Networks of Coercion: Military Ties and Civilian Leadership Challenges in China

Tyler Jost* Daniel Mattingly†

October 19, 2023

Abstract

Civilian-led coups are one of the most common routes to losing power in autocracies. How do authoritarian leaders secure themselves from civilian leadership challenges? We argue that autocrats differentiate civilian rivals in part by their social ties to the military. To reduce the threat of coup, leaders buy off civilians with strong military ties by promoting them to lower-tier institutions — but isolate these same civilians by denying them promotion to higher-tier institutions that afford opportunities to coordinate. We introduce an original dataset of over 145,000 postings of 41,603 Chinese military officers and map ties between the entire civilian and military elite between 1927 and 2014. We find that civilian leaders with strong ties to the military improve prospects for promotion to the Central Committee — but degrade the likelihood of promotion to the apex Politburo Standing Committee, particularly for civilians outside the leader's social network.

*Assistant Professor, Department of Political Science, Brown University. Email: tyler_jost@brown.edu. Web: http://www.tylerjost.com

†Assistant Professor, Department of Political Science, Yale University. Email: daniel.mattingly@yale.edu. Web: http://daniel-mattingly.com/

The leaders of any authoritarian regime should fear a military-backed leadership challenge. Coups, after all, are the most common way that authoritarian leaders are forced from office (Svolik, 2012; Geddes et al., 2018) — and nearly all successful elite-led overthrows have the backing of the armed forces (De Bruin, 2019, 2020). A growing literature has examined how civilian leaders can control the military, and prevent the army officers charged with protecting the regime from turning their guns against it (e.g., Talmadge, 2015; Paine, 2021, 2022; Meng and Paine, 2022; Grewal, 2019, 2023*b*,*a*; Brooks, 2019; Hassan, 2020, 2017; Greitens, 2016; McMahon and Slantchev, 2015).

Yet this literature generally focuses on coups led by *military* leaders and has paid less attention to *civilian* leadership challenges. This gap is important because leadership challenges by civilian elites are a frequent path to loosing power — more common, in fact, than exit by mass revolt, assassination, foreign intervention, or civil war (Svolik, 2012). Since 1946, successful civilian-led coups have occurred in 37 countries across Africa, Asia, Europe, North America, and South America, and attempted civilian coups have occurred in an additional 48 countries (Svolik, 2012). In Afghanistan, for instance, the monarchy fell in 1973 as the result of a coup led by Mohammad Daoud Khan, a civilian with long-standing ties to the military but who had not worn a uniform in decades. And in the Soviet Union, Lavrentiy Beria, Nikita Khrushchev, and Mikhail Gorbachev all faced leadership challenges from a civilian group that had the backing of the state's coercive forces.

How do authoritarian leaders secure themselves from civilian leadership challenges? In this paper, we develop a logic of civilian coup proofing emphasizing the importance of social ties between civilian and military actors. We argue that in order to challenge a leader, civilian rivals must solve two problems: (1) coordination with coercive organizations; and (2) coordination amongst themselves. Social ties that span the civil-military divide ease the costs of solving the first coordination problem, both by allowing rivals to learn about the preferences of potential military collaborators and by opening communication channels that facilitate coordinated action. Given that one of the most important ways in which social ties between civilian and military actors are formed is through

career assignments, civilians whose career trajectories allowed them to build strong social ties to the military pose more of threat to the leader's rule than civilians who lack these experiences.

We argue that leaders strategically manipulate appointments to political bodies in ways that limit the abilities of elite rivals to solve both coordination problems simultaneously. On the one hand, leaders appoint rival civilians with strong military ties to power-sharing institutions that allow them to extract rents and have a say in policy-making, but that restrict access to other civilian elites. Such high-spoils, low-access institutions, such as a party congress or central committee, are relatively large and size, and reduce the threat that strong elites pose both by reducing their motivation for challenge and by keeping costs of intra-civilian coordination high. On the other hand, leaders deny these same rival civilians appointment to other power-sharing institutions at the government's apex that, by function, ease coordination among civilian elites. Such apex institutions are much smaller. Examples include a cabinet or a Politburo Standing Comittee. Our logic builds on a growing literature on coercion and institutional power sharing in autocracies, while departing from the conventional wisdom in important ways (Meng, Paine and Powell, 2022).

To develop and test our hypotheses about the importance of civil-military network ties, we examine the world's largest, wealthiest, and most powerful autocracy: the People's Republic of China. We introduce an original dataset that catalogues over 145,000 appointments of some 41,603 Chinese military officers between 1927 and 2014. A core contribution of our paper is to conceptualize and measure the importance of military-civilian ties. The dataset we build is the most comprehensive of its kind, and allows us to map in fine-grained detail the connections between the entire CCP civilian and military elite. We build our dataset through an extensive effort to compile open source material produced by the Chinese Communist Party (CCP) and the United States government. Using this data, we map 340,000 career ties between military officers and members of the CCP elite across nearly a century.

We find that party leaders with strong ties to the military are more likely to be promoted to the Communist Party Central Committee, a body with about 200 full members. Our main research design leverages over-time changes in civilian leaders' ties to active-duty military personnel, using

individual and period fixed effects to account for individual characteristics and period shocks. In any given party congress, a one standard deviation increase in the number of ties to active military officers provides a boost of 50 to 70 percent in the likelihood of promotion to full member of the Central Committee. These findings hold even when accounting for the strength of the party member's ties to other civilian officials commonly emphasized in existing scholarship (Shih, 2004, 2008, 2022; Shih, Adolph and Liu, 2012). Despite the common view that the military is less important in Chinese elite politics today, the findings demonstrate the importance of elite social ties to the military for promotion to the Central Committee remains important across decades.

However, civilians with strong ties to military leaders are *less* likely to be rewarded with elevation to the Politburo Standing Committee, the small leadership group of five to eleven members that sits at the apex of political power in China. Examining promotion patterns across seven decades, we show that ties to military elites do not lead to civilian promotion to the Standing Committee. To the contrary, we find evidence that civilians with ties to military leaders are punished when it comes to promotion to the standing committee, particularly when they are not in the sitting leaders' personal network. Our results also suggest that strong ties to the military may hurt prospects for promotion to the party's apex as much as strong ties among civilians helps such prospects. Broadly, this is consistent with our logic of differential power-sharing, in which the party leadership would prefer to keep potential rivals with coercive power close — but not necessarily too close.

The paper contributes to a growing body of work that examines the role of the military in authoritarian politics. Much recent work has focused on the "guardianship dilemma," or how leaders of authoritarian regimes manage the trade-off between empowering the military, which can increase coup risk, and weakening the military, which can increase vulnerability to mass and foreign threats (e.g., McMahon and Slantchev, 2015; Greitens, 2016; Blaydes, 2018; Weeks, 2014; Grewal, 2019, 2023*b*,*a*; Dragu and Przeworski, 2019; De Bruin, 2020; Meng, 2020; Paine, 2021, 2022; Mattingly, forthcoming). By contrast, we highlight the importance of civil-military ties, leveraging our data to highlight an important attribute of civilian power that has been largely ignored in the prior literature. We also turn the focus from the military to understanding how leaders manage

civilians with deep ties to the coercive services. In doing so we build most directly on work by Meng and Paine (2022), who highlight a power-sharing logic for how authoritarian leaders tame military elites. By contrast, we argue that leaders will regulate the rise of *civilians* with coercive power by drawing them into the elite coalition but, crucially, not necessarily drawing them into the inner circle.

