional lines contrary to common expectation. On the other hand, it makes intuitive sense, as it indicates the extremely limited opportunities for lower-level officials to move across administrative and spatial boundaries.

Insert Figure 7.2 about here

Figure 7.3 further describes hierarchical mobility in the reverse direction, from upper- to lower-level administrations. In contrast to the previous figure, we see a clear pattern of downward movement, as upper-level departments extensively send personnel to lower-level units. Besides movement within the same functional line, mobility also commonly occurs across domains. For instance, many prefectural departments send personnel to the CCP and government headquarters at the county/district level regardless of task specificity. Figure 7.4 further shows that regular personnel exchange occurs among work units at the same administrative level. These horizontal moves across domains are far

[22] Both Figures 6 and 7 include edges with transition rates at or above 0.01, which means that the mobility paths are representative of the movement of at least 1% of the employees from the sending departments.

more common than hierarchical line moves as the main avenues of achievement. The findings show that career lines among bureaucratic units largely operate through lateral and downward movement, whereas hierarchical job ladder is extremely rare in connecting units along functional lines. This further suggests a dominant pattern of top-down control, as upper-level units send employees to lower units to facilitate supervision and coordination.

Insert Figures 7.3 and 7.4 about here

Findings from the career line networks contrast with that from rank progression, which is the prototypical ladder advancement in an internal hierarchy. Figure 7.5 presents the cumulative transition probability of rank progression over tenure from the semi-Markov process analysis. As expected, most individuals indeed advance along the rank hierarchy over time, and 80% of the officials have experienced promotion to the next level at the end of the observational period. Roughly 50% of the officials are promoted to the next level after four years, which happens to be the average tenure till promotion. The opportunity structure in rank progression largely follows a pyramidal structure (Sørensen 1977), as the chance of advancing to the highest level is extremely slim with longer waiting period.

Insert Figure 7.5 about here

The career line networks not only reveal multiple avenues of advancement in the bureaucracy, but also raise the question on the distinctive opportunities associated with work units. An empirical taxonomy based on personnel flows thus provides critical insight into this issue. Figure 7.6 plots the classification diagram of the 79 functional lines, with bureaus combined across administrative levels for simplification. The outcome matches our ground-truth knowledge: most of the CCP departments and government bureaus overseeing the economy and finance have high diversity in personnel inflow and outflow.

They are typically considered powerful and are the "nexus" organizations according to the classification system. The LPC and the CPPCC offices are career dead ends, with high inflow diversity and limited outflow. This matches the description that most of their positions are pre-retirement arrangements for senior officials (see section 5.1). Bureaus in charge of specific duties, such as meteorology, the Customs Office, and archives, are categorized as specialists with limited inflow as well as outflow diversity. The most interesting findings are the "feeder" organizations, which include departments such as commerce, education, and foreign affairs. These departments have dubious status and power; however, they perform less specialized tasks and provide the employees with varied career prospects. As we have seen from the career line networks, only "nexus" and "specialist" bureaus provide vertical ladders, whereas all others channel their employee flows in lateral or downward directions. It is hence meaningful to consider the relationship between job ladder and work unit type for understanding the empirical patterns of career lines.

Insert Figure 7.6 about here

7.1.2 Siena Models

To further examine the formative process of career lines in a statistical framework, I estimate the effects of organizational structure on career line formation in Siena models. Table 7.1 presents the estimates from nested Siena models, with each column introducing conceptually distinct blocks of variables. The first model includes basic network attributes, density and reciprocity, as well as node and dyadic attributes. As we observe, hierarchical job ladder (i.e. positive difference in administrative levels) significantly reduces personnel flows between a pair of departments, such that upper-level department are less likely to

receive personnel from the lower level. This is consistent with the finding from Figure 7.2 that describes the sparsity of hierarchical personnel flows. Domain similarity increases exchange, and node-level attributes, such as size and power, also increase personnel flow in the expected direction.

Insert Table 7.1 about here

The second model adds organizational typology in dyadic exchange, with dead end being the omitted category. We find that personnel flows are more likely to occur if the sending (ego) department is a nexus or feeder unit, whereas the receiving (alter) department's category has a negative effect on edge formation regardless of type. The negative effect of alter's category is due to the reason that dead ends are the most likely receiving parties relative to other types of organizations. I further include the interaction effects of hierarchical ladder with domain and department attributes in model 3, and those with organizational typology in model 4. We notice that hierarchical ladder in the same domain increases personnel exchange, and powerful work units are likely to send employees to departments at higher administrative levels. The size of the organization, however, has a negative effect on employees' upward mobility across levels, which is perhaps due to intensified peer competition (columns 3 and 4). In addition, the specialist sending type has the largest magnitude of the interaction effect compared to other categories, which suggests that even though specialist organizations may not offer the most diverse opportunities, they are likely to channel employees into streamlined career paths in producing upward mobility (column 4).

To examine the coevolution of different aspects in career line formation, I dissect the networks of personnel flows by the content of mobility, such as lateral transfer and

promotion, and the exchange of different personnel such as chief officials versus others. Table 7.2 presents the Siena estimates on the effect of one network on another's formation in multiplex network co-evolution. We find that the lateral transfer network has a larger impact on the formation of promotion network than vice versa, suggesting that lateral transfer often precedes promotion in career line formation (columns 1 and 2). The exchange networks of different personnel, such as chief officials and non-chiefs, do not have significant impacts on each other, which suggests that the mobility channels differ for individuals in various positions (columns 3 and 4). The effects from other independent variables on the multiplex network formation processes are substantively similar to findings from the saturated model in Table 7.1 (column 4).

Insert Table 7.2 about here

The patterns of career lines hence indicate that hierarchical job ladder exists for rank progression but is largely absent among work units across administrative levels. Upward movement to higher-level organizations is highly exceptional, whereas downward and lateral mobility are much more common ways of advancing one's career. This contrasts with one of the fundamental assumptions about internal labor markets and shows that the possibility of upward movement to higher administrations is severely limited based on one's structural locations. It is hence important to understand what career prospects are associated with various work units, and the distribution of opportunities among different types of organizations.

7.2 Stochastic Analysis

The semi-Markov process analysis brings insights into the distinctive prospects associated with work unit categories (see the taxonomy of units in Figure 7.6). One aspect is career immobility, which is estimated as the probability of staying in the same work unit based on organizational taxonomy. The results, as plotted in Figure 7.7, show that all types of units have declining probabilities over time, meaning that individuals in general change jobs over tenure. The nexus type, however, has the sharpest decline in the staying probabilities, which means that employees have faster turnover from these departments. The other three types have indistinguishable patterns in staying probabilities, as they have similar declining trends with overlapping confidence intervals.

Insert Figure 7.7 about here

Although the staying probabilities reveal career immobility associated with organizational types, it remains unclear how the behaviors of organizations vary based on their typological differences. The variation is described in Figure 7.8, which shows the transition probabilities from one type of units to another relative to same-type retention rates. We observe from the figure that different organizational types have varied exchange patterns, although dead-end units are the most likely destinations for all. This is expected since the dead-end departments are pre-retirement arrangements, and the risk of retirement increases with tenure as officials advance in age. Once employees enter the retirement areas, they have significantly lower chances of transitioning to other types of departments. Interestingly, the other three types also display different behaviors in personnel exchange: specialist organizations are in fact more likely to send employees to nexus than retaining them, whereas employees in the feeder organizations are more likely to change jobs to

others than staying. Individuals in the nexus organizations, however, would rather stay in departments of the same type, as those in nexus organizations are less likely to go into feeder and specialist units. This means that although employees of the nexus organizations have the highest mobility rates, job transitions mainly happen between units of the same type to preserve power and status. These findings confirm the empirical implications from section 5.3 by showing the varied channels of mobility associated with work unit categories, based on their power and status in exchange relations.

Insert Figure 7.8 about here

7.3 Summary and Discussion

The theoretical and empirical analyses of this part use career lines as a lens for investigating job ladders and opportunity distribution in internal labor markets. Using the context of mobility in the Chinese bureaucracy, I examine personnel flows among work units to derive the shapes and distributions of job ladders among organizational units. The landscape of career mobility, however, reveals surprising patterns that challenge the predominant assumption about ILM's. The most unexpected finding is the distribution and shapes of job ladders. Hierarchical ladder, while certainly exists for rank progression, is largely absent within functional lines across administrative levels. This shows that the paths of career advancement are far from being a steady progression of specialized skills but occur horizontally or even downward across domains. This is largely related to the institutional structure of the bureaucracy, in which resources and opportunities are controlled by the sectorial authority of the communist party, leaving limited room to officials at lower levels in career advancement.

The only exceptions to the absence of hierarchical ladders, however, respectively occur in the most powerful and the most specialized domains. This presents an interesting relationship between the shapes of job ladders and organizational typology, as career advancement happens through varied channels in different types of work units. Only the most powerful units with a major share of opportunities and resources, and the most specialized ones that shield employees from external competition, provide streamlined paths of advancement consistent with the assumption on job ladders. Employees in other units that do not have enough power or insulation are subject to intense competition, leading to less structured movement. This result, while surprising at first, is in fact consistent with the theoretical prediction of organizational ecology in resource competition (Carroll 1985). It is hence a promising direction to compare the structure of career lines from an alternative labor market for future generalization.

The theoretical and empirical analyses not only examine the relationship between career lines and opportunity structure, but also show that they are dynamic constructs evolving with time. The formative process of career lines raises further questions on the interplay between institutional structure and informal status of organizations. How does the opportunity structure change over time, due to status change of work units during specific periods? To what extent is the finding on the absence of hierarchical ladders attributed to the institutional specifics of the organization? These questions lead to future historical and comparative analysis of the Chinese bureaucracy with an alternative labor market, with the empirical methodologies developed here as a toolkit for in-depth investigation.

Table 7.1 Estimates from Nested Siena Models on Career Line Formation

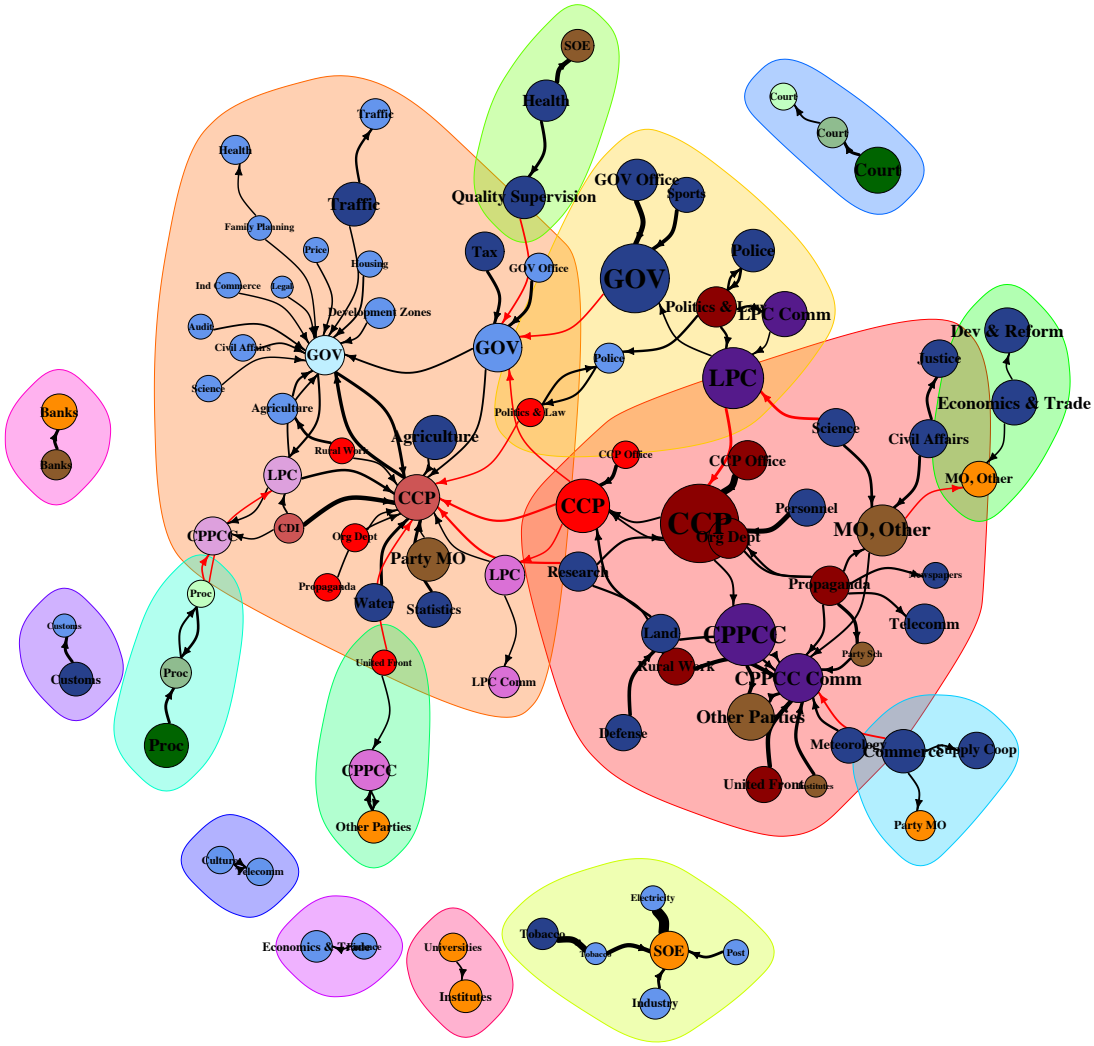
	(1)	(2)	(3)	(4)
Network Properties				
Outdegree (density)	-2.92***	-2.83***	-2.82***	-2.80***
	(0.02)	(0.04)	(0.04)	(0.04)
Reciprocity	1.03***	1.00***	1.01***	1.00***
	(0.05)	(0.05)	(0.05)	(0.05)
Dyadic Attributes				
Hierarchical Ladder	-1.85***	-1.99***	-1.44***	-2.32***
	(0.07)	(0.07)	(0.12)	(0.29)
Same domain	0.84***	0.85***	0.76***	0.76***
	(0.03)	(0.04)	(0.04)	(0.04)
Organization Attributes				
Power (ego)	0.20***	0.10***	0.10***	0.09***
	(0.01)	(0.01)	(0.01)	(0.01)
Power difference	0.27***	0.24***	0.24***	0.24***
	(0.01)	(0.01)	(0.01)	(0.01)
Size (alter)	0.10***	0.07***	0.07***	0.07***
	(0.01)	(0.01)	(0.01)	(0.01)
Size (ego)	0.44***	0.49***	0.50***	0.50***
	(0.01)	(0.01)	(0.01)	(0.02)
Organization Category				
Specialist (alter)		-0.55***	-0.55***	-0.56***
		(0.03)	(0.03)	(0.03)
Specialist (ego)		-0.16***	-0.17***	-0.19***
		(0.04)	(0.05)	(0.05)
Nexus (alter)		-0.29***	-0.30***	-0.30***
		(0.03)	(0.03)	(0.03)
Nexus (ego)		0.67***	0.66***	0.65***
		(0.04)	(0.04)	(0.04)
Feeder (alter)		-0.61***	-0.62***	-0.62***
		(0.04)	(0.05)	(0.04)
Feeder (ego)		0.20***	0.19***	0.17***
		(0.05)	(0.05)	(0.05)
Interactions				
Same domain × hierarchical ladder			1.15***	1.19***
			(0.13)	(0.14)
Size (ego) × hierarchical ladder			-0.76***	-0.71***
			(0.07)	(0.07)
Power (ego) × hierarchical ladder			0.27***	0.30***
			(0.05)	(0.05)
Specialist (ego) × hierarchical ladder				1.13***
				(0.31)
Nexus (ego) × hierarchical ladder				0.78**
				(0.28)
Feeder (ego) × hierarchical ladder				1.07***
				(0.31)
Rate Parameters	Y	Y	Y	Y
Time Dummies	N	Y	Y	Y
Overall maximum convergence ratio	0.16	0.16	0.14	0.19

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 7.2 Estimates from Siena Models on Multiplex Networks of Career Lines