1 A Theory of Civilian Leadership Challenges and Promotion in Authoritarian Regimes

Our theory of civilian leadership challenges rests upon three propositions. First, civilian challenges require solving two different coordination problems. On the one hand, civilians must find ways to coordinate with military actors from whom they are often institutionally separated. On the other hand, civilians must finds ways to coordinate with one another, determining which elites will support their gambit. Second, social network ties to coercive organizations reduce the costs of solving the civil-military coordination problem, making civilian elites who possess these ties more capable of challenging the leader and more threatening to the leader's political survival. Third, leaders use appointments to different types of power-sharing institutions to address the varying threats that civilian rivals pose, choosing to share power with elites with strong ties to the military in tailored ways that curb their opportunities to solve the intra-civilian coordination problem.

1.1 The Twin Coordination Problems of Civilian Leadership Challenges

The most common extra-constitutional method through which autocratic leaders are removed from office is the coup d'état, in which regime elites forcefully impose a change in political leadership. Although some coups are planned by military organizations, many are instead organized by civilian elites who aspire to unseat ruling leaders. We use the term *civilian leadership challenges* to denote attempts by civilians within the regime's ruling coalition to remove the sitting leader from office. Civilian leadership challenges are conceptually similar to military coups—but the key difference is that they are organized and executed by civilians without direct control over the state's coercive organizations. As such, the outcome of civilian leadership challenges is often

an extra-constitutional change in civilian leadership, rather than a transition to military rule. Nikita Khrushchev removal from office, for example, was organized by other civilian members of the Politburo, who selected Leonid Brezhnev as the new ruler, rather than rule at the hands of the Soviet military. Such challenges by civilian hands have occurred in some 37 countries (Bjørnskov and Rode, 2020)—and are a more common reason for leader exits than mass revolts, assassinations, foreign intervention, or civil war (Svolik, 2012).[1]

All successful leadership challenges require coordination. Yet civilian leadership challenges require elites to solve two unique coordination problems. First, civilians need to coordinate among themselves to ensure they can govern once the leadership challenge succeeds, which we refer to as the *intra-civilian coordination problem*. When plotting to overthrow an authoritarian ruler, elites would be better off either jointly acting, which increases the probability of success, or in refraining from acting at all (Singh, 2014). Civilian plotters need to coordinate support for the leader's removal among other elites—and work out the distribution of power after the coup. Yet, such coordination is potentially costly, as even raising the idea of coup with the wrong person could mean prison or death.

Second, and equally important, civilians need to coordinate with military actors, which we refer to as the *civil-military coordination problem*. Civilians want to know if they can count on the support of coercive organizations when civilians call the ruler's leadership into question. If military officers oppose an attempt to challenge the sitting leader, the leader can leverage the coercive apparatus to protect them. This second coordination problem is particularly vexing to civilian rivals, because there are typically few institutional mechanisms by which civilians in authoritarian regimes can gain information about military officers. The literature on civil-military relations, for instance, emphasizes that authoritarian leaders tend to restrict the military's contact with other political leaders. As a result, most civilian elites have little information about the military actors whose support they require.[2]

[1]Data from De Bruin (2019) and Chin, Carter and Wright (2021) use different coding schemes and find fewer civilian-led coups than Svolik (2012) or Bjørnskov and Rode (2020).

[2]See Brooks (2019) for an important overviews. Note that this dynamic makes civilian leadership challenges more challenging to coordinate than military coups, as in the latter case, military leaders can more easily acquire information

We argue that a civilian elite's social ties to military leaders decrease the costs of solving the civil-military coordination problem in two ways. First, social ties provide information about the preferences of potential military backers of the leadership challenge. Ties to the military help to screen which military officers would be sympathetic to coup and which officers would oppose it, even before planning begins. In particular, shared career and wartime experiences help individuals learn about each other's basic personality and likely preferences. In the Soviet Union, for example, Nikita Khrushchev eliminated his rivals, including the chief of security services, by gaining the backing of General Georgy Zhukov. Prior career ties between Zhukov and Khrushchev were crucial for the success of the leadership challenge. Zhukov and Khrushchev had served together in World War Two and, according to Zhukov's biographer, this experience gave Khrushchev information that Zhukov had "a powerful but reliable and loyal personality" (Roberts, 2012, 260). Armed with this information, Khrushchev sought out Zhukov's support in consolidating power, most notably in securing the military's support in arresting Lavrentiy Beria, the head of the security services.

Second, social ties provide common methods of *inter-personal communication*. Coup coordination are easier to solve when challengers can leverage subtle exchanges of information to manage the risk of plotting. As Habyarimana et al. (2007, 711) note, common communities "can draw on a reservoir of common cultural material — language, experience, understandings about modes of interaction—that makes it easier for community members to communicate and work together." In the case of leadership challenges, plotters would prefer that their communication remain difficult for the sitting leader to observe. Consider the example of the plot to remove the Gang of Four in China, which occurred shortly after the death of Mao Zedong in 1976. The effort to build out a network of plotters involving both civilian and military leaders required subtle communication. For instance, one crucial meeting happened during a bathroom break during the vigil for Mao's death. General Chen Xilian approached civilian Politburo member Li Xiannian in the men's toilet and using a series of hand gestures indicated his willingness to join a plot to arrest the Gang of

about the preferences of compatriot officers.

Four (Teiwes and Sun, 2014, 562). This non-verbal communication was likely aided by the fact that the two men were old comrades-in-arms in the civil war from the Second Field Army.

Third, ties to the military may directly elevate an individual's status and prestige within the regime (Torigian, 2022; Thaler, 2022). Particularly in revolutionary regimes, contributions to the party's history are sometimes measured through experience working in military organizations. Hu Yaobang, one of the senior-most members of the CCP during the early 1980s, once commented that within the CCP there was an informal "practice of arranging seniority according to length of service in the Army" (Jost, 2023). In the event of a challenge, individuals with military backgrounds may be seen as having more authority to question the leader's right to rule.

In short, civilian-led leadership challenges are a significant threat — a more common cause of authoritarian leader exit than mass revolts. Elites with ties to the military (which we label "strong" elites for ease of reference) pose a particularly salient threat because their social ties reduce the costs of coordination between civilian and military actors during elite revolts. Given that only some civilian elites enjoy dense ties to these pivotal organizations, different civilian elites thus pose different levels of threat to the leader's survival.

1.2 The Power-Sharing Dilemma

How do leaders respond to the threats that strong elites pose to their rule?[3] The literature on authoritarian politics suggests that formal institutions — such as party central committees, cabinets, and legislatures — offer one common approach to share power and defuse conflict among civilian elites (e.g., Gandhi, 2008; Blaydes, 2010; Svolik, 2012; Weeks, 2014; Hassan, 2020). Appointment of potential rivals to elite bodies can reduce the appointee's incentives to defect and can also potentially tie the hands of rulers and make it harder for them to renege on any deal. In a review of this large and vibrant literature, (Meng, Paine and Powell, 2022) outline

[3]We use the term "leaders" to refer to the individual or set of individuals who manage elite promotions. Appointment decisions are sometimes determined by a single ruler, as in personalist dictatorships. While they are also sometimes the result of collective decision by a ruling group, we assume that authority over elite appointments is concentrated at the regime's apex even in collective rule regimes, such that appointments are made in part to curb the risk of leadership challenge.

two ways in which institutions help to limit violent conflict in autocracies. First, power-sharing institutions distribute the spoils of governance: this can include direct material benefits to elites in the broader coalition, like rents from office, and also the political power to set policy, control budgets, and make appointments. Second, power-sharing institutions reallocate power, especially coercive power, thereby tying the leader's hands and undermining their ability to renege in the future.

Yet, leaders face a trade-off in choosing whether to share power with strong elites. On the one hand, sharing power with strong elites may help to neutralize the constituency most threatening to the leader's survival.[4] Appointing strong elites to a government cabinet or party committee affords them power over how the ruling party allocates budgets, sets policy, and hires. Strong elites can use this power to nudge policy in a direction they intrinsically prefer, reaping material benefits for themselves and their allies. By sharing the pie of state resources with strong elites, leaders can reduce their payoff for launching a challenge for the purpose of gaining more control over spoils, compared to being excluded from the elite coalition altogether.

On the other hand, sharing power with strong elites could also increase the probability a leadership challenge will succeed. Leadership challenges generally require support from key players in the broader regime coalition, and belonging to top leadership bodies helps civilian rivals gather support for coups. Membership in key party and government organizations, councils, and committees magnifies the already formidable threat that strong elites pose by providing opportunities to glean information about which other elites would be likely to join an elite revolt.

1.3 Leadership Challenges, Military Ties, and Selective Promotion

We argue that leaders resolve this trade-off by appointing strong elites to some types of power-sharing institutions, while denying them appointment to others. Power-sharing institutions differ along two key dimensions that allow leaders to selectively choose how to share power with strong

[4]Note that such neutralization strategies can be construed narrowly, as by placating an individual with strong ties to the military by allowing them to extract rents. They can also be construed broadly, as by placating the military by promoting civilian cadres with whom they share strong ties.

elites. The first is the extent to which membership allows elites to *access the spoils of governance* (Meng and Paine, 2022). Appointment to these power-sharing institutions is helpful in defusing motivation for coup because it allows members to extract rents and set the political agenda. The second dimension of power-sharing institution instead pertains to the extent to which membership in a body provides *access to other regime elites*.

Appointment to high-spoils, low-access institutions — such as a large national congress that approves the political agenda — presents a logical strategy to address the challenge of strong elites. By appointing strong elites to these bodies, leaders curb motivation for revolt among those elites most threatening to their political survival. While strong elites continue to possess the latent capability to coordinate with military officers, restricted access keeps the costs of intra-civilian coordination high. In short, appointment to these specific power-sharing institutions can help to ease the problem faced by authoritarian leaders by giving strong elites access to spoils, while at the same time limiting their access to information, allies, and prestige crucial for launching a leadership challenge.

> **H1**: Civilian elites with strong ties to coercive organizations are more likely to join broader regime coalition, such as large agenda-setting bodies.

The picture looks different when considering appointment to high-level institutions. Appointment to these power-sharing institutions, especially political decision-making bodies at the apex of the government such as cabinets or political bureaus, allow civilians to coordinate with other top members of the ruling coalition and provides them with the political prestige needed to persuade the broader coalition that their challenge is legitimate. Appointment to such bodies thus eases the costs of coordination among civilian elites: the costs of civilian leadership challenges are lowest when strong elites gain access to high-access power-sharing institutions, thereby solving both types of coordination problem.

Leaders thus carefully guard appointment to high-access power-sharing institutions, carefully screening individuals before appointing them—particularly when possess strong ties to the military. One of screening mechanism that leader in evaluating promotions is whether the strong elites

is inside or outside of the leaders' own network. All else equal, elites outside the leader's personal network are more likely to have limited access to spoils from office and limited say over policy, and thus have stronger incentives to challenge the leader. The leader will also have greater difficulty monitoring leaders who belong to different social networks. As such, leaders generally prefer to promote strong elites to high-access power sharing institutions only when they are within the leader's network, thereby ensuring that elites whose institutional position lowers the costs of intra-civilian coordination are not the same elites also capable of solving the civil-military coordintaion problem as well. This leads to our second core hypothesis:

> **H2**: Civilian elites who have strong ties to coercive organizations and lack strong ties to the sitting leader will be less likely to join political decision-making bodies.

Two assumptions of our logic imply scope conditions for our theory. In order for differential power-sharing to be successful, and reduce incentives for civilians leadership challenges, two conditions must hold. First, access to the wider ruling coalition should not significantly aid a coup plot, while access to inner sanctum institutions should do so. This dynamic does not describe all regimes. For example, some poorly institutionalized regimes are vulnerable to coup challenges from lower-level military officers and backbench politicians. However, this condition is more likely to hold in well-institutionalized one-party regimes.

Second, civilians should have significant access to spoils when they join the broader ruling coalition — not just when they join the regime's inner sanctum. In other words, membership in the broader leadership group should bring enough of a payoff in terms of influence over policy, budgets, personnel, and so forth that it significantly reduces the incentives for launching a leadership challenge compared to being on the outside. Again, this is plausibly the case in strong one-party regimes, where spoils are spread widely,[5] whereas it may be less likely to be the case in less institutionalized authoritarian states. In sum, the theory is most likely to be relevant in regimes with strong party institutions and revolutionary regimes.

Our hypotheses and approach build on a large literature on elite promotion in autocracies, proposing a complementary, yet distinct logic governing elite advancement. Our approach analyzes

[5] See for example Truex (2014, 2016) on spoils in the Chinese case for members of the National People's Congress.

network ties between civilian and military leaders, and draws on a rich tradition of work on civilian factional ties, especially in China (e.g., Nathan, 1973; Shih, 2004, 2008, 2022; Shih, Adolph and Liu, 2012; Jia, Kudamatsu and Seim, 2015; Chen and Hong, 2021). Generally, this literature argues that autocrats consider a mix of loyalty and competence when promoting subordinates. Some emphasize that leaders, leaders may promote subordinates with competence in crucial arenas, such as spurring economic growth or collecting taxes (Landry, 2008; Jia, Kudamatsu and Seim, 2015; Landry, Lü and Duan, 2018; Lee and Schuler, 2020), while others suggest that authoritarian leaders have incentives to recruit and promote loyal but incompetent subordinates (Acemoglu, Egorov and Sonin, 2010; Zakharov, 2016; Scharpf and Gläßel, 2020). By comparison, we highlight the importance of ties to the military. We also build on a vibrant literature on civil-military relations in autocracies (Brooks, 2006, 2019; Paine, 2021, 2022; Meng, Paine and Powell, 2022, e.g.).