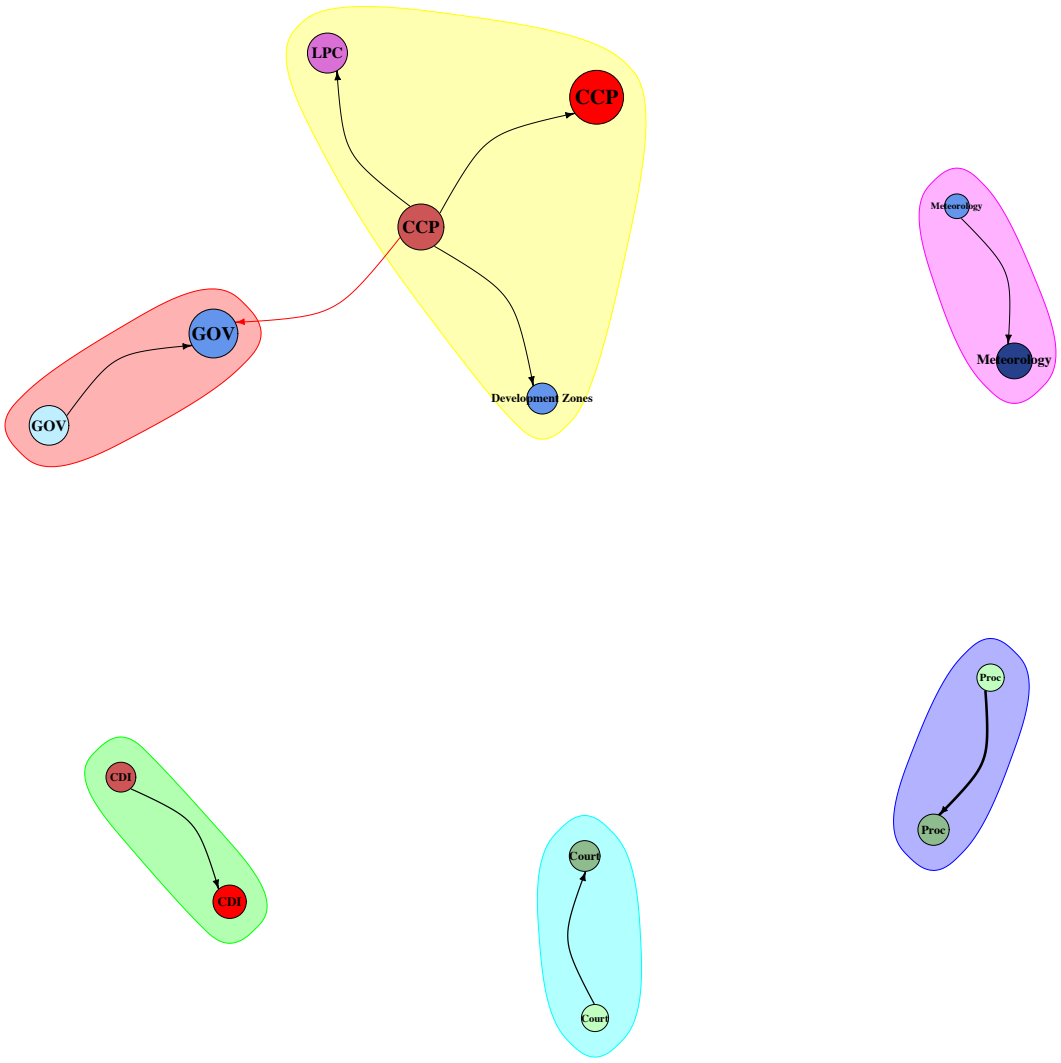
	Promotion	Lateral Transfer	Chief Exchange	Non-Chief Exchange
Network Co-evolution				
Lateral transfer networks	1.24***			
	(0.31)			
Promotion networks		0.72*		
		(0.28)		
Non-chief exchange networks			3.36	
			(1.88)	
Chief exchange networks				2.34
				(1.27)
Network Properties				
Outdegree (density)	-5.06***	-3.01***	-7.29***	-2.89***
	(0.20)	(0.20)	(0.48)	(0.07)
Reciprocity	0.10	1.01**	0.97	1.01***
	(0.30)	(0.33)	(1.04)	(0.17)
Dyadic Attributes				
Hierarchical ladder	-2.00***	-1.94	-8.49	-1.56***
	(0.50)	(1.16)	(8.54)	(0.23)
Same domain	0.90***	0.79***	0.64*	0.72***
	(0.20)	(0.11)	(0.28)	(0.15)
Organization Attributes				
Power (ego)	0.19**	0.05	-0.19	0.12***
	(0.07)	(0.05)	(0.20)	(0.03)
Power difference	0.32***	0.20***	0.11	0.24***
	(0.06)	(0.02)	(0.13)	(0.01)
Size (alter)	0.18***	0.05	0.28*	0.05**
	(0.04)	(0.04)	(0.12)	(0.02)
Size (ego)	0.87***	0.57***	0.77*	0.49***
	(0.05)	(0.04)	(0.38)	(0.07)
Organization Category				
Specialist (alter)	-0.55**	-0.66***	-0.4	-0.54***
	(0.19)	(0.07)	(0.52)	(0.06)
Specialist (ego)	-0.60*	-0.18	0.44	-0.24**
	(0.26)	(0.16)	(0.48)	(0.09)
Nexus (alter)	0.11	-0.51***	-0.47**	-0.27***
	(0.21)	(0.06)	(0.17)	(0.07)
Nexus (ego)	1.20***	0.66***	0.79	0.68***
	(0.12)	(0.14)	(0.61)	(0.07)
Feeder (alter)	-0.39	-0.75***	-0.41	-0.62***
	(0.31)	(0.09)	(0.22)	(0.09)
Feeder (ego)	0.20	0.26	0.94	0.16
	(0.18)	(0.17)	(0.73)	(0.11)
Interactions				
Same domain × hierarchical ladder	1.88***	1.17***	2.4	1.22***
	(0.31)	(0.32)	(3.13)	(0.29)
Size (ego) × hierarchical ladder	-0.71***	-0.75	0.25	-0.72**
	(0.21)	(0.56)	(0.84)	(0.27)
Power (ego) × hierarchical ladder	0.16	0.42***	1.55	0.25
	(0.21)	(0.11)	(1.40)	(0.15)
Specialist (ego) × hierarchical ladder	1.23***	-0.23	3.88	0.35
	(0.35)	(0.89)	(3.21)	(0.62)
Rate Parameters	Y	Y	Y	Y
Time Dummies	Y	Y	Y	Y

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$



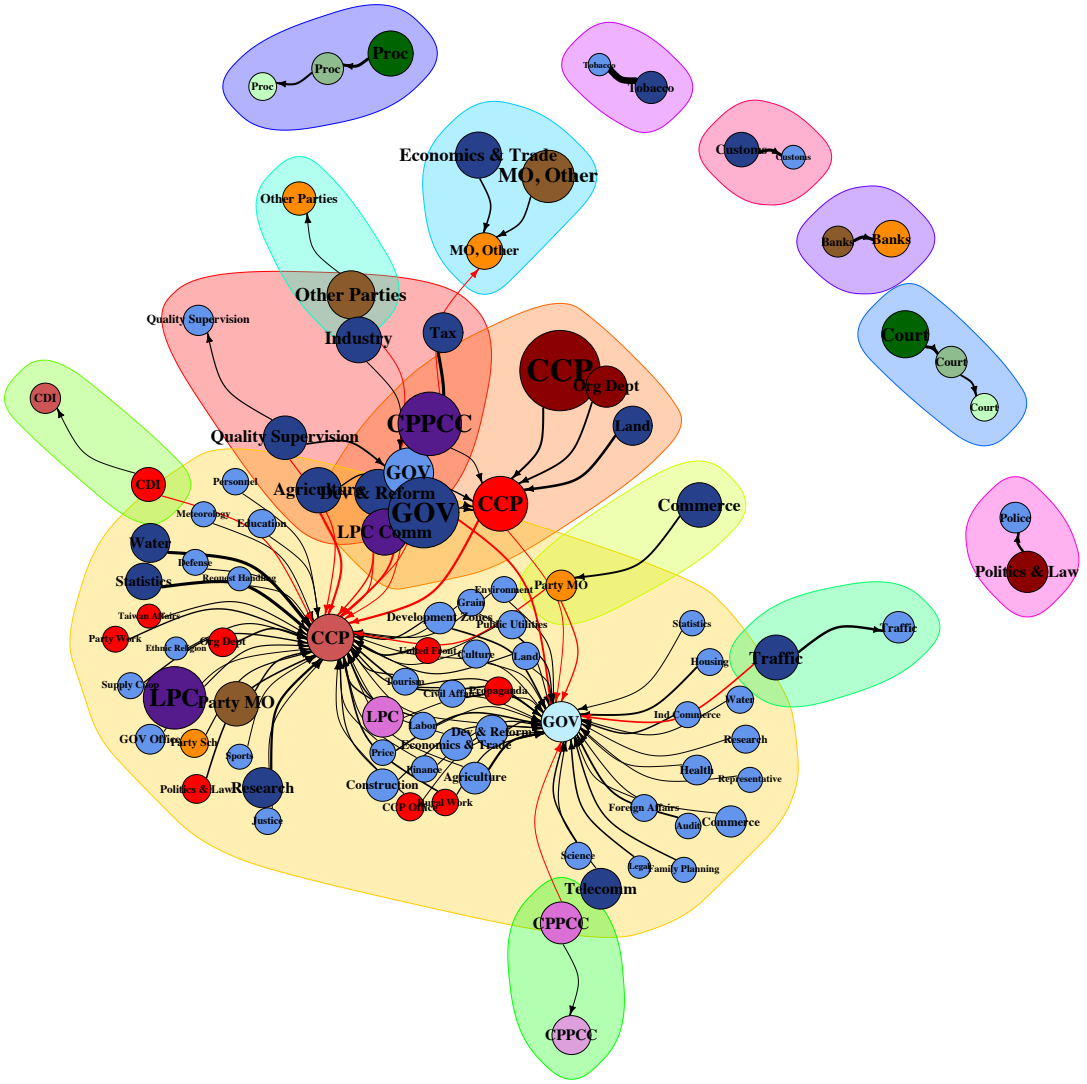
	CCP	GOV	LPC/CPPCC	Judiciary	Others
Provincial					
Prefectural					
County/District					

Figure 7.1 Network of Career Lines



	CCP	GOV	LPC/CPPCC	Judiciary	Others
Provincial					
Prefectural					
County/District					

Figure 7.2 Hierarchical Ladders of Lower- to Upper-Level Units



	CCP	GOV	LPC/CPPCC	Judiciary	Others
Provincial					
Prefectural					
County/District					