2 Military Ties and Political Survival in Chinese Politics

Political survival in China is a tough business. Splits within the party create opportunities — or at least perceived opportunities — for elites to challenge one another.[6] Leaders want to ensure that they survive these potential challenges to their power — and can think about other elites in terms of the threat that they pose in the event of a power struggle. One way that party elites are commonly differentiated from one another is by their social connections to the military (Mattingly, forthcoming), particularly when individuals are being considered for promotion. As Deng Xiaoping was contemplating his retirement in the late 1980s, for instance, he emphasized that that two successors who lacked these ties — Zhao Ziyang and Jiang Zemin — would need to "get to know" the senior ranks of the People's Liberation Army in order to compensate for this deficiency (Liu Huaqing, 2007, 530, 576). Jiang himself acknowledged this in a speech to the senior military leadership in November 1989.[7]

[6]Consider for example: Mao and Liu Shaoqi; Mao and Lin Biao; Hua Guofeng and the Gang of Four; Hua Guofeng and Deng Xiaoping; Deng Xiaoping and Zhao Ziyang; arguably Hu Jintao and Zhou Yongkang/Bo Xilai.

[7]"Speech at Expanded Session of the Central Military Commission," November 12, 1989. *Selected Works of Jiang Zemin*, 71.

2.1 How Military Ties Form in China

Social ties between civilian and military actors typically form in one of two ways. First, some cadres serve in the military early in their career before transitioning to civilian positions. Many of the party's first-generation leadership served in the People's Liberation Army during the Chinese Civil War, Second World War, or both. Prominent first-generation officials, such as Deng Xiaoping, Li Xiannian, and Yang Shangkun, all fall into this category. Military service thus offers one direct pathway by which civilian elites form social ties with other individuals who remain within the party's coercive organizations. For instance, Zhou Enlai — who later became China's first premier and foreign minister — served alongside four of China's later defense ministers, Zhu De, Peng Dehuai, Lin Biao, and Ye Jianying in the early and mid-1930s. He also served with Li Kenong, who later became the head of China's foreign and domestic intelligence arm.

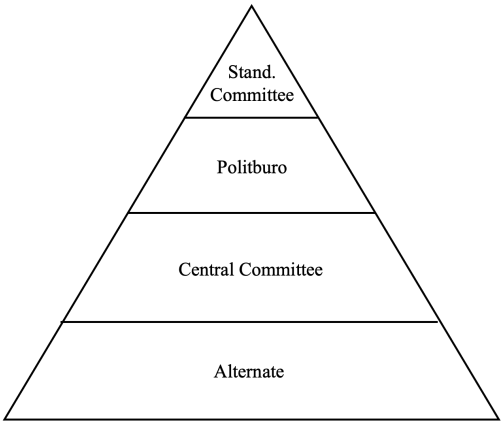
A second pathway to forming military ties is through civilian career trajectories in which party cadres serve in positions that allow them to work with military officers. The Chinese Communist Party (CCP) is organized into organizational silos (系统) that run from the party's apex down through local levels. For our purposes, the two most important silos pertain to: (1) civilian party silos, who serve as party secretaries in districts and provinces; and (2) military silos, in which military units are similarly organized by district and province. Concomitant appointment to the same region, however, offers one way in which civilians and military officer can bridge silos to form connections. While serving as the governor of Fujian province, for example, Xi Jinping built connections with air force officer Xu Qiliang, who was also serving in the same province at the same time.

2.2 Power-Sharing Institutions in China

The Chinese Communist Party is a sprawling political organization, the membership of which is estimated at approximately 96 million. It is also a highly hierarchical organization. Party members hold key political posts running from local administration (i.e., prefectures and townships) all the way to the apex of national government. Like most party-led autocracies, individuals stand to

benefit from promotion to more senior ranks. Promotion into key national bodies provides party elites with more influence over policy, as well as opportunities to extract rents (Truex, 2016).

Figure 1: Hierarchy of Power-Sharing Institutions in China



We focus our attention on two bodies that plausibly provide some benefits in terms of policy influence and rent extraction, but which are differentiated by the extent to which they also magnify coup threats. The first is the Central Committee, a national-level body composed of approximately 200 of the most important party cadres. Membership in the body is determined by a vote of members of the larger party congress who vote up or down on a closed list determined by higher-level leaders, where the number of names exceeds the number of slots. Leaders attempt to manipulate the composition of the Central Committee by signaling their preferences, but because its composition is determined by ballot, they have imperfect control.[8] Membership on the Central Committee affords party cadres substantially higher ability to extract rents and at least a modicum of influence over policy. Yet, Central Committee membership does not substantially increase or decrease the individual's ability to perpetrate a leadership challenge. The body meets only infrequently, usually once per year. Moreover, because the body is large, it offers few opportunities to coordinate leadership challenges.

The same cannot be said of the Politburo Standing Committee (PBSC), an exclusive body of 5 to 11 members that sits at the apex of national government. Membership on the the PBSC both increases access to spoils *and* magnifies the ability to coordinate a leadership challenge. On the

[8] See Wu (2015) for an important discussion.

one hand, PBSC affords members substantial influence in shaping party decisions. The PBSC has served an advisory and deliberative function throughout most of the Party's history. Members can attend routine meetings where important policies are discussed and decided upon. Moreover, appointment to the PBSC also serves a symbolic purpose establishing members as the most politically influential cadres in the Party. This is important because at least some of the Party's decision-making has historically occurred in informal settings before and after the PBSC convenes, but typically within the select group of PBSC members.

3 Data

To explore elite promotion patterns within the CCP, we leverage three sets of data — two of them specifically developed for this project. First, we collected original data on the membership of the Political Bureau (Politburo) of the Chinese Communist Party from 1927 to present.[9] For each Politburo member, we code the position (member, standing committee member, and alternate), as well as their date of entry and exit.

Second, we collected data on the careers of 41,167 Chinese military officers between 1927 and 2014. To do so, we leveraged two categories of sources materials. The first are the organizational histories maintained by the PLA General Political Department and published in the mid-1990s. Histories are divided into six volumes corresponding to commonly-referenced historical periods: (1) the Agrarian Revolutionary War (土地革命战争时期) from 1927 to 1937; (2) the Anti-Japanese War (抗日战争时期) from 1937 to 1945; (3) the Civil War (全国解放军战争时期) from 1945 to 1949; (4) the national founding (基本完成社会主义改造和开始全面建设社会主义时期) from 1949 to 1966; (5) the Cultural Revolution (文化大革命时期) from 1966 to 1976; and (6) the new era of Socialist modernization (社会主义现代化建设新时期) from 1976 to 1992. The second category are a similar set of annual yearbooks maintained by the US government entitled *The Directory of PRC Military Personalities*.[10] The volumes available cover the period between

[9] Data were compiled from the *CCP Organizational History* (Wang, 2000). For a similar approach, see Chen et al. (2021).

[10] Both the PLA organizational histories and the US government directories are publicly available in libraries at

1988 and 2014.

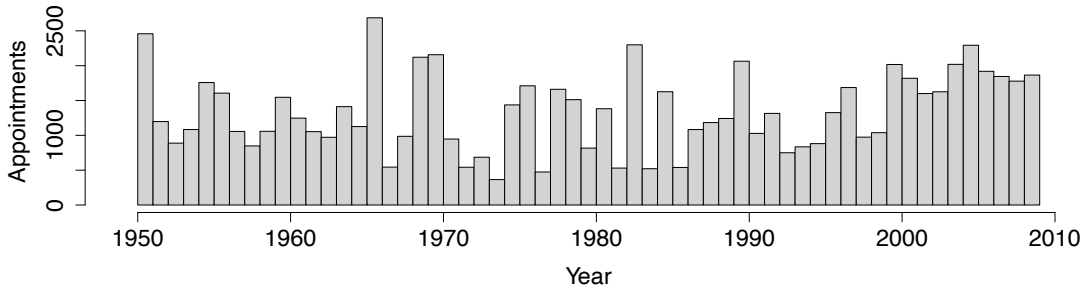
We began by applying Optical Character Recognition (OCR) software to digitized versions of these texts. A supervised team of research assistants then manually reviewed the accuracy of the OCR process. Critically, the research assistants ensured that the unit was properly categorized within the PLA's organizational hierarchy as recorded in the original source material. That is, for each individual in our data, the research assistants coded not only the specific unit to which they were assigned, but where that unit fit within the PLA. This component is critical given our theoretical interest in social network ties within the Chinese military. Given the scope of appointments recorded in these materials, we chose not to code other biographical and demographic covariates (e.g., ethnicity, age), as there would be insufficient information to code characteristics for the majority of individuals in our data. Additional details regarding the dataset and coding rules are found in Appendix §B.

Table 1: Example Career Data for Liu Huaqing

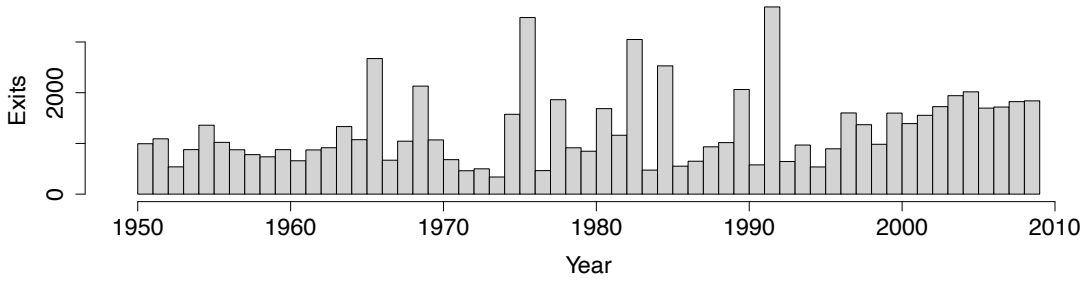
Position	*Unit*	*Years*	*Source*
Organization Chief	Political Department, 25th Red Army	1934-1935	*PLA Organizational History*, Vol. I
Confidential Section Chief	8th Route Army Command Group	1938-1939	*PLA Organizational History*, Vol. II
Political Committee Member	Second Field Army Second, Sixth Brigade	1945-1946	*PLA Organizational History*, Vol. III
...	...	...	...
Vice President	PLA Naval Academy	1953-1954	*PLA Organizational History*, Vol. IV
...	...	...	...
Commander	PLA Navy	1982-1989	*PLA Organizational History*, Vol. VI
Deputy Secretary General	Central Military Commission	1987-1989	*Directory of PRC Military Personalities*
Vice Chairman	Central Military Commission	1990-1997	*Directory of PRC Military Personalities*

The data extracted from these resources are especially valuable for several reasons. For one, both are organized in a similar fashion, meaning that it is comparatively easy to merge and compare appointments across the two sources. The records are organized by PLA unit, beginning with the Central Military Commission (the highest military organ inside the CCP) and then moving downwards through military's organizational hierarchy. Another advantage of these materials is that they are exceptionally detailed. Existing data sets (e.g., Mattingly, forthcoming) of Chinese military officers have focused on senior levels. Our data not only capture organizational affiliations

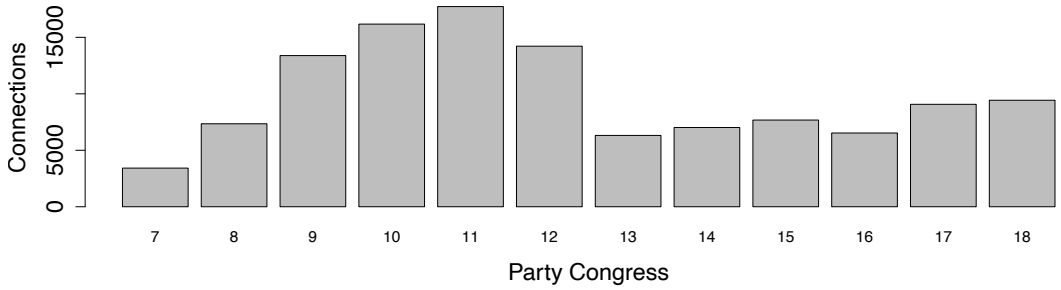
Harvard University, Princeton University, and George Washington University.



(a) PLA Appointments



(b) PLA Exits



(c) PLA Connections to Central Committee Members by Party Congress

Figure 2: *Note*: Top figure reports the number of new military appointments by year between 1927 and 2014. The bottom figure reports appointments only for the 1,727 PLA officers who were appointed to the Central Committee at some point during their career.

dating back to the PLA's founding, but do so with a much higher degree of granularity,including appointments of all members of the General Staff Departments, Field Armies and Military Regions, provincial headquarters, as well as other subsidiary military divisions. To our knowledge, this provides the most comprehensive data yet available describing the career history (and thus social networks) of the bulk of the PLA officer corps. Table 1 uses the career trajectory of Liu Huaqing as an illustrative example.

Finally, to identify the pool of cadres who might be promoted to the CCP Politburo and Standing Committee, we rely upon the CCP Leadership Database (Shih, Adolph and Liu, 2012), which lists all members of the CCP Central Committee. These data are additional helpful because they provide biographical covariates for the Central Committee cadres in whose promotion we are interested. To identify the pool of cadres who might be promoted to the Central Committee full or alternate members, we use data on the universe of all prefecture-level party secretaries and mayors from 1949 to the present, published by the China Stock Market & Accounting Research Database (CSMAR). Prefecture-level leaders are important because unlike province-level leaders, who generally belong to the Central Committee, there is significant variation in whether they join the Central Committee.

4 Analysis

Our analyses use two panel datasets. The first dataset includes all prefecture-level party and government leaders and examines promotion to alternate or full members of the Central Committee. The second dataset includes all full and alternate members of the CCP Central Committee. Membership in key bodies generally shifts during each party congress, and only in rare cases between party congresses, so we create a dataset where each observation is an individual in a given party congress.