Figure 7.3 Downward Mobility from Upper- to Lower-Level Units

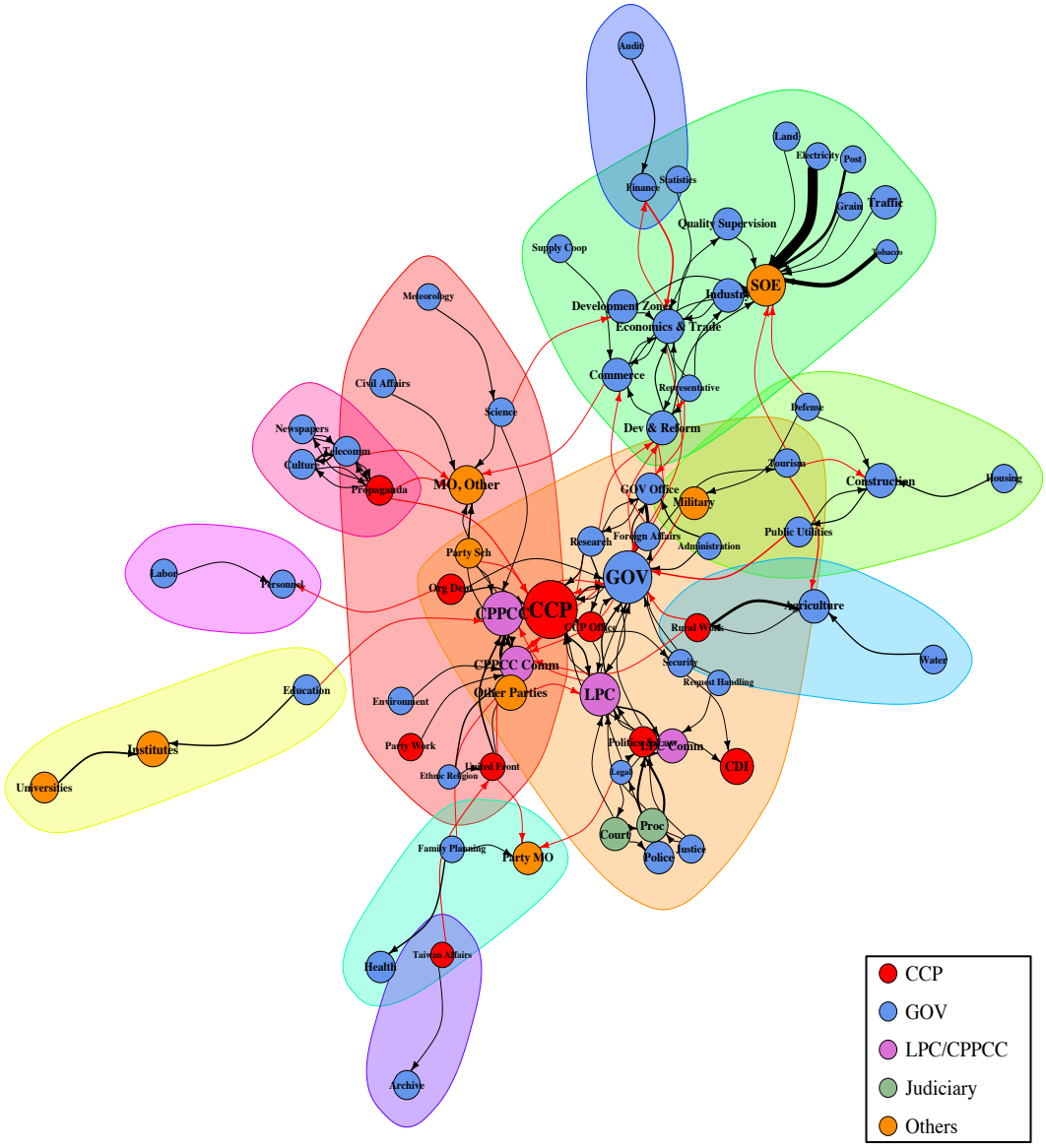


Figure 7.4 Career Lines among Prefectural Bureaus

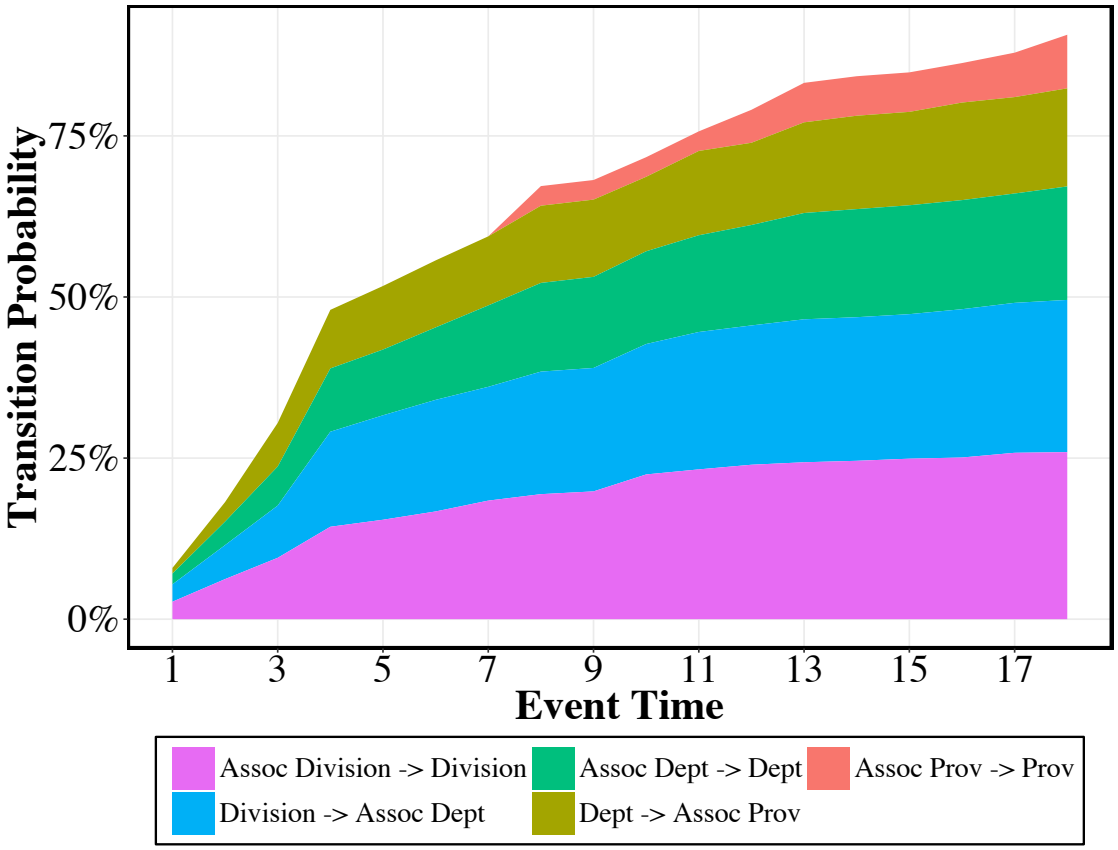


Figure 7.5 Rank Progression over Time

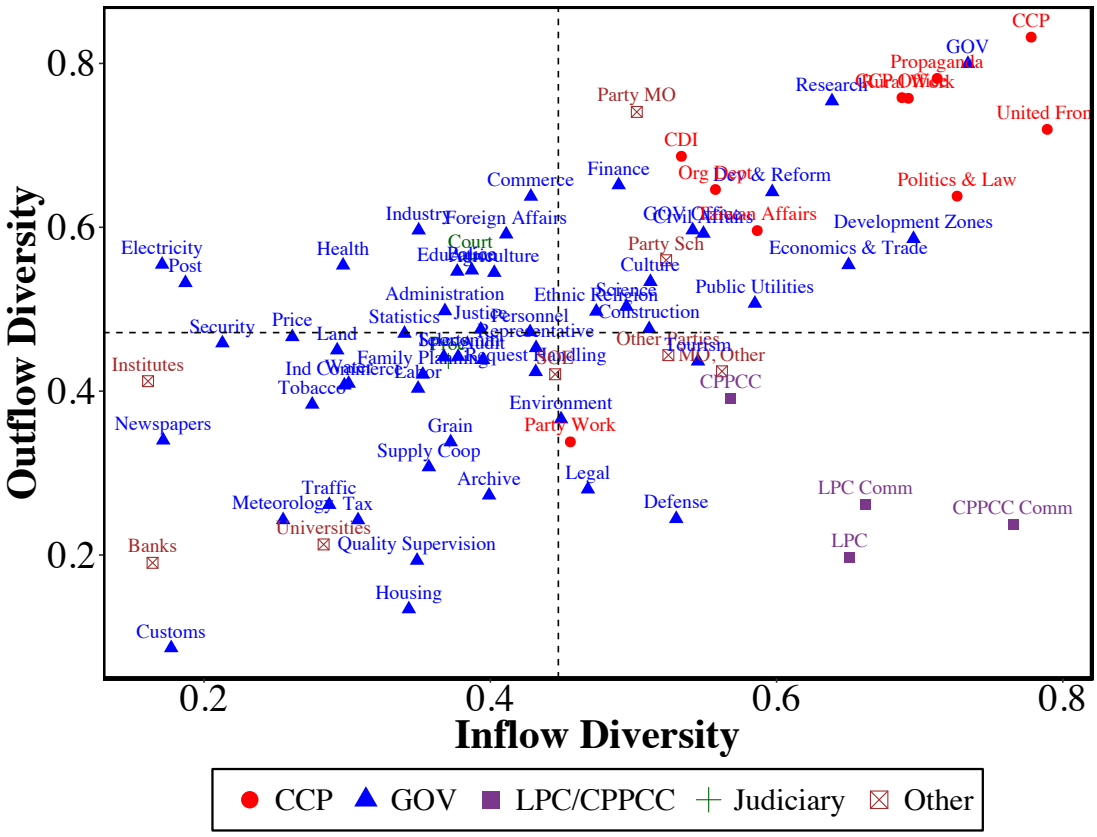


Figure 7.6 Empirical Taxonomy of Work Units

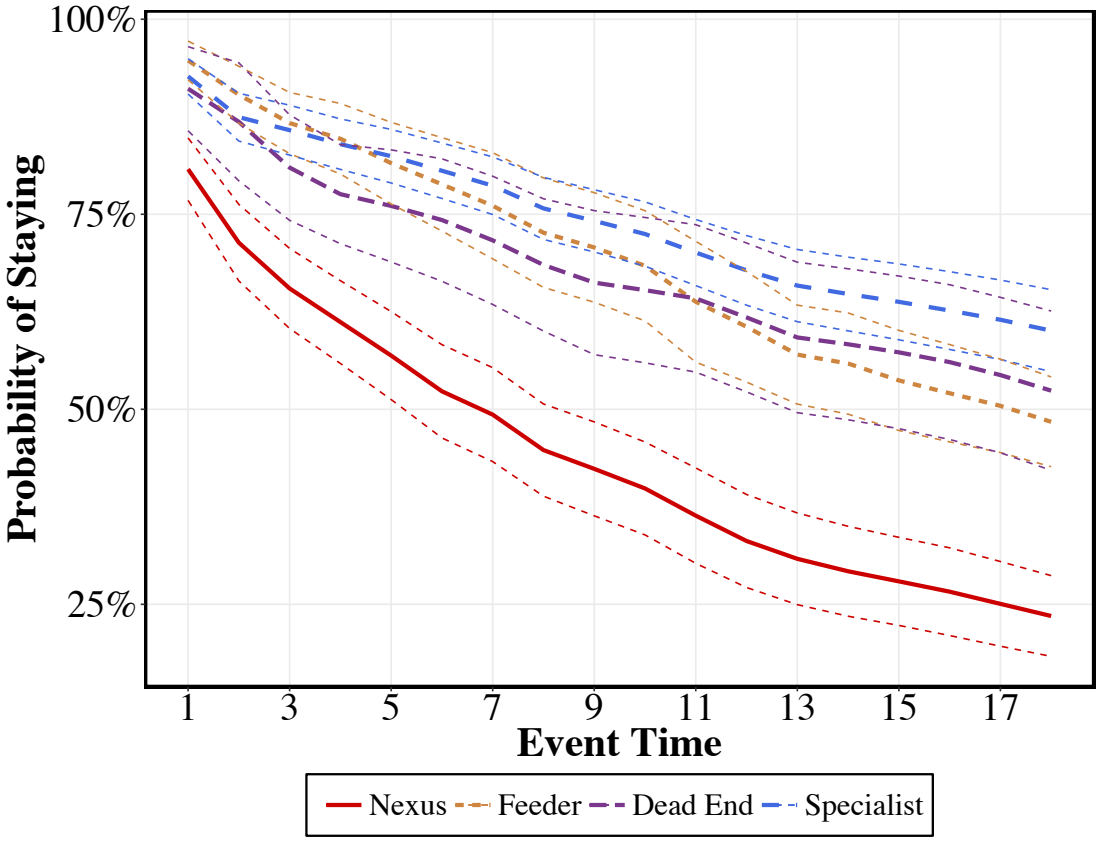


Figure 7.7 Staying Probability over Time by Organizational Typology

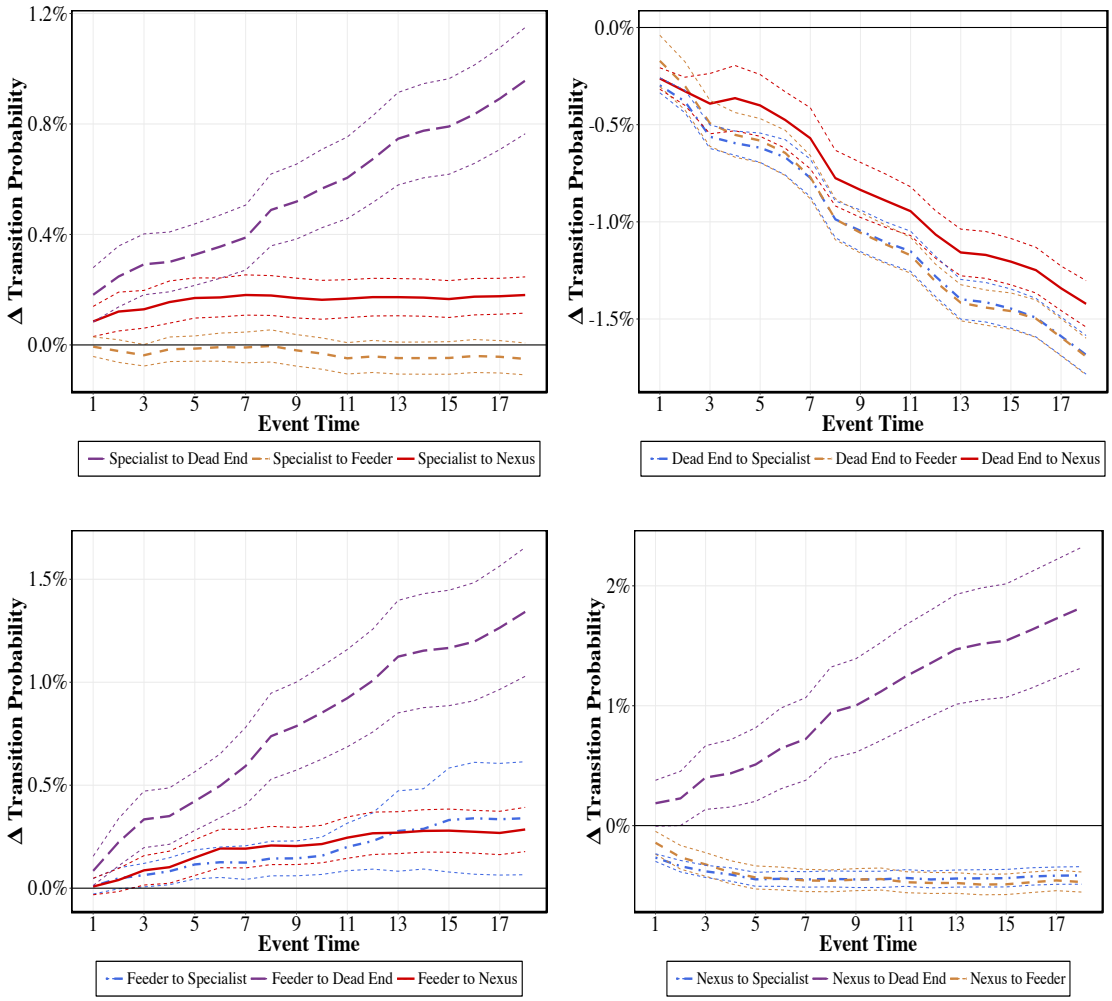


Figure 7.8 Difference between Probabilities of Employee Retention and Transition to Other Types

Part III. The Tale of Two States:

The Political Management of Civil Service Experience

Chapter 8. Bureaucracy in Comparison

Career mobility in civil service bureaucracy has important implications for state development and labor market dynamics. Past studies have associated the characteristics of bureaucracy with economic progress, as Weberian state features arguably facilitate better growth trajectories (Evans and Rauch 1999; Rauch and Evans 2000). Theories that attribute state development to Weberian bureaucracy, however, cannot explain the outcomes of the largest growing nations, China and India, which deviate from standard growth predictions despite of their administrative features. Approaching this puzzle first depends on an understanding of the processes of bureaucratic elite selection, from which we infer state characteristics as well as their relationships to long-term development.

Past research emphasizes the mechanisms of specialization and political connection in bureaucratic mobility, which reflect the dichotomy of Weberian and patrimonial bureaucracies with different implications for development and individual careers. On the one hand, administrative career favors specialized experience, which is a fundamental feature of the division of labor and facilitates advancement in both internal and external labor markets. Explanations of this phenomenon, however, typically relate specialization to meritocratic selection, as focused experience sends a clearer quality signal than diverse background (Ferguson and Hasan 2013; Leung 2014; Zuckerman et al. 2003). On the other hand, politicization of administrative appointment is a common feature across nations. In electoral politics, politicians impose varied constraints on bureaucrats and appoint loyal supporters to facilitate interest alignment (Wood and Waterman 1991). In authoritarian

regimes, the political influences that favor the better connected are distributed through factions, sponsorship, and local patronage networks (Li and Walder 2001; Nathan 1973; Scott 1972).

Although theories typically portray specialization and political connection as competing mechanisms of career mobility, a critical issue is regarding the variability of their relationships under different circumstances. Connection and experience are interrelated aspects, as the former can shape the latter and lead to favorable career outcomes. Their relationships, however, vary by contexts in which different modes of political control produce distinctive mobility patterns (Meyer-Sahling 2008). It is possible that specialization and connection provide competing routes of advancement when the politically connected build careers differently from the highly skilled. However, political authorities can move their supporters to positions for better experience, as strategic appointment is commonly used as a means of controlling the civil services (Iyer and Mani 2012). Furthermore, both specialization and connection are related to the structural aspect of career lines, which is a common feature of labor markets in producing differential experiences and workplace associations (Spilerman 1977). It is hence critical to investigate the relationships among these mobility mechanisms, such as how they interact under varied conditions in jointly shaping career movement.

An additional issue is regarding the temporal dynamics of specialization and political connection, which imply different stability of careers based on experience and network. The meanings of connections and experience change over time and career stage, during which their interpretations vary. For instance, whereas specialization facilitates obtainment of entry-level jobs, its advantage declines over career stage and is discounted

in management hiring, due to limited exposure to alternative experience (Merluzzi and Phillips 2016; Zuckerman et al. 2003). The same political connection that used to bring advantage becomes a liability under a different regime, due to the changing perceptions of loyalty through one's affiliations (Siegel 2007; Zhu and Chung 2014). The temporal dynamics of connection and experience hence imply different levels of career stability, due to the underlying logics through which they influence mobility patterns.

The most daunting obstacle in theory development, in addition to the above issues, is the generalizability problem. The contrasts among bureaucracies in different political systems, such as western democracy, post-communist and authoritarian regimes, imply limited scope conditions, based on which theories are typically developed and tested. Understandably, arguments derived from a single institutional environment encounter skepticism when they are applied to alternative settings, due to the presumed variation among institutions and political systems. The limited scope conditions, while constraining theory generalization, are rarely the subject of investigation due to the lack of comparative focus.

The current research addresses these issues using a comparative analysis of the state bureaucracy of China and the Indian Administrative Service (IAS). The most important distinction between these bureaucracies is their relationships to the political parties: whereas the IAS maintains party neutrality, the Chinese bureaucracy is both a political and administrative apparatus, following a dual-authority structure organized around the Communist Party. The distinctive relationships and boundaries between bureaucrats and politicians imply different modes of political control, which produce differential emphases on mobility mechanisms in each administration. The study not only directs our attention to

the impact of institutional context on career mobility, but also investigates the interactions between mechanisms for understanding how they provide competing, or complementary routes of advancement in varied contexts. The analysis further considers the impact of organizational structure on career mechanisms in suggesting the similarities and variations across labor markets. This comparison thus presents the first systematic analysis of bureaucracies in democratic and authoritarian regimes, attempting to bridge the scope conditions while highlighting the institutional nuances of political control on bureaucratic experience. The contexts of the bureaucracies guide theoretical discussion and are described in the next section.