4.1 Measurement

We examine three main outcomes. First, to analyze power-sharing through inclusion in the wider ruling coalition, we focus on promotion from non-member of the Central Committee to full or alternate member of the Central Committee. Our main outcome is a takes a value of one if an individual is a full or alternate member and a value of zero otherwise. Second, we examine promotion from alternate to full member of the Central Committee. Again, we focus on a simple dichotomous outcome, that takes a value of zero if an individual is an alternate member in a given party congress and a value of one if they are a full member. Third, we examine promotion to the elite Politburo Standing Committee. Once again, we use a simple dichotomous measure that takes a value of zero if a person is not a member and a value of one if they join. In some cases individuals are promoted, purged, or demoted during a party congress. We record the highest value they achieve. In Appendix §C, we present alternate ways of coding outcomes, such as an ordinal measure of promotion.

In our analysis, we examine pooled results for all individuals in the dataset and also subset our analysis to look at civilians and military officers separately. We code an individual in the dataset as a civilian if they do not have any prior experience as a military officer and an officer if they have at least one prior position in the PLA.

Our main explanatory variable examines the centrality of Central Committee members in military-civilian social networks. Specifically, for each Central Committee member, we code a social tie to any of the 41,603 military officers in our data if one of two conditions are met. The first condition is when the two individuals served in the same active military unit at the same time. For most civilian members of the Central Committee, these connections were formed through service in World War II and the Chinese Civil War, when most of the party's senior leadership were soldiers. For military members of the Central Committee, these connections are served by overlapping service in the same unit. The second condition is when the two individuals served in the same body at the provincial, district, or prefecture level. For example, when individuals serve as a provincial governor they often serve in provincial defense mobilization committees; when they

serve as province party secretary they are also concurrently the first party secretary of the province military district. We thus code province governors and secretaries as connected to the specific military officers serving in provincial or district leadership positions during the civilian cadre's tenure. In a similar fashion, we code prefecture-level leaders as having ties to the specific military officers serving in leadership positions of the same prefecture level military sub-districts, as well as PLA Group Army leaders stationed in the same prefecture, during the civilian cadre's time at that locality.[11]

The main analysis employs a degree centrality measure of connectedness within military networks. This measure is the number of connections that an individual has to active duty personnel. We take the log value of the degree centrality measure and normalize it so that it has a mean value of zero and a standard deviation of one. Figure 3 provides examples of degree centrality scores along with network graphs. In Appendix §C, we replicate our results using other measures of network centrality including eigenvector centrality and authority centrality.

4.2 Research Design

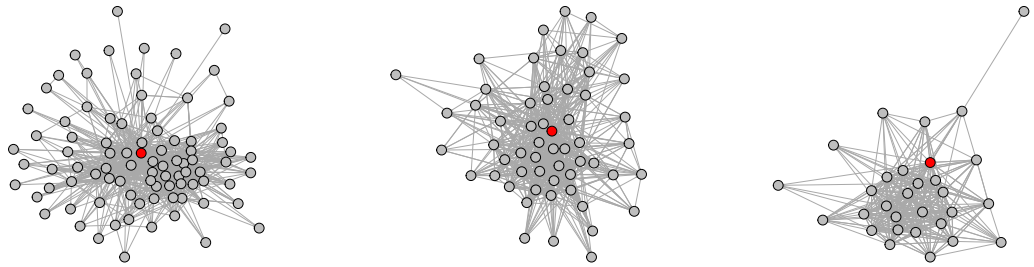
Our research design uses two-way fixed effects to estimate the effect of military connections on elevation to the Central Committee and Standing Committee. Our main specification is the following:

$$y_i t = \beta_1 D_i t + \mu_i + \delta_t + \varepsilon_i t \tag{1}$$

Here, $y_i t$ is the binary measure of power-sharing (i.e. inclusion in the Central Committee or Politburo Standing Committee) for individual i in party congress t. Our unit of analysis is the party congress because most of the variation happens during party congress changeovers, rather than year-to-year.

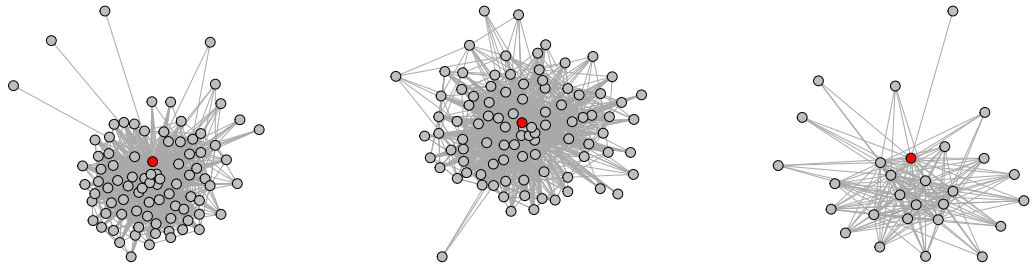
[11] For this analysis, we limit our measure to ties to PLA officers who in that period have become members of the Central Committee. Most prefecture-level military leaders are unlikely to be promoted, and ties to these lower-level officers are less important.

Network Degree Centrality Scores in the 8th Party Congress, Starting 1956



(a) Mao Zedong: 1.446 (b) Lin Biao: 1.487 (c) Zhou Enlai: 0.913

Network Degree Centrality Scores in the 9th Party Congress, Starting 1969



(d) Mao Zedong: 1.414 (e) Lin Biao: 1.476 (f) Zhou Enlai: 0.480

Figure 3: Examples of civil-military network graphs with normalized degree centrality values for Party Chairman Mao Zedong, Party Vice Chairman Lin Biao, and Premier Zhou Enlai in the 8th and 9th Party Congresses. Leader nodes marked in red. Where Mao and Lin had significant ties to active duty PLA leaders across both Congresses, Zhou Enlai's ties declined in the 9th Party Congress during the Cultural Revolution.

The variable D_it is a *military* network centrality score for each individual in each party congress which has a mean value of 0 and a standard deviation of one. We include individual fixed effects μ_i that absorb time-invariant differences between individuals. We also include party congress fixed effects δ_t that absorb common time period shocks. The key assumption of this research design is that time-varying changes do not drive both network centrality and our outcome.

We also estimate a set of regressions with control variables. The first and most substantively important control variable is an individual's *civilian* network centrality score, which measures the density of a cadre's network ties to other civilians within the party. Like the military network centrality score, we normalize the measure such that it has a mean value of 0 and a standard deviation of one. We construct this variable in a method analogous to the military network centrality score. Specifically, individuals who served at a senior level within the same central or government organ (e.g., the Ministry of Commerce), a province, or district at the same time were coded has possessing a tie. Categorizing "senior level positions" varied by the assignment type, but generally included roles at the center of each administrative unit (e.g., minister, vice minister, bureau/department head, provincial (vice) party secretary/governor, provincial people's congress chairman, provincial standing committee member, provincial party secretariat, provincial department head, district party secretary/head).[12] Finally, while we lack time-varying covariates and the individual fixed effects absorb time-invariant characteristicsbeyond civilian network centrality scores the effect of fixed demographic characteristics — such as educational background, ethnic background, or princeling status — may vary by period. In total, we incorporate these two sets of control variables by estimating fixed effects regressions of the following form:

$$y_it = \beta_1 D_it + \beta_2 C_it + \mu_i + \delta_t * \lambda + \varepsilon_it \tag{2}$$

[12]Note that because the data in Shih, Adolph and Liu (2012) only include career histories for cadres who eventually promote to the Central Committee, a raw measure of all civilian connections would overestimate the association between civilian network centrality and promotion. Since our data include the full sample of individuals within the Central Committee, however, we only measure ties formed with individuals already promoted to the Central Committee. As a result, the civilian network centrality score is closer to the concept of patronage, whereas our military network centrality score more directly measures to full range of ties to individuals within the PLA.

These regressions are the same as (1) but include a vector of civilian network centrality scores C_it for each individual in each party congress, as well as a matrix of time-invariant characteristics λ that we interact with period (party congress) dummy variables. Specifically, we interact the period dummies with prior provincial party secretary service (taking a value of 1 if the individual has served in this role), prior provincial governor service (taking a value of 1 if the individual has served in this role), minority status (taking a value of 1 if the individual is a minority), princeling status (taking a value of 1 if the individual has parents who were CCP leaders), and college education (taking a value of 1 if the individual went to university). These capture outsider status, insider status, and human capital, all of which could potentially drive inclusion in the ruling coalition. In the analysis of prefecture-level leaders, for which we have a different set of covariates, we include controls for education, sex, age, and service as a prefecture party secretary.

4.3 Results

Our theory suggests that in order to reduce the risk of a civilian leadership challenges, leaders will promote civilians with strong ties to the military to positions inside the ruling coalition — in China's case the party Central Committee. At the same time, leaders should be reluctant to promote civilians with strong leadership ties to apex bodies like the Politburo Standing Committee, where they could gain the resources, connections, and prestige to launch a challenge. In this section, we examine these claims using our panel data.

4.3.1 Party Leaders with Strong Military Ties More Likely to Join the Central Committee

Does having strong social ties to the military networks aid with promotion into the broader ruling coalition? In Table 2, we present results using our fixed effect framework and examine promotion to full or alternate member of the Central Committee among the pool of civilian prefecture-level leaders. Promotion at this career stage is rare: about 5 percent of leaders join the central committee as an alternate or full member.

The results show that for prefecture-level leaders, centrality in military networks is strongly

correlated with an increase in promotion. We first present results with out controls and only individual and period (party congress) fixed effects in column (1) and then add controls in column (2) to account for possible time-varying trends. Both suggest that a one standard deviation increase in network centrality in the military leads to an approximately 1 percent increase in likelihood of promotion to the Central Committee from a baseline of 5 percent.

Next, we exclude leaders with a military background from the analysis to focus just on leaders with civilian backgrounds; particularly in the period just after the revolution and during the Cultural Revolution, military leaders took on important roles in local governance. The results remain significant and substantively unchanged.

The results are consistent with our hypothesis that those with military ties will be promoted to large agenda-setting bodies (H1). Nevertheless, we must be cautious in interpreting these results. The dataset does not include officials ranked below or above the prefecture-level. In particular, officials who are promoted from prefecture-level leadership to positions as party, central government, or prefecture government are censored. This means the results, while consistent with our hypotheses, should be interpreted in a narrow way: they can only speak to promotion conditional on remaining a prefecture mayor or secretary. With this in mind, we turn to another test of the same hypothesis using a different dataset.

We now turn to our results that include all full and alternate members of the Central Committee and their ties to the military, and focus on promotion to full member of the Central Committee. The results are presented in Table 2.

There is a strong association between military ties and promotion to full member of the Central Committee. In column (1), we present results without controls but with individual fixed effects and congress fixed effects. Consistent with H1, a one standard deviation increase in network centrality leads to a 15 percent increase in the likelihood of promotion to the full central committee. This is a significant increase from the baseline probability of promotion of 58 percent. In column (2) we add control variables interacted with the time dummies, to account for possible time-varying differences in how career and personal background influences promotion prospects. For example,

Table 2: Fixed effect regression on a panel of all prefecture party secretaries and mayors, 1949 to the present. Each period is a party congress. Outcome is promotion to Full or Alternate Member of the Central Committee. The key results in models (3) and (4) show that civilians benefit with strong ties to the military are more likely to promote to the Central Committee. Models with alternative measures of network centrality presented in Appendix §C.

	Dependent variable:					
	Promotion to Central Committee (Full or Alternate Member)					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Military Network Degree Centrality	0.009***	0.009***	0.008**	0.008**	0.011***	0.010***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	3,795	3,018	3,303	2,624	2,820	2,495
Observations	7,347	5,969	6,400	5,199	5,279	4,781
R^2	0.740	0.750	0.718	0.732	0.732	0.747

Note: Robust standard errors are clustered by individual. Controls are for education, age, sex, and party secretary.
*p<0.1; **p<0.05; ***p<0.01

it could be that in some periods, college education, princeling status, or career backgrounds might be treated differently than in others. The results remain substantively unchanged.

Next, we focus on the population of interest and our key results: civilian elites. We use a conservative measure of civilian elites, excluding any individual who has one or more current or past posts in the PLA.[13] Column (3) presents results without controls and column (4) presents results with controls. The result for civilian elites are similar in magnitude to the pooled results.

Our results suggest that centrality in military networks may have a large influence on inclusion in the Central Committee. A one standard deviation change in network centrality is correlated with a 15 to 16 percentage point increase in the likelihood of promotion (from a baseline of 53 percent). However, interpreting these results as an estimate of the causal effect of connections on promotion requires the strong assumption of no time-varying differences among individuals gaining and losing connections. Our research design which includes controls helps to mitigate concerns about some factors, such as differences in career paths, ethnicity, family background,

[13]The results are robust to alternative operationalizations.

Table 3: Fixed effect regression on a panel of all full and alternate Central Committee members, 1949 to the present. Each period is a party congress. Outcome is promotion to the Full Central Committee. The key results in models (3) and (4) show that civilians benefit from being central in military networks for promotion to the Central Committee. Models with alternative measures of network centrality presented in Appendix §C.

	Dependent variable:					
	Full Member of the Central Committee					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Military Network Degree Centrality	0.151^{***}	0.147^{***}	0.156^{***}	0.158^{***}	0.216^{***}	0.233^{***}
	(0.021)	(0.022)	(0.023)	(0.026)	(0.032)	(0.035)
Civilian Network Degree Centrality		0.009		0.024		-0.014
		(0.015)		(0.017)		(0.027)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	1,857	1,857	1,503	1,503	859	859
Observations	3,564	3,321	2,808	2,740	1,470	1,429
R^2	0.333	0.372	0.354	0.387	0.447	0.471

Note: Robust standard errors are clustered by individual. Controls are for provincial secretary, provincial governor, ethnic minority, princeling, and education. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

and education. But we cannot rule out time varying differences that we do not account for in our model.

One potential question pertains to whether these results only hold for the early generations of Chinese leaders (Mao Zedong, Hua Guofeng, and Deng Xiaoping) who had participated in the Chinese revolution. After all, these leaders came to high positions in the Communist Party during the revolution and were military heroes before they became national leaders.