8.1 Political Systems of India and China

As organizational mobility is embedded in the institutional and political environments, the first point of comparison is the political systems of China and India that represent contrasting polities: whereas India is a multi-party parliamentary democracy with competitive election, China is an authoritarian regime ruled by the Chinese Communist Party (CCP).[23] Differences in the political systems provide the backdrop of comparison, which suggests dissimilarities in organizational dynamics and mobility mechanisms. Nonetheless, state bureaucracies in both countries share the functional division between administrative and political authorities, with distinctive relationships between bureaucrats and politicians.

[23] Although China is a one-party system, there are eight other democratic parties that participate in political consultation. These parties, however, are ultimately ruled by the CCP.

Elections in India are held every five years in both the central and the 28 state governments. Whereas countrywide elections are won by a small number of national parties, more than 40 local parties won state elections between 1970 and 2015. Most of the time, elections are accompanied by party flips. Such intense political competition means that no single party controls access to administrative jobs, whereas competing logics of merit and loyalty exist in personnel selection. The top politician of the country is the prime minister, who is the leader of the majority party that wins the election. The nominal head of the state is the president, who is not directly elected but chosen by an electoral college. This division of political and administrative leadership also exists at the local level, as states are managed by the chief minister (the local majority party leader) and the governor (executive bureaucrat). Local politicians, however, typically have more power and influence than the chief bureaucrats, as the latter provide administrative assistance and report to the former in decision-making. Politicians, however, change regularly due to competitive election, whereas career bureaucrats stay for a long period (Gupta 2015). This implies career stability of the IAS officers, who are constitutionally protected against dismissal from local politicians and are required to maintain neutrality: the IAS officers cannot join parties or participate in election. Such political autonomy portrays an image of meritocracy. Politicians, however, still have an incentive to control bureaucrats through strategic appointments, as Iyer and Mani (2012) found that officers are more frequently moved following elections.

In contrast, the line between bureaucrat and politician is blurred in the Chinese bureaucracy. The civil service administration in China integrates the political party into the bureaucracy to form a dual-authority structure, with the administration in each locality

organized around the CCP and the government (Landry 2008; Liberthal and Lampton 1992; Perry and Goldman 2009). Senior officials are appointed according to a nomenklatura list, and their positions are subject to the discretion of the Organizational Department and local party secretaries. This means that loyalty screening is an institutional feature based on the intertwining of political and administrative apparatus. Parallel to the state executives in India, the political leader of a Chinese province is the provincial CCP secretary, whereas the top administrator is the governor. Local leaders in both the government and the CCP are elected every five years during the People's Congress, although the elections are non-competitive as the results are typically fixed beforehand (O'Brien 1994). The top bureaucrats, at the same time, are also politicians, as the local CCP secretary is the most powerful figure and the de facto bureaucratic leader. Thus, an important feature of the communist bureaucracy is the interweaving mobility paths among the party and the government, as well as personnel exchange with social organizations and state-owned enterprises. This distinctive pattern forms an interconnected web of interest with the communist party at the center to maintain political control (Gazsó 1992; Kornai 1992). Unlike the impartiality requirement of the IAS, virtually all elite cadres in the bureaucracy are party members, as personnel selection requires party affiliation and ideological conformity (Csanádi 1997; Walder 1986). As loyalty is an organizational principle, individuals with strong political affiliations are systematically preferred in cadre selection and sponsored early into leading administrative positions (Oi 1985; Walder 1995; Walder, Li, and Treiman 2000).

8.2 Career Mobility in Two Bureaucracies

Despite the institutional differences between the political systems, career mobility in the IAS and the Chinese bureaucracy share similar aspects that are typical to internal labor markets. Both bureaucracies recruit entry-level officers by highly competitive civil service exams. The IAS is an elite national bureaucracy and the topmost layer of the Indian government. Between 1970 and 2015, it has recruited 5095 officers,[24] most of whom enter through an extremely competitive process that consists of three stages: preliminary exams, main written exams, and interview. As of 2016, 459,659 applicants took the preliminary exam, 1209 were recruited into various government branches, whereas only 180 vacancies were available in the IAS.[25] A small percentage of officers, only 11 percent, are promoted from the local state civil service. These officers enter at a much later age, with limited promotion prospects and different career patterns (Ferguson and Hasan 2013:239). The Chinese civil service exam is also a highly competitive process that has been established since the 1980s. Entry-level cadres at the township or section rank are recruited through pubic exams that include three components: general written exams, specialized subject tests, and interviews. During the application process, candidates fill out their choices of departments and take the corresponding exams for which the subject tests vary. The selection rate in 2017 is 1:50, with 1.5 million people competing for less than 30,000 government positions nation-wide.[26]

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[24] The statistics are based on the data used for the empirical analysis.

[25] Clear IAS. 2017. "The Number of Candidates who Apply for IAS Exam – How Fast is the UPSC CSE Competition Increasing?" Retrieved May 7th, 2018 (https://www.clearias.com/number-of-candidates-apply-ias-exam/).

[26] Business Insider. 2017. "1.5 Million People Signed Up for a 5-Hour Test to Get a Government Job in China." Retrieved May 7th, 2018 (http://www.businessinsider.com/china-civil-service-exam-2017-11).

The extremely competitive nature of the civil service exams is due to the prestige and job security of bureaucratic careers: once recruited, civil servants in both countries enjoy life tenure and extensive welfare benefits, such as housing, health care, and retirement pensions. The prestige of jobs further depends on the nature of responsibilities and power. The IAS officers occupy some of the most important government positions, managing tasks such as district administration, policy and program implementation, law and order, and state-owned enterprises (Iyer and Mani 2012). They are the "managers of managers" who receive generalist training and rotate regularly among various positions (Ferguson and Hasan 2013:236). A comparable set of officials in the Chinese bureaucracy is the elite cadres who perform managerial roles, such as local leaders, bureau chiefs and department directors. Their generalist responsibilities are not limited to the functional division of the work units, providing them with more mobility across domains than the rank-and-file staff.

Job vacancies in the civil services are filled by appointment, whereas individuals have limited agency of self-selection. Officers in the IAS are initially assigned to state cadres following a quasi-random process. A regular recruit is allotted to a state based on their name's alphabetical order, irrespective of exam performance and individual choice. The only way to change one's allotment is through marriage. In the Chinese bureaucracy, cadre management follows a "one-level-down" system, in which superiors at the higher-level administration appoint officials at the lower level (Landry 2008; Perry and Goldman 2009). Appointees to leading cadre positions, such as bureau chiefs and department heads, are jointly decided by the bureau, the Organization Department at the next higher level, and the local CCP committee. Due to the appointment systems, individuals in the IAS and

the Chinese bureaucracy have limited role in choosing their career destinations, reducing self-selection typically found in other labor markets.

Advancement in both bureaucracies is marked by rising through the ranks, whereas early-career promotions are largely seniority-based. Most of the IAS officers start as subdistrict magistrates, managing local affairs and taxes. After four years of service, officers are automatically promoted to the senior pay scale and become eligible for central government posting.[27] Similarly, rank promotion in the Chinese bureaucracy is based on seniority and tenure, as those promoted to the division level (two ranks above the entry level of township/section grade) shall have at least five years of tenure and two rotational experience at the lower level.[28]

Certain mobility events, however, are more competitive and become common goals for career aspirants at different stages. Early-career goals in the IAS are deputation to the central government in New Delhi, which brings prestige and honor of service (Ferguson and Hasan 2013). A list of officers, selected by the state government, is forwarded to the Center, which in turn circulates the names among Ministries for decision. An approved list is then sent back to the state government, and the selected officers are appointed to specific central posts.[29] In comparison, mobility to a powerful office in the Chinese bureaucracy is a common ambition, and the most powerful bureaus in each locality are the CCP and the

[27] Department of Personnel and Training. 2000. "Principles Regarding Promotion of Members of the Indian Administrative Service and Composition of Departmental Promotion Committees." Retrieved April 9th, 2018 (http://dopt.gov.in/sites/default/files/IASPromotionGuideLines_1.pdf).

[28] Central Party Committee. 2002. "Regulations on the Work of Selecting and Appointing Leading Party and Government Cadres." Retrieved February 20th, 2017 (http://www.china.org.cn/english/congress/226530.htm).

[29] Ministry of Personnel, Public Grievances, and Pensions. 2007. "Consolidated Deputation Guidelines for All India Service Officers." Retrieved May 9th, 2018 (http://ifs.nic.in/deputation/con-depu%20guide.pdf).

government headquarters. These headquarters are the centers of political power, and their positions provide superior prospects due to the proximity to power and rich access to opportunities. Therefore, appointment to a local CCP or government headquarter is a shared goal of officials in the Chinese bureaucracy and a comparable event to central deputation in the IAS.

Late career achievement in the IAS is marked by empanelment, which is a competitive event for officers who have completed at least twenty years of service. Empanelment as joint secretary in the Center is a prerequisite for becoming a secretary, the highest bureaucratic position in India. It is a highly prestigious event, showing one's superior accomplishment through a rigorous screening process on prior performance and experience. A similar landmark event in the Chinese bureaucracy is promotion to the department level (*ting ji*), a rank typically held by prefectural CCP secretary, mayor, and provincial department directors. Department-level cadres are an extremely small set of elites and are considered as the senior-most officials in prefectural bureaucracies. Ideally speaking, it takes 25 years to achieve this rank from an entry-level position, whereas most cadres retire before ever realizing this goal. Promotion to the department rank hence marks an official's late-career accomplishment by obtaining a highly prestigious position in the Chinese bureaucracy.

Besides the early- and late-career milestones, moving to varied destinations entails different prospects. Some departments wield more political power in economic and policy domains, providing access to financial resources and lucrative rewards, and their jobs provide superior prospects and opportunities. This, however, is a generic feature across contexts, since a latent opportunity structure commonly exists in labor markets and

organizations. Based on prior publications and field interviews with officials, I identify the important offices in each bureaucracy. According to Iyer and Mani (2012:730), the important offices in the IAS include Commerce, Finance, Consumer Affairs and Food, Health, Home, Industries, Water Resources, Public Works, Urban Development, and posts in the central government. A comparable set of departments in the Chinese bureaucracy consists of the Organization Department, the Propaganda Department, the Commission for Discipline Inspection, the Development and Reform Commission, the Economic Commission, the Political and Legal Affairs Commission, the Finance Bureau, the Traffic Bureau, the Bureau of Public Security, as well as the local CCP and government headquarters.

An important distinction between mobility patterns, however, exists between the IAS and the Chinese bureaucracy. Whereas the IAS officers are generalist managers with regular rotations, local Chinese officials, especially those at the lower ranks, tend to have less frequent positional change. Emphasis in personnel selection, however, is invariably put on generalist rotation as a prerequisite for promotion to leadership roles. This implies that specific skills may not be very important, whereas career patterns entail different meanings in each administration.

The experience of an IAS officer is built up through regular rotation among posts since early careers, similar to managerial rotation in large corporations. Officers accrue major experiences from each posting (see Table A-3), although excessive diversity is not recommended.[30] From the variety of work experience, officers build up areas of expertise,

[30] Department of Personnel and Training. "Executive Summary". Retrieved May 8th, 2018 (http://dopt.gov.in/committeereports/executive-summary).

as well as political connections. In contrast, local Chinese officials typically work in concentrated areas until they reach leadership positions. The bureaucracy is characterized by immobility of lower-rank officials, and frequent rotation of leading cadres in preventing local faction building around the elites (Li and Bachman 1989). The mobility rates, however, differ across departments and organizational tracks, as important bureaus tend to provide faster turnover and better rotational chances (see a list of bureaus in Table A-4). Since job mobility is a frequent event in the IAS and relatively rare in the Chinese bureaucracy, specialization could be perceived differently in each context. In particular, whereas specialization implies quality in the IAS, concentrated experience in a low-prestige job in the Chinese bureaucracy would signal low quality and lack of opportunities. The underlying mechanisms through which specialization affects career are hence likely to differ across contexts. In particular, there are distinctive relationships between career experience and connection, whereas their interactions with the organizational structures entail varied mobility consequences. The theoretical implications of these institutional conditions are discussed in the following section.

8.3 Specialization and Political Connection in Bureaucratic Mobility

Specialization and political connection imply different logics of bureaucratic selection, as the former signals quality whereas the latter loyalty. These mechanisms are found to provide competing routes of advancement in the IAS (Ferguson and Hasan 2013; Iyer and Mani 2012). One career path is based on professional accomplishment, as competitive elections render no party hegemony on the administration, which means that loyalty to any politician or party would not facilitate advancement beyond their tenure. Instead, officers

who pursue the professionalization path build up profiles through specific experiences. Focused experience signals latent abilities based on skills and identity: specialization shows the accumulation of human capital in category-specific training, which improves one's productivity in related jobs (Althauser 1989; Becker 1962; Rosen 1972). The evaluations of experience patterns further depend on employers' perception of the associated identities. Whereas generalist identities are shared by the multi-talented as well as the less skilled, the difficulty of differentiating a "Renaissance person" from a dilettante renders specialization a clearer and preferred quality signal (Hsu 2006; Leung 2014; Zuckerman et al. 2003).

Although the selection on specialized experience implies a meritocratic orientation, the IAS is no exception from political influences. Whereas party alternation breaks the continuous nature of political control by a single regime, political influences are distributed through personal networks that signal loyalty and partisan affiliation. In electoral politics, politicians hand out favors in public jobs and resources for supporters' loyalty (Weingrod 1968:379). The particularistic treatment in the IAS is reflected in the strategic transfer of officers to positions of varied importance, which is used as a means of political control through career rewards and punishment, especially after elections (Iyer and Mani 2012).

Hypothesis 1: Specialization and political connections both have significant effects on career advancement in the IAS.

Whereas the contrast between specialization and political connection illuminates the competing paths of ability- and loyalty-based careers, their relationship is beyond a simple dichotomy. A step towards understanding the relationship is to address the tradeoff in their opportunity costs: whereas specialization limits one to specific areas that are likely

to produce redundant ties, the benefit of connections typically comes from network diversity that spans distant circles (Granovetter 1973; Burt 1992, 2004; Padgett and Ansell 1993). This tradeoff, however, is unproblematic when focused experience builds connections that truly matter. If a diverse range of connections allows one to reach important contacts who influence careers, then focused experience in an area that provides the same access would result in similar benefit (Lin and Bian 1991; Lin, Ensel, and Vaughn 1981; Wegener 1991).

In the Chinese bureaucracy, administrative jobs are controlled by the ruling Communist Party, while loyalty is a dominant requirement for holding higher offices (Walder 1986, 1995). Individuals who demonstrate party loyalty early on are sponsored into administrative fast tracks (Li and Walder 2001; Walder, Li, and Treiman 2000). As connections indicate loyalty, having the right affiliations facilitates getting ahead whereas diverse ties send ambiguous signals. This is supported by the findings on the positive effect of strong ties to job-handing officials (Bian 1997) and the negative return to brokerage in Chinese firms (Xiao and Tsui 2007), as who a person knows matters more than the range of their circles. In a context where loyalty is the predominant factor, experience that leads to the right connections brings career return, be it specialization or generalism. This suggests that connection and experience complement each other in the Chinese bureaucracy, in which job opportunities are controlled by the political authorities and loyalty is systematically preferred.

Hypothesis 2: Political connections have larger effects on career advancement in the Chinese bureaucracy than in the IAS.

Hypothesis 3: Specialization and political connection have a positive interaction effect on career advancement in the Chinese bureaucracy.

Furthermore, connection can transform into favorable experience in facilitating the advancement of loyal officials. The practice of strategic appointment is a common feature in civil services, which assists interest alignment between bureaucrats and politicians. These appointments, on the one hand, provide career incentives to encourage subordinates' loyalty, and on the other hand expand the influence of politicians' networks by boosting the positional importance of their associates. As mentioned before, politicians strategically transfer officers in the IAS for political control. Similarly, getting ahead in the Communist bureaucracy depends on one's political affiliations, as important positions are occupied by members of different factions in power sharing (Dittmer and Wu 1995; Shih, Adolph, and Liu 2012). Strategic appointment, as a political control strategy, extends beyond the contexts of India and China into other countries. Senior administrative positions in the U.S. federal government are staffed with political appointees who are likely to comply with party agendas (Brewer and Maranto 2000; Wood and Waterman 1991, 1993). Japanese bureaucrats and politicians have converging roles in policy-making (Muramatsu and Krauss 1984), whereas getting administrative jobs in Mexico depends on mobilizing personal and political ties (Grindle 1977). In post-communist regimes, party politics have persistent influence on personnel management practices. Senior civil service in Hungary is highly politicized, featuring high turnover and strategic recruitment of outsiders who come and go with their party blocs, creating revolving doors among the government, the private sector, academia, and political parties (Meyer-Sahling 2008). Political connections hence contribute to the mobility of loyal officials, which in turn produce patterns of experience

preferred by the bureaucracy. This aspect of connection, however, derives from the common strategy of political control over civil service experience and is generalizable across institutions.

Hypothesis 4: Political connection has a positive impact on strategic appointments in both the Chinese bureaucracy and the IAS.

An important factor that potentially confounds with specialization and network is the organizational structure that channels mobility, which is a common feature of labor markets (Baron and Bielby 1980; Baron 1984). The organizational perspective provides an alternative explanation of the specialization effect: experience is only secondary to career lines, which are shared paths of movement by employees in given positions. Career lines create differential opportunities for individuals in job sorting and matching: those with concentrated experience are likely matched to positions with high-skill requirements, whereas generalists are sorted into low-skill jobs or managerial roles (Merluzzi and Phillips 2016). The systematic mobility channels entail two related consequences: first, differential patterns of experience derive from sectorial dynamics and are reinforced by the sorting process. Individuals with concentrated or broad experiences are selected into dissimilar jobs, embarking on divergent tracks such as the dual ladders of managerial and professional careers (Gouldner 1957). Second, as opportunities are non-uniformly distributed across units of varying importance, those close to power are more likely providing pathways to achievement (Gaertner 1980). If the important jobs systematically select individuals with specialized experience, then the observed impact of specialization is channeled through the organizational structure of selection.

In addition, the organizational structure provides differential exposure to political connections and confounds with the network effect. First, powerful connections are more accessible from certain tracks, particularly in areas that are proximate to power. Experience in important areas is likely to provide high-status connections, while at the same time improves one's job prospect. It is found that locations in career tracks interact with sponsorship networks in jointly shaping individual trajectories (Katz, Tushman, and Allen 1995). Second, career lines that provide better advancement opportunities may systematically select individuals with certain attributes, forming homophilous settings (McPherson, Smith-Lovin, and Cook 2001). Once an individual from a work unit reaches a higher position, he or she may preferentially promote others with similar backgrounds based on homophily. Third, individuals in a given career line may have similar levels of experience concentration, which provide implications for their network range and depth based on structural locations. Whereas diversity of experience contributes to wider and heterogeneous circles, focused experience helps build deeper connections. The structure of organizational career lines thus confounds with individual connectivity and experience, as well as their interactions, which vary across institutional conditions based on their relative importance.

Hypothesis 5a: Career lines have a positive interaction effect with specialization.

Hypothesis 5b: Career lines have a positive interaction effect with political connections.

One critical difference between ability- and loyalty-based careers is their temporal dynamics, which imply different levels of job stability. The dynamics are first reflected in the varying importance of each mechanism across career stages. The quality-based

argument predicts a consistent effect of specialization over the course of career: in early-career hiring, employers infer quality from experience patterns and prefer candidates with clear identities (Zuckerman et al. 2003). In senior promotion, specialization facilitates the matching between substantive expertise and positional requirements (Ferguson and Hasan 2013:236). The ability-based logics of selection predict a positive impact of specialization on career advancement at both early and late stages, rendering limited temporal variation and stability in career progression.

In contrast, loyalty-based careers are inherently unstable in a changing authority structure. The divided theories, however, leave no strong prior, leaving the temporal effects of connections an important issue of investigation. Network research suggests the continued effects of connections at varying stages, from early job entry (Granovetter 1995) to senior promotion (Brass 1984; Podolny and Baron 1997). The extents to which connections matter at different points reflect the politicization of an organization at multiple levels, as well as the importance of alternative concerns in job appointment. Contrasting arguments exist on the effects of connections in the Chinese civil service, whereas this issue is underexplored in studies on the IAS. As senior appointments are commonly politicized, research on the Chinese bureaucracy suggests the increasing importance of political connection to senior promotion while early advancement is largely merit-based (Landry, Lü, and Duan 2017). This, however, departs from the Party's loyalty principle that systematically screens cadres from an early age (Li and Walder 2001), rendering unclear dynamics of political connections across career stages.

The temporal dynamics of specialization and political connection further depend on their relationships with political change. Leadership turnover through election or

succession destabilizes an established authority structure, crystalizing the impacts and stability of career mechanisms. Since individual quality is relatively consistent, changes in external conditions of the institutional environment would entail limited consequences to ability-based careers. The loyalty-based trajectory, however, is more sensitive to change, especially political transitions during which powerful leaders rise and fall. If an individual's career depends on loyalty to a politician, then the sponsor's downfall would induce a negative shock to one's trajectory. The affiliation, as a signal of loyalty to the prior authority, may not be favorably perceived in the new administration and produce risks. The changing political dynamics that destabilize careers are widely described in a variety of contexts. In China, shifting state policies produce different career patterns for cohorts of officials (Zhou 2001). In post-communist regimes where loyalty is required for senior administrative positions, the top echelons of the civil service change with each election, and government reshuffles are not uncommon with leadership successions (Verheijen and Rabrenovic 2001:441). After municipal elections in the Philippines, jobs are reallocated among local elites, while relatives of the incumbent politicians are more likely to get public managerial positions (Fafchamps and Labonne 2017). The dynamic effects of political connections not only apply to administrative jobs but also extend to state-business relations. In South Korea, political affiliation to the prior regime that used to enhance firm performance becomes a liability under a new government (Siegel 2007). In Taiwan, connections to competing parties impose obstacles to market entry under a strong government but increase entry under a divided administration (Zhu and Chung 2014). Political changes thus bring exogeneous variations among individuals with different

connections, whereas mobility based on specialization is less affected, if quality is consistent over time and unconfounded with connections.

Hypothesis 6a: Specialization has a consistent positive effect on both early- and late-career advancement.

Hypothesis 6b: Political connections have inconsistent effects on early- and late-career advancement.

Hypothesis 6c: The politically connected are more likely to move than specialists after leadership change, particularly to positions of varied importance.

Chapter 9. Data and Methods

The empirical analysis employs two unique datasets on the Indian Administrative Service and a local Chinese bureaucracy. The IAS data are scraped online from the website of the Department of Personnel and Training, which contain the administrative records of 5095 officers recruited between the years 1970 and 2015. The data provide rich personal details including an individual's age, gender, languages, hometown, educational records, training and dates of rotational experience, from which I construct 851,072 person-month records. Individuals enter the IAS through two different routes, with the majority from regular recruitment (89 percent) and the rest via promotion from a local state civil service (11 percent). Most of the regular recruits start administrative careers in their mid 20s to early 30s, whereas the state promotees begin at a much later stage (Figure A-1). The analysis hence focuses on the regular recruits, excluding the state promotees due to their different career patterns.

Data on the Chinese bureaucracy are collected from archival sources of more than 300 almanacs and yearbooks, which cover more than 100 counties and county-level districts, 13 prefectural cities, and the provincial administration in a major Chinese province (see Chapter 3). The data contain over 300,000 person-year records of 32,000 officials between 1990 and 2008, mainly chief officials and associate chiefs in various government bureaus and CCP departments. The personnel records report detailed job experience, with information on job title, departments, and locations of appointment from which I construct longitudinal mobility data. Individual attributes, such as age and gender,

are not available from the records. The administrative ranks and job grades in the IAS are described in Table 9.1 (see Table 3.1 for rank description in the Chinese bureaucracy).

Insert Table 9.1 about here

9.1 Dependent Variables

I use three dependent variables for statistical analysis, which allow me to examine different aspects of mobility through landmark events in early and late careers, as well as strategic appointments. First, I model an officer's early career achievement in the IAS by time to first central deputation. As described in the institutional context, deputation to the central government is a common aspiration, and the point of interest is that how fast that one can accomplish this early-career milestone. 36.5 percent of the officers have experienced central deputation, whereas 14 percent have repeated events. Parallel to the IAS analysis, early career milestone in the Chinese bureaucracy is measured as time till appointment to a local CCP or government headquarter at the prefectural or provincial level. Being appointed to a local headquarter is associated with great career prospects, and only 4.3 percent of the officials have received such appointments.

Second, I model late career achievement in the IAS with empanelment to joint secretary in the central government. 18 percent of the officers are empaneled after an average of 23 years of service. For Chinese officials, I model their late career milestone as promotion to the department (ting) level, which normally requires 25 years of service. Only 2 percent of the officials in the data have attained this rank, making it a prestigious and rare achievement.

Strategic appointment in both bureaucracies are modeled with a multiple categorical variable, with 0 for no change in a month (IAS) or year (Chinese bureaucracy), 1 for lateral transfer, 2 for promotion, 3 for transfer to an important office, and 4 for promotion to an important office (see Section 8.2 for a list of important offices). The analysis focuses on the last two categories, which signal desirable career outcomes. The important job moves account for one-third of transfers in the IAS, and 26.9 percent of mobility events in the Chinese bureaucracy.

9.2 Independent Variables

9.2.1 Political Connection

Political connections in the IAS and the Chinese bureaucracy are constructed using network analysis on shared work experience. Nodes in the networks are individuals, who are connected by undirected edges if they have worked in the same office or experience area at the same time and location. In the IAS networks, I measure an officer's local political networks as the fraction of ties to other cadres in one's locality each month. Since a direct measure of ties to politicians is unavailable, this variable serves as a proxy of political embeddedness by gauging how well-connected is an officer to his local elite circles. To examine the effect of high-level connections on career advancement, I measure whether an officer has ever worked with a secretary, the senior-most bureaucrat in the IAS.

Political connection in the Chinese bureaucracy is measured with an indicator variable that captures one's shared work experience with the current leaders in their prefecture and province. Individuals who are status equals with the leaders are not counted,

since status equality can induce rivalry. Connection to the current leader is a time-varying indicator, with 1 indicating that an individual has worked with the local CCP or government leader, and 0 otherwise.

To capture the impact of political turnover on bureaucratic mobility, I collected data on chief minister turnover in Indian states between 1970 and 2015. An indicator variable denotes changes in the following months. Comparably, political turnover in China is captured by an indicator variable that counts CCP secretary change at the next higher level in the same year or the previous year.

9.2.2 Career Experience

The main independent variable on career experience is specialization, which is measured with a Herfindahl index that considers both the breadth and length of experience in a variety of areas (Ferguson and Hasan 2013):

$$H_{i,t} = \sum_{t=1}^{N} \left(\frac{s_{i,m,t}}{s_{i,t}} \right)^2, \quad s_{i,t} = \sum_{m=1}^{M} s_{i,m,t}$$

where $s_{i,m,t}$ is the duration of an individual *i*'s experience in an office or major experience area *m* up to time *t*, and $s_{i,t}$ is the total length of experience for *i* at time *t*. The unit of time is month in the IAS data, and year in the Chinese data. I further take the natural logarithm of the variable to adjust for skewness.

An additional aspect of experience is skill matching, which is measured for IAS officers as their fractions of prior experience in the areas to which they are posted in the central government or empanelment. For instance, if an officer receives a deputation post in water resources, his matching skill is the fraction of time that he has worked in water

resources up to each month before the deputation. For transfer and promotion to important positions, I measure matching skill as the fraction of prior experience in similarly important areas.

In comparison, skill matching in the Chinese bureaucracy is measured according to the destination departments. Matching skill for appointment to the prefectural/provincial CCP and government headquarters is measured as the fraction of prior experience in subordinate departments in the same functional line, specifically county or district CCP and government headquarters. For promotion to department level, I measure the fraction of experience in the domain to which one is promoted. For mobility to important bureaus, I calculate the fraction of individual experience in other important bureaus up to each year.

9.2.3 Career Lines

In addition to political connection and career experience, I consider the effect of organizational career lines that channel personnel flows. Specifically, if employees of a work unit or locality are more likely sent to specific destinations, then the observed effects of connections and experience established there are confounded with the impact of career tracks. Career lines in the IAS are measured as the fractions of personnel from one's cadre allotment state, cohort, and experience area in the central government each month, whereas they are measured as the personnel transition rates from one's bureau to the local CCP and government headquarters each year in the Chinese bureaucracy (Barnett, Baron, and Stuart 2000).

9.2.4 Controls

To control for the heterogeneities deriving from individual attributes, I include ascribed and achieved characteristics of IAS officers (Ferguson and Hasan 2013:241). The ascribed characteristics include age, gender, and first languages that indicate an officer's cultural background. Achieved characteristics include organizational experience, such as an officer's number of prior postings and tenure months. I further control for individual educational achievement, including the highest degree, number of academic subjects, undergraduate majors, and graduating in the first division. In addition, I control for home allotment, which indicates that an officer is already a local insider (Iyer and Mani 2012). Finally, I include the fixed effects of officers' five-year cohort, cadre allotment state, and the calendar year to account for annual shocks, regional and cohort variations.

Since individual characteristics are not accessible from data on the Chinese bureaucracy, I include controls of office and job characteristics that potentially confound with political connection and experience. The controls include number of positions held, tenure, office size, and rank fixed effects. Large offices tend to provide more job opportunities and better connections (Kimberly 1976), whereas the number of prior positions confounds with the effect of specialization. Although age is unavailable from the data, the controls for rank and tenure partially address the issue since officers with the same rank and tenure tend to have similar age. In addition, I control for prefecture and year fixed effects to account for annual fluctuation and regional variation. The descriptive statistics of the variables for each bureaucracy are presented in Tables 9.2 and 9.3.

Insert Tables 9.2 and 9.3 about here

9.3 Methods

The empirical analysis employs two methods. First, I use discrete-time event history models (DTEHM) to estimate the effects of the variables on first central deputation and empanelment in the IAS, as well as first appointment to a local headquarter and promotion to the department rank in the Chinese bureaucracy. The DTEHM is practically a logit model on event-history data, with the dependent variable defined as both the event occurrence and time till the event. Individuals enter the risk set once they become eligible to experience an event and drop out when the first incident occurs. Repeated events are not handled in the analysis. Regular issues to the model are left censoring and missing data (middle censoring), whereas right censoring does not pose a statistical problem. Fortunately, the IAS data set does not suffer from the left censoring and missing data issue, as it includes the complete histories of officers since the 1970s. The left censoring issue, however, is a valid concern to the data on the Chinese bureaucracy, since some officials have begun careers before the 1990s. Interpretation of the findings from the Chinese data hence requires caution and is limited to elite cadres during the observational period.

The risk sets for the IAS analysis are constructed in two ways according to the dependent variables. First, the risk set for central deputation includes the 3707 regularly recruited officers, excluding the state promotees. Their monthly observations contribute to 755,394 records. Second, the risk set for empanelment to joint secretary contains officers who have already received a central posting to be eligible for promotion. Out of the 1351 regular recruits who have central deputation experience, 654 were empaneled, and their post-deputation, pre-empanelment records constitute 153,734 monthly observations.

Similarly, the risk sets for the analysis on the Chinese bureaucracy differ based on career milestones. First, the risk set for appointment to a local CCP or government headquarter includes officials in regular bureaucratic branches, excluding those with unknown ranks such as heads of state-owned enterprises and public institutions. These records contribute to 155,639 person-year observations. Second, the risk set for promotion to the department rank includes government and CCP officials who have already reached the division or associate department rank. The set includes 7,696 officials, who are typically bureau chiefs and contribute to 38,838 yearly observations. Only 468 of them, however, are promoted to the department level.

The second method in the analysis is multinomial logit model for estimating the effects of covariates on multiple, unordered categories, specifically strategic appointments to important offices via promotion and lateral transfer. The base category is no change, whereas a positive coefficient increases the odds of having a particular outcome versus the base category. I further cluster standard errors at the individual level to adjust for within-cluster correlations. Results from the statistical analysis are reported in the next chapter.

Table 9.1 Administrative Grade Levels in the Indian Administrative Service (IAS)

Grade Level	Position in Central	Tenure (yr)	Freq.	Percent
Junior Time Scale	Assistant secretary	1	99,606	13.19
Senior Time Scale	Under secretary	4	184,123	24.37
Junior Administrative Grade	Deputy secretary	9	144,390	19.11
Selection Grade	Director	12	117,360	15.54
Super Time Scale	Joint Secretary	16	171,627	22.72
Above Super Time Scale	Additional Secretary	25	35,716	4.73
Apex Grade	Secretary	30	2,572	0.34
Total			**755,394**	**100**

Table 9.2 Descriptive Statistics for Analysis on First Deputation to Central Government

Variable	Observation	Mean	S.D.
Central deputation	590,174	0.002	0.048
Localism	590,174	0.387	0.423
Chief minister change	590,174	0.028	0.165
Secretary connection	590,174	0.032	0.177
Specialization	590,174	-1.438	0.775
Skill match	590,174	0.014	0.065
Cadre share	587,551	0.101	0.056
Cohort share	587,551	0.090	0.082
Experience share	587,551	0.089	0.121
Posts	590,174	7.896	6.023
Tenure (month)	590,174	111.353	82.070
Age	590,172	36.456	7.104
Female	590,174	0.139	0.346
Home allotment	590,174	0.300	0.458
First division	580,076	0.776	0.417
Number of subjects	580,076	2.697	1.502
Bengali	590,174	0.036	0.186
Hindi	590,174	0.507	0.500
Marathi	590,174	0.031	0.173
Tamil	590,174	0.075	0.264
Telugu	590,174	0.070	0.256
Undergraduate	590,174	0.242	0.428
Graduate degree	590,174	0.242	0.428
PhD degree	590,174	0.242	0.428
Engineering	580,076	0.214	0.410
Humanities	580,076	0.296	0.456
Medicine	580,076	0.038	0.191
Sciences	580,076	0.269	0.443
Business	580,076	0.118	0.322
Law	580,076	0.029	0.167
Professional	580,076	0.094	0.292

Table 9.3 Descriptive Statistics for Analysis on First Appointment to Prefecture/Provincial CCP and Government Headquarters

Variable	Observation	Mean	S.D.
Appointment to CCP/Gov	155,639	0.009	0.094
Current leader connection	155,633	0.039	0.194
CCP secretary turnover	155,639	0.433	0.495
Specialization	155,633	-0.299	0.414
Skill match	155,639	0.175	0.347
Personnel share in CCP	155,639	-12.092	3.514
Personnel share in Govt	155,639	-11.042	4.232
Posts	155,633	1.670	1.040
Tenue (year)	155,639	5.330	3.809
Office size	155,633	4.513	1.257

Chapter 10. Analysis and Results

10.1 Career Dynamics in the IAS

Table 10.1 reports the estimates from nested event history models on first central deputation. The first column includes the main effects of political connections, whereas the second adds career experience together with controls of posts and tenure. The coefficients of localism, chief minister change, and career experience are statistically significant, whereas having secretary connection does not have an effect on central deputation. This suggests that being embedded in one's local political networks, as well as specialized experience, both provide routes of advancement in the IAS (H1), whereas opportunities are more likely to arise during political turnover. Model 3 includes variables of career lines using personnel shares from one's cadre, cohort, and experience area. All variables of career lines have significant effects, suggesting the importance of the organizational structure of mobility channels. The effects of experience and connection, however, are still statistically significant. Models 4 and 5 further includes individual attributes and educational experience, as well as cadre, year, and cohort fixed effects. Interestingly, most of the individual attributes have no effect, and the most significant effects are from age, which has a quadratic relationship with first deputation, and home allotment that decreases the rate of central posting. Educational achievements, such as the highest degree and graduating from the first division, increase one's rate of deputation, which indicates a meritocratic selection component. The initial results support the baseline hypothesis that

political connections and specialization both provide avenues of attainment (H1), whereas their temporal dynamics are likely reflected during political change.

Insert Table 10.1 about here

Second, I consider the relationships between political connection, experience, and career tracks. Column 1 of Table 10.2 includes the interaction terms between localism and career experience for testing the competing mechanisms between loyalty and quality. One of the interaction terms has a negative effect. Column 2 includes the interactions of chief minister change with localism and career experience, which test the hypothesis that careers based on loyalty and ability have differential sensitivities to political turnover (H6c). The interaction between minister change and localism is positive and significant at 0.05 level, suggesting that the politically embedded are more likely to have career change following turnover. Individuals with specialization or relevant skills, however, are unaffected by the change, which supports Hypothesis 6c in arguing that specialized careers are less sensitive to political events than loyalty-based mobility. In the third column, I consider the confounding effects between specialization and career lines (H5a), as well as its interaction with matching skills to examine whether the effect of specialization is channeled through the organizational structure or specific skills. Surprisingly, I find a strong negative effect between specialization and skills, which suggests that central posting to a given area does not depend on having related prior experience. The interactions between specialization and career lines, however, are positive and highly significant, whereas the main effect of specialization is no longer significant. The findings thus support Hypothesis 5a and suggest that the benefit of experience is mainly channeled through career lines rather than specific skills. Column 4 further includes interactions between localism and career lines to test

whether the effect of connections is confounded with organizational tracks (H5b). The interactions between localism, cadre and cohort shares have large positive effects, whereas the main effect of localism becomes negative. This means that network location is more important than connection alone, as the benefit of connection is associated with being embedded in states and cohorts that provide better mobility chances. The competing mechanisms of career experience and political networks, therefore, both depend on the organizational structure in early career development.

Insert Table 10.2 about here

To examine the impacts of mobility mechanisms on late-career achievement, I model the effects of variables on empanelment in Table 10.3. Column 1 reports the estimates from the full model specification following column 5 of Table 10.1. The effects of career experience are still positive and significant, whereas local networks and chief minister turnover no longer have any effect. This shows that senior promotion in the administration is subject to more institutional constraint, whereas local political interference is less important at this stage. Columns 2 to 6 include interactions between experience and career tracks, testing whether the effect of specialization is attributed to the underlying labor market structure. Most of the interactions, however, are not statistically significant, in contrast to the findings from Table 10.2 and show that the evaluation of experience differs in early- and late-promotion considerations. The main effects of career experience, however, remain significant across models, whereas political connections largely show no effect. The findings support Hypothesis 6a on the consistent effect of specialization across career stages, and they also support Hypotheses 6b by showing the declining political influence on senior promotion. This, however, reflects the institutional

context of empanelment in the IAS, according to which the selection procedure is highly rigorous and not controlled by local politicians.

Insert Table 10.3 about here

As transfer to positions of differential importance provides means of political control, the effects of mechanisms could vary on strategic appointments. Table 10.4 examines this issue and reports the estimates from multinomial logit models on promotion and lateral transfer to important offices. The first column includes the main effects of political connection and experience together with controls. We find that localism and experience both have significant positive impacts on the outcomes, whereas chief minister turnover affects transfer but not promotion. This, however, is consistent with the findings from Iyer and Mani (2012), indicating that strategic appointment is more likely to take place in lateral moves, whereas promotion is regulated by institutional constraints. Model 2 includes interactions between localism and experience, which has a significant negative effect. This reinforces the argument that specialization and political connections provide competing routes of advancement, whereas investment in both does not necessarily improve one's career outcome. Column 3 includes interactions of chief minister change with localism and experience. We find that individuals with more specialized or relevant experience are less likely transferred following political change, indicating that experienced officers are not favored in strategic appointments after ministerial turnover. In column 4, I include an interaction between specialization and matching skills. The effect, in contrast to the previous finding from column 3 of Table 10.2, is positive and significant. This result, however, could be attributed to either area prestige or related skills, since matching skill here is measured as the experience in other important offices. Hence, the

mechanism through which specialization improves strategic appointment is not entirely clear from a skill-based perspective.

Insert Table 10.4 about here

In light of the findings, political connection and specialization provide competing avenues of achievement the IAS. The mechanisms through which networks and experience work, however, vary across different career stages as well as mobility types. In early advancement, both the effects of networks and specialization are driven by the organizational structure of career lines. It is hence being in the right place that truly matters (Brass 1984). Network locations, as well as concentration in specific areas, which produce better advancement opportunities matter more than connections or specific skills alone. Due to the rigorous screening process of empanelment in late careers, political connection has limited influence, whereas the effect of specialization is no longer driven by organizational locations. The evaluation of a stable career pattern thus differs from that in early selection. In addition, both networks and experience facilitate strategic appointments and provide competing routes of advancement. Promotion and advancement in the IAS are thus driven by the dual selection on loyalty and quality, with temporal dynamics and differential evaluation of the mechanisms over the course of career.

10.2 Mobility in the Chinese Bureaucracy

To compare the findings from India to mobility patterns in China, I estimate the effects of political connection and career experience on early and late advancement events, as well as strategic appointments in the Chinese bureaucracy. Table 10.5 reports the estimates from

nested event history models predicting first appointment to local CCP and government headquarters. The first column includes only variables on political connection, whereas the second adds career experience with controls of posts and tenure. Both experience and connections have significant effects on headquarter appointment, whereas matching skills, surprisingly, has a negative effect on headquarter appointment. This suggests that individuals with lower-level experience in the same functional lines are less likely to move up the ladder. While the discontinuity contradicts the common conception of career progression as steady advancement along a job ladder, it is a common feature of open politicization of administrative careers, where senior positions are filled by political appointees with unrelated experience (Meyer-Sahling 2008). Model 3 includes career track variables, and model 4 further controls for office size, rank, city and year fixed effects. The findings remain substantively similar, as the main effects of political connections and experience are robust across different model specifications.

Insert Table 10.5 about here

Next, I examine the relationships between connection, experience, and career lines in Table 10.6. Column 1 includes the interactions between connection and experience. In contrast to the findings from the IAS, political connection and specialized experience have a positive interaction, providing complementary routes of advancement in the Chinese bureaucracy. The main effect of specialization becomes negative and not significant, which supports Hypothesis 3 in suggesting that the benefit of specialization is largely coupled with connection building, as loyalty is a more important factor than quality or specific skills. Column 2 includes the interaction terms of CCP secretary turnover with connection, specialization, and skills. The interaction effect between leader turnover and specialization

is significantly negative, which is similar to the findings from the IAS that experienced officials are less likely to be moved following political change (see Table 10.4). Column 3 includes interactions of specialization with skills and career lines. No significant interaction is found between experience and career lines, whereas a marginally significant interaction occurs between specialization and skills. This shows that the effect of specialization in the Chinese bureaucracy is not entirely driven by the organizational structure, in contrast to the findings on early-career advancement in the IAS (see Table 10.2). Column 4 further includes interactions between connection and career lines. The interactions are not significant, suggesting that the effect of sponsorship is not due to the underlying channels of organizational mobility. This again contrasts with the results from the IAS. The findings therefore suggest that political connection and experience are complementary mechanisms in the Chinese bureaucracy, whereas neither is driven by the underlying structure of career lines. It is critical to note that loyalty is much more important to bureaucratic mobility in China than in India (H2), whereas patterns of career experience, such as specialization, is a phenomenon secondary to political connection in jointly facilitating advancement (H3).

Insert Table 10.6 about here

To examine the temporal dynamics of the mechanisms over career stages, I estimate the effects of the variables on late-career milestone, promotion to the department (ting) rank. Note that this senior promotion is comparable to the event of IAS empanelment and is extremely competitive. Column 1 of Table 10.7 includes the main effects of connection and experience together with controls. The main effects are positive and statistically significant, suggesting the continued importance of networks and experience to late-career

achievement (H6a and H6b). This, however, contrasts with the findings from IAS empanelment (Table 10.3) and reiterates the point that loyalty screening is consistently a major concern in bureaucratic selection in China, whereas it has dwindling impact on senior IAS promotion due to the institutional constraints. Column 2 includes interactions between connection and experience. Similar to the previous finding (column 1 of Table 10.6), specialization and networks have a complementary effect on senior promotion, whereas their main effects are also positive. This shows that both connection and experience are now important factors in late-career screening, while loyalty and ability complement each other in competitive promotion events. Column 3 includes interactions of political turnover with connection and experience. None of the interactions are statistically significant, showing that political events do not affect individuals with varied ties and abilities differentially during late careers. Column 4 further includes an interaction between specialization and skills. This interaction effect, however, is negative and highly significant, again showing that specific skills are not the main reason for which specialization is valued.

Insert Table 10.7 about here

Finally, I examine the effect of the mechanisms on strategic appointments. Table 10.8 reports the estimates from multinomial logit models on promotion and transfer to important bureaus, with the first column reporting the model specification from column 4 of Table 10.5. The main effects of political connections have positive and significant effects, whereas specialization has a negative effect on important appointments. This shows the inconsistent effects of career experience on strategic appointments, whereas political connections remain an important factor (H4). Column 2 adds an interaction between

connection and specialization, which shows no significant effect. Column 3 includes the interactions of CCP secretary turnover with connection and specialization. The interaction terms, however, are not significant, showing no different sensitivity of career mechanisms to political events. This, however, could be due to the intertwining of experience and connection in the Chinese bureaucracy, as shown before that both complement each other in shaping career outcomes. The analysis suggests that the effect of specialization is inconsistent on strategic appointments, whereas political connections consistently demonstrate a strong influence on job assignment across career stages and mobility types.

Insert Table 10.8 about here

In summary, the analysis on the Chinese bureaucracy shows different career dynamics from those in the IAS in the following ways. First, connection and experience do not provide competing routes of advancement, as they complement each other in facilitating advancement in both early- and late-stage events. The importance of career experience is secondary to powerful connections due to loyalty screening, which filter individual affiliations through political connections. Although the specific mechanisms vary among theories, the finding is largely consistent with the prediction of "principled particularism" in communist organizations, according to which loyal individuals with close party affiliations are systematically preferred in varied career aspects and each stage of selection (Walder 1986). Second, whereas networks and experience are confounded with organizational career lines in the IAS, the effect of connections in the Chinese bureaucracy is not driven by the organizational structure. This reiterates the point that connection is perhaps the most important mechanism for getting ahead in the Communist Party (Shih et

al. 2012), whereas experience and specialization are beneficial when they help establish powerful networks.

10.3 Summary and Conclusion

This final part of the dissertation presents the first empirical analysis that compares bureaucratic mobility in democratic and authoritarian regimes. The findings from civil service administrations in India and China reveal systematic variations in mobility mechanisms, as well as different logics of personnel selection. First, whereas existing theories suggest that specialization and political connections provide competing routes of advancement based on the screening of quality versus loyalty, this is true to democratic institutions in which party rivalry renders no single actor with centralized power. The dual routes of advancement are perhaps due to the limitations to the incumbent's power, which provide room for alternative career strategies independent from political loyalty. In an authoritarian regime ruled by a single party, however, loyalty to the incumbent authority is systematically emphasized in administrative appointment due to the centralization of power. Political connection is the dominant career mechanism, whereas patterns of experience, be it concentration or diversity, are only beneficial when they help build connections to the ruling elites.

Second, the differential emphases on loyalty versus ability produce varied career instability during political transition. In both countries, loyalty-based careers through strategic appointments are sensitive to leadership turnover, whereas skill-based advancement is less affected by the changing authority structure. In addition, the temporal dynamics of specialization is relatively consistent across different career stages, whereas

the effects of political influence vary across the course of career. Connection has limited influence on senior IAS promotion due to rigorous institutional screening, whereas it has a persistent effect on both early- and late-career appointments in China. This reiterates the importance of loyalty in an authoritarian setting that serves as a filtering device across different career stages.

Third, common to the institutional contexts is the structural aspect of organizational career lines, which systematically shapes mobility while interacting with alternative mechanisms. Specifically, the effects of both connection and experience are channeled through career lines in the IAS, implying that network location and concentration of experience in the right place matter more than having some connection or specific skills. Although career lines also shape mobility in the Chinese bureaucracy, they do not completely account for the impacts of political connections, which independently affect career outcomes as an important mechanism.

These empirical findings, while confirming some of the past descriptions, shed light on the systematic variations between career patterns across institutional contexts. At the same time, they call into question a long-standing association between Weberian bureaucracy and socioeconomic development (Evans and Rauch 1999). Whereas the IAS portrays a more meritocratic image compared to the Chinese bureaucracy due to the consistent emphasis on specialization, the developmental trajectories of China and India depart from standard theoretical prediction. What, then, explain such puzzling outcomes? Whereas past research relates China's economic development to incentive designs in personnel selection (Li and Zhou 2005) and the joint emphases on loyalty and competence in the bureaucracy (Landry et al. 2017), these explanations may only account for the

specific practices for maintaining authoritarian resilience. Centralization of power, on the one hand, reflects authoritarian rules, and on the other hand has implications for the efficiency in policy implementation. Studies on common agency suggest that coordination is inherently problematic when multiple principals are involved (Bernheim and Whinston 1986), and a single party with no competition often implements programs more effectively (Gulzar and Pasquale 2017). Whereas these issues are beyond the scope of the current project, the analysis offers an initial glance into the institutional variations and similarities between contrasting regimes. It is a step towards understanding the relationship between bureaucracy and development, as well as the impact of institutional environments on organizational behavior.

Table 10.1 Discrete-Time Event History Models on First Central Deputation in the IAS

	(1)	(2)	(3)	(4)	(5)
Political Connection					
Localism	0.12*	0.72***	0.51***	0.48***	0.49***
	(0.06)	(0.07)	(0.11)	(0.11)	(0.11)
Chief minister change	0.34*	0.34*	0.35*	0.35*	0.35*
	(0.14)	(0.14)	(0.15)	(0.15)	(0.15)
Secretary connection	-0.25	-0.42*	0.02	0.01	0.01
	(0.17)	(0.17)	(0.27)	(0.27)	(0.27)
Career Experience					
Specialization		0.79***	1.00***	1.15***	1.16***
		(0.16)	(0.17)	(0.16)	(0.16)
Skill match		3.08***	3.36***	3.22***	3.13***
		(0.28)	(0.24)	(0.24)	(0.25)
Career Lines					
Cadre share			6.30***	6.46***	6.39***
			(0.64)	(0.63)	(0.63)
Cohort share			3.40***	2.21*	2.23*
			(0.95)	(0.99)	(0.98)
Experience share			3.90***	3.78***	3.80***
			(0.12)	(0.12)	(0.11)
Controls					
Posts		0.58***	0.64***	0.59***	0.59***
		(0.05)	(0.06)	(0.06)	(0.06)
Posts squared		-0.01***	-0.01***	-0.01***	-0.01***
		(0.00)	(0.00)	(0.00)	(0.00)
Tenure		-0.00***	-0.01***	-0.00*	-0.00*
		(0.00)	(0.00)	(0.00)	(0.00)
Age				0.29***	0.30***
				(0.08)	(0.08)
Age squared				-0.00***	-0.00***
				(0.00)	(0.00)
Female				-0.01	-0.04
				(0.09)	(0.10)
Bengali				0.26	0.29
				(0.15)	(0.15)
Hindi				0.22**	0.21**
				(0.08)	(0.08)
Marathi				0.07	0.13
				(0.22)	(0.22)
Tamil				0.15	0.16
				(0.13)	(0.13)
Telugu				-0.13	-0.11
				(0.14)	(0.15)
Home allotment				-0.25***	-0.26***
				(0.07)	(0.07)
First division					0.23**
					(0.08)
Number of subjects					-0.04
					(0.02)
Graduate degree					0.21*
					(0.09)
PhD degree					0.30*
					(0.14)
Engineering					0.10
					(0.14)
Humanities					0.07
					(0.13)
Medicine					0.01
					(0.27)
Sciences					-0.03

					(0.14)
Business					0.26
					(0.14)
Law					0.33*
					(0.15)
Professional					0.13
					(0.10)
Year, Cadre, and Cohort Fixed Effects	N	N	Y	Y	Y
Constant	-6.11***	-8.20***	-7.82***	-12.57***	-13.19***
	(0.04)	(0.10)	(0.34)	(1.46)	(1.47)

Number of observations = 571,637
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Table 10.2 Interaction Effects of Career Experience and Political Connection on First Deputation

	(1)	(2)	(3)	(4)
Political Connection				
Localism	0.50	0.46***	0.42***	-0.68**
	(0.34)	(0.11)	(0.11)	(0.26)
Chief minister change	0.36*	-0.14	0.34*	0.35*
	(0.15)	(0.43)	(0.15)	(0.15)
Secretary connection	0.02	0.01	0.00	0.01
	(0.27)	(0.27)	(0.27)	(0.27)
Career Experience				
Specialization	1.22***	1.16***	0.33	1.23***
	(0.19)	(0.16)	(0.19)	(0.16)
Skill match	5.36***	3.14***	-3.04**	3.11***
	(0.50)	(0.25)	(1.04)	(0.25)
Career Lines				
Cadre share	6.60***	6.37***	10.60***	5.35***
	(0.62)	(0.63)	(1.63)	(0.65)
Cohort share	1.96*	2.23*	19.97***	0.37
	(1.00)	(0.98)	(2.03)	(1.16)
Experience share	3.81***	3.80***	5.73***	3.77***
	(0.12)	(0.11)	(0.38)	(0.16)
Interactions				
Localism × specialization	-0.12			
	(0.17)			
Localism × skill match	-4.01***			
	(0.65)			
Chief minister change × localism		0.97*		
		(0.38)		
Chief minister change × specialization		0.01		
		(0.18)		
Chief minister change × skill match		-0.34		
		(0.91)		
Specialization × skill match			-3.72***	
			(0.54)	
Specialization × cadre share			2.21**	
			(0.82)	
Specialization × cohort share			8.77***	
			(1.00)	
Specialization × experience share			1.08***	
			(0.21)	
Localism × cadre share				4.88***
				(1.19)
Localism × cohort share				3.93**
				(1.31)
Localism × experience share				-0.02
				(0.27)
Controls	Y	Y	Y	Y
Constant	-13.33***	-13.17***	-8.13***	-11.71***
	(1.53)	(1.47)	(1.45)	(1.48)

Number of observations = 571,637
Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05

Table 10.3 Estimates from Discrete-Time Event History Models on IAS Empanelment

	(1)	(2)	(3)	(4)	(5)	(6)
Political Connection						
Localism	0.11	0.12	0.11	0.11	0.12	0.16
	(0.25)	(0.25)	(0.25)	(0.25)	(0.25)	(0.25)
Chief minister change	-0.59	-0.59	-0.59	-0.59	-0.59	-0.55
	(0.35)	(0.35)	(0.35)	(0.35)	(0.35)	(0.35)
Secretary connection	-1.22*	-1.21*	-1.22*	-1.21*	-1.22*	-1.26*
	(0.59)	(0.59)	(0.59)	(0.59)	(0.59)	(0.60)
Career Experience						
Specialization	2.03***	2.18***	2.07***	2.03***	2.35***	1.99***
	(0.35)	(0.37)	(0.42)	(0.34)	(0.39)	(0.35)
Skill match	6.96***	3.21	6.96***	7.78***	6.92***	8.68***
	(0.56)	(3.84)	(0.56)	(0.96)	(0.56)	(0.67)
Career Lines						
Cadre share	6.03***	6.01***	5.37	6.31***	6.06***	6.02***
	(0.67)	(0.68)	(4.19)	(0.68)	(0.67)	(0.67)
Cohort share	-0.35	-0.23	-0.36	-0.40	-0.52	-0.55
	(1.36)	(1.35)	(1.37)	(1.34)	(1.36)	(1.33)
Experience share	2.63***	2.62***	2.63***	2.63***	-0.11	3.17***
	(0.24)	(0.24)	(0.24)	(0.24)	(1.98)	(0.29)
Interactions						
Specialization × skill match		-1.68				
		(1.79)				
Cadre share × specialization			-0.28			
			(1.75)			
Cadre share × skill match				-5.61		
				(4.64)		
Experience share × specialization					-1.18	
					(0.84)	
Experience share × skill match						-7.99***
						(2.11)
Controls	Y	Y	Y	Y	Y	Y
Constant	-118.6***	-118.0***	-118.5***	-118.4***	-117.9***	-118.6***
	(8.08)	(8.12)	(8.09)	(8.02)	(8.06)	(8.02)

Number of observations = 136,159
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Table 10.4 Estimates from Multinomial Logit Models on Strategic Appointments in the IAS

	Transfer to Important Offices				Promotion to Important Offices			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Political Connection								
Localism	0.37***	-0.26**	0.32***	0.31***	0.43***	-0.34**	0.46***	0.47***
	(0.04)	(0.08)	(0.04)	(0.04)	(0.06)	(0.11)	(0.06)	(0.06)
Chief minister change	0.39***	0.38***	0.09	0.39***	0.16	0.17	-0.24	0.17*
	(0.05)	(0.05)	(0.15)	(0.05)	(0.09)	(0.09)	(0.27)	(0.09)
Secretary connection	-0.15**	-0.18**	-0.15**	-0.14*	-0.45***	-0.49***	-0.45***	-0.44***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.10)	(0.10)	(0.10)	(0.10)
Career Experience								
Specialization	0.95***	1.07***	0.91***	0.82***	1.42***	1.74***	1.49***	1.43***
	(0.06)	(0.07)	(0.06)	(0.06)	(0.11)	(0.10)	(0.09)	(0.10)
Skill match	0.39***	0.38***	0.46***	3.38***	1.18***	1.07***	1.16***	3.25***
	(0.07)	(0.08)	(0.07)	(0.19)	(0.10)	(0.12)	(0.11)	(0.21)
Interactions								
Localism × specialization		-0.31***				-0.44***		
		(0.04)				(0.06)		
Localism × skill match		0.12				0.12		
		(0.15)				(0.19)		
Chief minister change × patronage			0.21				0.41	
			(0.12)				(0.23)	
Chief minister change × specialization			-0.23**				-0.20	
			(0.07)				(0.13)	
Chief minister change × skill match			-0.72**				-0.41	
			(0.27)				(0.43)	
Specialization × skill match				1.65***				1.29***
				(0.10)				(0.12)
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Constant	-5.09***	-4.33***	-5.11***	-4.65***	-8.65***	-7.59***	-8.76***	-8.39***
	(0.43)	(0.43)	(0.43)	(0.42)	(0.63)	(0.64)	(0.64)	(0.63)

Number of observations = 744,856
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.0

Table 10.5 Discrete-Time Event History Models Predicting First Appointment to Local CCP and Government Headquarters in China

	(1)	(2)	(3)	(4)
Political Connection				
Current leader connection	5.76***	5.95***	4.92***	6.54***
	(0.10)	(0.13)	(0.17)	(0.32)
CCP secretary turnover	0.27***	0.21***	0.25**	-0.50*
	(0.06)	(0.06)	(0.09)	(0.21)
Career Experience				
Specialization		3.07***	2.21***	1.29*
		(0.30)	(0.40)	(0.62)
Skill match		-0.13***	-2.33***	-5.16***
		(0.14)	(0.14)	(0.38)
Career Lines				
Transition rate to CCP			0.37***	1.19***
			(0.02)	(0.10)
Transition rate to Gov			0.30***	0.83***
			(0.01)	(0.04)
Controls				
Posts		2.08***	1.54***	0.71
		(0.24)	(0.28)	(0.39)
Posts squared		-0.12***	-0.09***	-0.04
		(0.02)	(0.02)	(0.03)
Tenure		-0.29***	-0.27***	-0.13***
		(0.02)	(0.02)	(0.04)
Office size				2.19***
				(0.16)
Rank, city, and year fixed effects	N	N	N	Y
Constant	-7.21***	-8.03***	-1.56***	10.05***
	(0.09)	(0.23)	(0.29)	(1.85)

Number of observations = 150,643
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Table 10.6 Interaction effects of Career Experience and Political Connection on First Appointment to Local CCP and Government Headquarters

	(1)	(2)	(3)	(4)
Political Connection				
Current leader connection	9.57***	6.49***	6.56***	4.33***
	(0.56)	(0.39)	(0.32)	(0.52)
CCP secretary turnover	-0.45*	-1.78***	-0.49*	-0.41*
	(0.22)	(0.36)	(0.21)	(0.20)
Career Experience				
Specialization	-1.19	2.07**	0.92	1.59**
	(0.74)	(0.69)	(0.79)	(0.62)
Skill match	-4.29***	-5.46***	-4.24***	-5.05***
	(0.65)	(0.47)	(0.47)	(0.35)
Career Lines				
Transition rate to CCP	1.26***	1.23***	1.23***	1.20***
	(0.09)	(0.10)	(0.10)	(0.27)
Transition rate to Gov	0.87***	0.86***	0.78***	1.05***
	(0.05)	(0.04)	(0.06)	(0.21)
Interactions				
Connection × specialization	4.39***			
	(0.46)			
Connection × skill match	-0.88			
	(0.67)			
CCP turnover × connection		0.29		
		(0.47)		
CCP turnover × specialization		-1.25**		
		(0.39)		
CCP turnover × skill match		0.35		
		(0.52)		
Specialization × skill match			1.19*	
			(0.52)	
Specialization × transition rate to CCP			0.05	
			(0.07)	
Specialization × transition rate to Gov			-0.08	
			(0.07)	
Connection × CCP share				-0.05
				(0.24)
Connection × Gov share				-0.28
				(0.22)
Controls	Y	Y	Y	Y
Constant	8.57***	10.86***	9.77***	10.13***
	(1.70)	(1.79)	(1.83)	(1.71)

Number of observations = 150,643
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Table 10.7 Estimates from Discrete-Time Event History Models on Promotion to Department Level in the Chinese Bureaucracy

	(1)	(2)	(3)	(4)
Political Connection				
Current leader connection	0.50**	1.45***	0.55*	0.53**
	(0.19)	(0.32)	(0.25)	(0.20)
CCP secretary turnover	0.14	0.16	0.10	0.15
	(0.13)	(0.13)	(0.19)	(0.13)
Career Experience				
Specialization	1.61***	1.45***	1.71***	2.05***
	(0.43)	(0.42)	(0.45)	(0.44)
Skill match	2.06***	1.96***	2.22***	1.32***
	(0.13)	(0.14)	(0.19)	(0.13)
Interactions				
Connection × specialization		1.15***		
		(0.28)		
Connection × skill match		0.78		
		(0.43)		
CCP turnover × connection			-0.09	
			(0.31)	
CCP turnover × specialization			-0.18	
			(0.25)	
CCP turnover × skill match			-0.33	
			(0.30)	
Specialization × skill match				-2.40***
				(0.45)
Controls	Y	Y	Y	Y
Constant	-5.46***	-5.55***	-5.44***	-5.18***
	(0.45)	(0.45)	(0.45)	(0.45)

Number of observations = 38,838
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Table 10.8 Estimates from Multinomial Logit Models on Strategic Appointments in the Chinese Bureaucracy

	Transfer to Important Offices			Promotion to Important Offices		
	(1)	(2)	(3)	(1)	(2)	(3)
Political Connection						
Current leader connection	0.19**	0.05	0.21*	0.28***	0.49***	0.27**
	(0.07)	(0.14)	(0.09)	(0.07)	(0.13)	(0.09)
CCP secretary turnover	0.16***	0.16***	0.17**	0.09*	0.09*	0.09
	(0.04)	(0.04)	(0.06)	(0.04)	(0.04)	(0.06)
Career Experience						
Specialization	-0.77***	-0.75***	-0.78***	-1.54***	-1.57***	-1.54***
	(0.17)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
Skill match	1.22***	1.21***	1.22***	1.18***	1.20***	1.18***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Homophily						
Personnel share in CCP	0.07***	0.07***	0.07***	0.06***	0.06***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Personnel share in Gov	0.07***	0.07***	0.07***	0.05***	0.05***	0.05***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Interactions						
Connection × specialization		-0.15			0.24	
		(0.12)			(0.13)	
CCP turnover × connection			-0.04			0.01
			(0.11)			(0.12)
CCP turnover × specialization			0.01			-0.00
			(0.08)			(0.08)
Controls	Y	Y	Y	Y	Y	Y
Constant	-2.29***	-2.30***	-2.30***	-2.39***	-2.39***	-2.38***
	(0.22)	(0.22)	(0.22)	(0.21)	(0.21)	(0.21)

Number of observations = 158,442
Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Appendix 1. Estimation of Empirical Transition Probabilities

Andersen et al. (1995) presented formulas for the Nelson-Aalen estimator for the integrated hazard matrix and the Aalen-Johansen estimator of the transition matrix. Let T_{ik}^{*} represent the time of the k^{th} transition for individual i, C_i be the right censoring time for the i^{th} individual, L_i be the left truncation time, and s_{ik} be the state occupied by i between times T_{ik-1}^{*} and T_{ik}^{*}. The counting process and the number at risk for data subject to left truncation and right censoring are estimated as

$$\widehat{N}_{jj'}(t) = \sum_{i=1}^{n} \sum_{k \geq 1} I(T_{ik}^{*} \leq t, C_i \geq T_{ik}^{*}, L_i < t, s_{ik+1} = j')$$

and

$$\hat{Y}_j(t) = \sum_{i=1}^{n} \sum_{k \geq 1} I(T_{ik-1}^{*} < t \leq T_{ik}^{*}, C_i \geq t, L_i < t, s_{ik} = j)$$

The Nelson-Aalen estimator of the cumulative hazard is given by

$$\hat{A}_{jj'}(t) = \begin{cases} \int_0^t \dfrac{I\left(\hat{Y}_j(s) > 0\right)}{\hat{Y}_j(s)} \, d\widehat{N}_{jj'}(s), & j \neq j' \\ -\sum_{j \neq j'} \hat{A}_{jj'}(t) \end{cases}$$

The Aalen-Johansen estimator of the transition probability matrix of a Markov multistate system is obtained by product integration of $\hat{A}_{jj'}(t)$, i.e.,

$$\hat{P}(s,t) = \prod_{(s,t]} (I + d\hat{A}(u))$$

where $\hat{A} = \{\hat{A}_{jj'}\}$, which reduces to simple empirical proportions for the complete data (Datta and Satten 2001, 2002; Ferguson, Datta, and Brock 2012:3-5).

Table A-1 Estimates of Multinomial Logit Models on All Mobility Outcomes

	Promotion		Lateral Transfer		Exit
	Important	Others	Important	Others	
Sponsorship					
Connection to current leader	0.42***	-0.27***	0.40***	0.91***	-0.13*
	(0.07)	(0.07)	(0.07)	(0.10)	(0.06)
Connection to previous leader	-0.42***	-0.57***	-0.24**	-0.51***	0.03
	(0.08)	(0.08)	(0.08)	(0.14)	(0.06)
CCP leader change	0.16***	0.09*	0.18***	0.03	0.08**
	(0.05)	(0.04)	(0.05)	(0.06)	(0.03)
Diverse experience	0.16***	0.03*	0.27***	-0.07**	0.11***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Controls					
Bureau chief	-0.25***	-0.54***	0.32***	-0.75***	0.01
	(0.06)	(0.04)	(0.06)	(0.11)	(0.04)
Tenure	-0.05	-0.02	0.12***	0.15***	0.09***
	(0.03)	(0.02)	(0.03)	(0.03)	(0.02)
Tenure^2	-0.00	0.01***	-0.01***	-0.01**	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Office status	0.05***	-0.01	-0.03*	-0.05*	-0.00
	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)
CCP sector	1.19***	0.12**	0.81***	0.52***	0.15***
	(0.04)	(0.04)	(0.04)	(0.06)	(0.03)
Office size (logged)	0.29***	-0.31***	0.46***	-0.30***	0.07***
	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)
Rank, city, year fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	-4.57***	-0.86***	-4.56***	-1.18***	-2.03***
	(0.16)	(0.10)	(0.15)	(0.17)	(0.10)

N. Obs. = 108,264. Robust standard errors in parentheses.
*** p<0.001, ** p<0.01, * p<0.05, two-tailed test
Notes: Career diversity is standardized for each year and tenure. The analysis excludes individuals with unknown rank or below *ke* level, and no mobility during the observation period.

Table A-2 List of Bureaus in the Data, 1990-2008

Abbreviation	Organization Name
Party Organizations	
CCP	Chinese Communist Party Headquarters
CCP Office	CCP Office
CDI	Commission for Discipline Inspection
Org Dept	Organization Department
Politics & Law	Political and Legal Affairs Commission
Propaganda	Propaganda Department
Rural Work	Rural Work Department
United Front	United Front Work Department
Taiwan Affairs	Taiwan Affairs Office
Party Work	Party Work Committee
Government Organizations	
GOV	Government Headquarters
GOV Office	Government Office
Research	Research Office
Dev & Reform	Development and Reform Commission
Economics & Trade	Commission of Economics and Trade
Development Zones	Administrative Committee of Development Zones
Police	Bureau of Public Security
Justice	Bureau of Justice
Legal	Office of Legal Affairs
Request Handling	Bureau of Request Handling
Security	Bureau of National Security
Personnel	Bureau of Personnel
Labor	Bureau of Labor and Social Security
Agriculture	Bureau of Agriculture
Grain	Bureau of Grain
Supply Coop	Supply and Marketing Cooperatives
Land	Bureau of Land Resources
Commerce	Bureau of Commerce
Finance	Bureau of Finance
Tax	Bureau of Taxation
Construction	Bureau of Construction
Traffic	Bureau of Traffic Control
Water	Bureau of Water Resources
Education	Bureau of Education
Culture	Bureau of Culture
Sports	Bureau of Sports
Health	Bureau of Health
Science	Bureau of Science and Technology
Telecomm	Bureau of Telecommunications
Tourism	Bureau of Tourism
Statistics	Bureau of Statistics
Audit	Bureau of Auditing
Civil Affairs	Bureau of Civil Affairs
Defense	Bureau of Civil Defense
Electricity	Bureau of Power Supply

Public Utilities	Bureau of Public Utilities
Housing	Bureau of Housing Management
Ind Commerce	Bureau of Industry and Commerce
Price	Bureau of Commodity Price
Quality Supervision	Bureau of Quality Supervision
Environment	Bureau of Environmental Protection
Ethnic Religion	Bureau of Ethnic and Religious Affairs
Family Planning	Commission of Family Planning
Administration	Bureau of Office Administration
Foreign Affairs	Office of Foreign Affairs
Archive	Bureau of Archives
Customs	Customs Office
Post	Post Bureau
Tobacco	Bureau of Tobacco
Industry	Industrial Bureaus
Meteorology	Bureau of Meteorology/Seismology
Newspapers	Party Newspapers
Representative	External Representative Offices
LPC/CPPCC	
LPC	Local People's Congress
LPC Comm	LPC Committees
CPPCC	Chinese People's Political Consultative Conference
CPPCC Comm	CPPCC Committees
Judiciary Organizations	
Court	Court
Proc	Procuratorate
Other Organizations	
Party MO	Party Mass Organizations (Labor, Youth, Women)
MO, Other	Other Mass Organizations
Other Parties	Democratic Parties
Banks	Banks and Financial Institutions
SOE	State-Owned Enterprises
Party Sch	Party Schools
Universities	Universities
Institutes	Public and Research Institutes
Military	Military
Other	Miscellaneous Offices

Table A-3 Distribution of Major Experience of IAS Officers, 1974-2014

Major Experience	Freq.	Percent	Cumulative
Land revenue management & district admn.	229343	32.42	32.42
Personnel & general admn.	55937	7.91	40.32
Finance	55696	7.87	48.19
Industries	42267	5.97	54.17
Agriculture & cooperation	35122	4.96	59.13
Urban development	32142	4.54	63.68
Human resource development	22592	3.19	66.87
Rural development	21434	3.03	69.90
Social justice & empowerment	19715	2.79	72.68
Home	19270	2.72	75.41
Health & family welfare	15842	2.24	77.65
Energy	14335	2.03	79.67
Consumer affairs, food & product	13918	1.97	81.64
Transport	11861	1.68	83.32
Commerce	11654	1.65	84.96
Planning & program implementation	10221	1.44	86.41
Textiles	7628	1.08	87.49
Local self-government	7578	1.07	88.56
Water resources	7522	1.06	89.62
Tourism	7041	1.00	90.62
Labor & employment	6743	0.95	91.57
Environment & forests	6569	0.93	92.50
Law & justice	6364	0.90	93.40
Women & child development	5622	0.79	94.19
Information & broadcasting	5059	0.72	94.91
Defense	4868	0.69	95.60
Mines & minerals	4695	0.66	96.26
Communications & information technology	4462	0.63	96.89
Culture	4024	0.57	97.46
Science & technology	3828	0.54	98.00
Youth affairs & sports	3699	0.52	98.52
Staff officers	3151	0.45	98.97
Public works	2929	0.41	99.38
Petroleum & natural gas	2212	0.31	99.69
Chemicals & fertilizers	867	0.12	99.82
Parliamentary affairs	744	0.11	99.92
External affairs	313	0.04	99.97
Corporate management	158	0.02	99.99
Development of North East Region	82	0.01	100.00

Number of observations = 707,507

Table A-4 Distribution of Bureau Personnel Records in the Chinese Bureaucracy

Bureau	Freq.	Percent	Cumulative
Government Headquarters	16,400	8.20	8.20
People's Political Consultative Conference (CPPCC)	16,043	8.02	16.21
Local People's Congress (LPC)	12,651	6.32	22.53
CCP Headquarters	12,011	6.00	28.54
State-Owned Enterprises	11,654	5.82	34.36
Mass Organizations	8,477	4.24	38.60
Finance Organizations	8,425	4.21	42.81
CPPCC Committees	3,868	1.93	44.74
CCP Commission for Discipline Inspection	3,703	1.85	46.59
LPC Committees	3,614	1.81	48.40
Public and Research Institutes	3,581	1.79	50.19
Bureau of Construction	3,423	1.71	51.90
Bureau of Agriculture	3,349	1.67	53.57
Procuratorate	3,055	1.53	55.10
Bureau of Traffic Control	3,021	1.51	56.61
Democratic Parties	2,946	1.47	58.08
Development and Reform Commission	2,916	1.46	59.54
Commission of Economics	2,870	1.43	60.97
Court	2,829	1.41	62.38
Bureau of Public Security	2,716	1.36	63.74
Industrial Bureaus	2,686	1.34	65.08
Bureau of Quality Supervision	2,650	1.32	66.41
Bureau of Commerce	2,565	1.28	67.69
Bureau of Health	2,013	1.01	68.69
Administrative Committee of Development Zones	1,968	0.98	69.68
Bureau of Taxation	1,926	0.96	70.64
Universities	1,779	0.89	71.53
Bureau of Telecommunications	1,764	0.88	72.41
Military	1,729	0.86	73.27
Bureau of Education	1,685	0.84	74.12
Party Newspapers	1,624	0.81	74.93
CCP Organization Department	1,623	0.81	75.74
Bureau of Culture	1,541	0.77	76.51
Bureau of Archives	1,499	0.75	77.26
Bureau of Land Resources	1,471	0.74	77.99
Bureau of Water Resources	1,436	0.72	78.71
Miscellaneous Offices	1,434	0.72	79.43
Bureau of Public Utilities	1,387	0.69	80.12
Propaganda Department	1,368	0.68	80.80
Bureau of Labor and Social Security	1,346	0.67	81.48
Office of Foreign Affairs	1,344	0.67	82.15
Bureau of Civil Affairs	1,320	0.66	82.81
Government Admin. Office	1,311	0.66	83.46
Bureau of Justice	1,299	0.65	84.11
Bureau of Grain	1,293	0.65	84.76
Bureau of Industry and Commerce	1,231	0.62	85.37

Bureau of Personnel	1,219	0.61	85.98
Bureau of Science and Technology	1,203	0.60	86.58
CCP Party Schools	1,160	0.58	87.16
Bureau of Housing Management	1,153	0.58	87.74
Bureau of Auditing	1,142	0.57	88.31
Post Bureau	1,141	0.57	88.88
Bureau of Civil Defense	1,126	0.56	89.44
Bureau of Environmental Protection	1,118	0.56	90.00
Supply and Marketing Cooperatives	1,113	0.56	90.56
Bureau of Finance	1,112	0.56	91.11
CCP Political and Legal Affairs Commission	1,100	0.55	91.66
Bureau of Commodity Price	1,085	0.54	92.21
Bureau of Seismology	1,021	0.51	92.72
Bureau of Statistics	987	0.49	93.21
Bureau of National Security	985	0.49	93.70
CCP Rural Work Department	967	0.48	94.19
Bureau of Sports	961	0.48	94.67
Bureau of Tourism	926	0.46	95.13
Commission of Family Planning	898	0.45	95.58
CCP Party Work Committee	825	0.41	95.99
Research Office	805	0.40	96.39
Bureau of Office Administration	745	0.37	96.76
CCP United Front Work Department	737	0.37	97.13
CCP Office	736	0.37	97.50
Bureau of Power Supply	734	0.37	97.87
Taiwan Affairs Office	685	0.34	98.21
External Representative Offices	655	0.33	98.54
Customs Office	644	0.32	98.86
Bureau of Request Handling	606	0.30	99.16
Bureau of Ethnic and Religious Affairs	571	0.29	99.45
Office of Legal Affairs	571	0.29	99.73
Bureau of Tobacco	537	0.27	100.00

Number of observations = 200,112

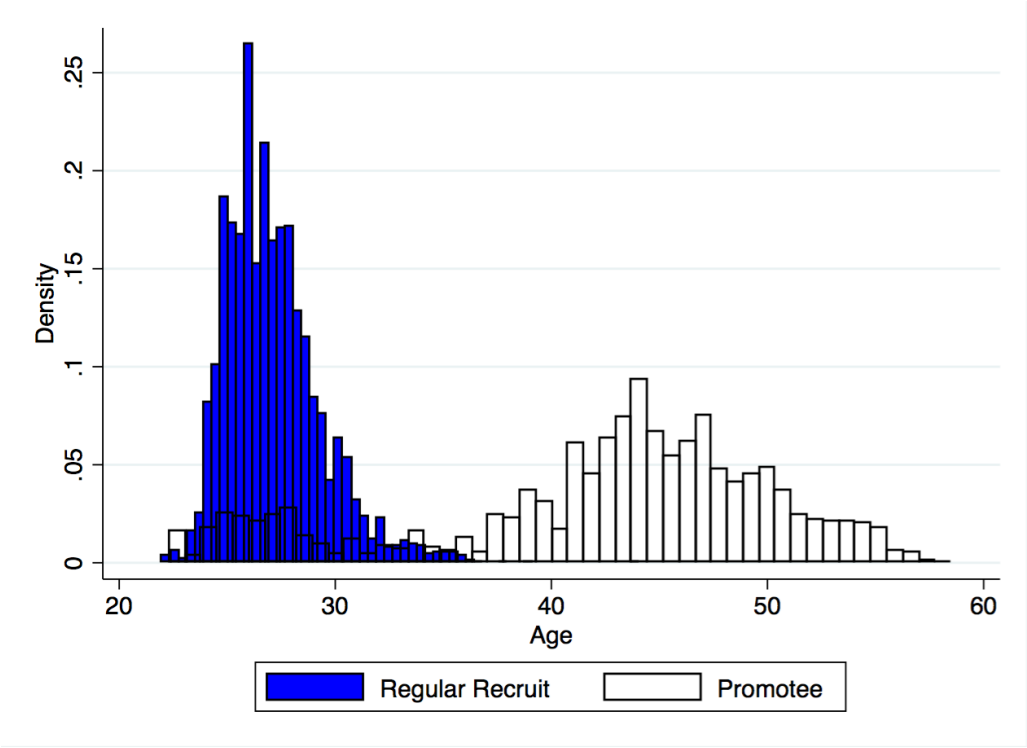

Figure A-1 Age of Recruitment into the IAS by Recruitment Type

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