Our results show that the results remain the same in the post-revolutionary generation. In columns (5) and (6) we present results subset to the years after the revolutionary generation had turned over power. We find that in the congresses held after Deng's handover of power to Jiang Zemin (in 1992) the results are if anything slightly stronger, although the confidence intervals are wide enough we cannot say conclusively if the two periods are different. This suggests that our hypothesis that centrality in military networks is associated with inclusion in the Central Committee holds across time and is not limited to the revolutionary generation when the military played a

Table 4: Fixed effect regression on a panel of all full and alternate Central Committee civilian members, 1949 to the present. Outcome is promotion to the Politburo Standing Committee. The key results are the interaction between military network degree centrality and position within the leader network in columns (1) to (4). Models with alternative measures of network centrality presented in Appendix §C.

	Dependent variable:			
	Promotion to the Politburo Standing Committee			
	All Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)
Military Network Degree Centrality	0.016	-0.026^{**}	0.0002	-0.043^{***}
	(0.010)	(0.011)	(0.012)	(0.013)
Outside Leader Network	-0.005	0.024^{*}	0.010	0.033^{*}
	(0.014)	(0.014)	(0.020)	(0.020)
Civilian Network Degree Centrality		0.056^{***}		0.050^{***}
		(0.012)		(0.015)
Mil. Degree x Outside Leader Network	-0.045^{***}	-0.038^{***}	-0.061^{***}	-0.046^{***}
	(0.013)	(0.011)	(0.022)	(0.018)
Individual fixed effects	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓
Controls		✓		✓
Clusters	1,503	1,503	859	859
Observations	2,808	2,808	1,470	1,470
R^2	0.085	0.221	0.118	0.307

Note: Robust standard errors are clustered by individual. Controls are for provincial secretary, provincial governor, ethnic minority, princeling, and education. *p<0.1; **p<0.05; ***p<0.01

visible role in elite politics.

4.3.2 Civilian Leaders with Military Ties Less Likely to Join the Standing Committee

Do civilians with strong ties to the military also shape prospects for promotion to the apex of power? To examine this question, we shift our focus to the appointment to the Politburo Standing Committee, rather than the Central Committee. As discussed above, the Politburo Standing Committee is a very small slice of the ruling coalition, with five to eleven members, or around 2 percent of the larger group of full and alternate Central Committee members.

Table 4 presents the results for correlation between centrality in military networks and promotion to the standing committee. All models examine the interaction between military network de-

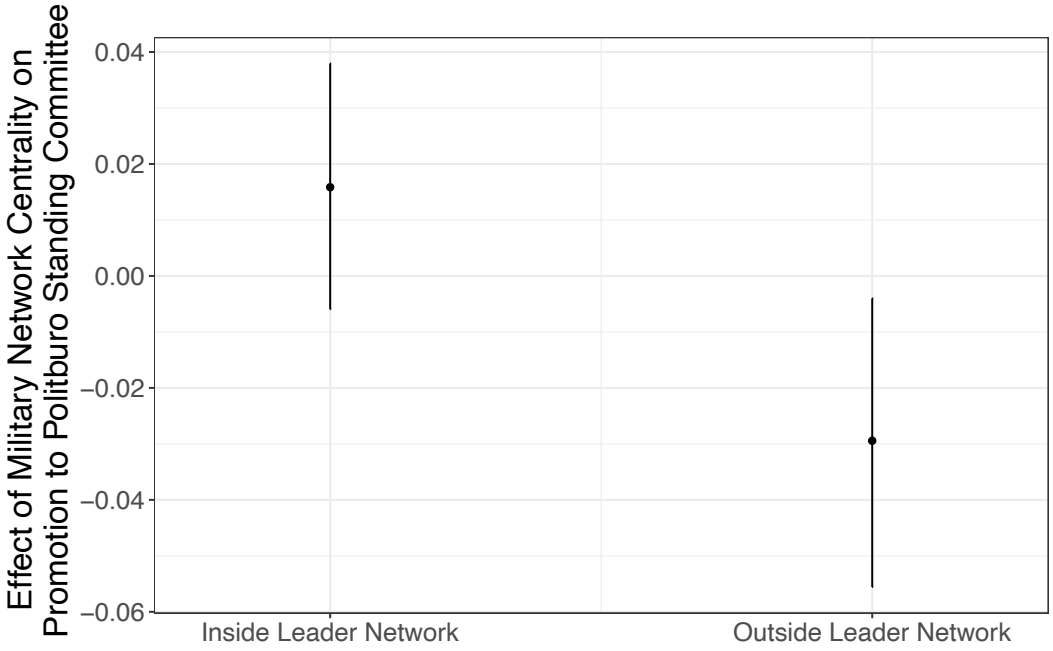
gree centrality and position (outside vs. inside) the leader's network. As noted above, we theorize that the association between strong military ties and promotion to the party's apex is conditional on network ties to the leader. Put differently, while dense military ties should be a hindrance to promotion for cadres outside the leader's network, these ties may present less of an obstacle — and may even be an asset — for cadre's within the leader's network.

Columns (1) and (2) report models testing the relationship between military ties and promotion for the full pool of civilian individuals in the subsidiary Central Committee. In both models, the interaction between military network ties and position within the leader's network is statistically significant. To ease substantive interpretation, Figure 4 plots the interaction between our two variables of interest from the model in column 1. The left-hand band shows that for individuals inside the leader's network, military ties are associated with a positive, but statistically insignificant relationship with promotion to the party's apex. The right-hand band instead shows that for cadre's outside the leader's network, there is a strong *negative* relationship between stronger military ties and promotion to the standing committee. The nature of the interaction remains unchanged once we control for civilian network centrality, as well as other career and demographic characteristics that may shape the prospects of promotion: a civilian cadre's ties to the military are a liability for promotion when the cadre is less familiar, and thus potentially more threatening, to the leader.

In columns (3) and (4), we subset our analysis to just the period after the transition from the revolutionary leadership generation in 1989. Our results are strongest for this period. We find that the magnitude of the negative association between military centrality and standing committee promotion is roughly equal to the magnitude of the positive association between civilian centrality and standing committee promotion. One interpretation of this finding is that conditional on being outside the leader's network, dense military ties are as much of a hindrance to advancement within the CCP as dense civilian ties are an asset to it.

Overall, these results suggest that strong ties to the military do not benefit individuals for promotion to the apex of power, and may instead hurt them. This is somewhat surprising given popular intuitions about Chinese politics, especially in the Mao and Deng eras. In the first four

Figure 4: Interaction between military degree centrality and leader network position (model 1 of Table 4). Bands are 95% confidence intervals. Left-hand estimate illustrates that for individuals inside the leader's network, the effect of strong military ties is statistically indistinguishable for zero. The right-hand estimate illustrates the negative effect of strong military ties on promotion to the standing committee for individuals outside the leader's network.



decades of CCP rule, prominent figures with strong military backgrounds such as Deng Xiaoping and Lin Biao climbed to the heights of civilian power. Our results suggest that looking at the broader ruling coalition, civilian leaders with strong ties to the military do not enjoy a special advantage in promotion to the apex of power, and are more likely to be excluded.

5 Conclusion

In this paper we made the case that the leadership of authoritarian regimes distinguishes civilian elites based on their ties to the military. We introduced new data on some 41,000 PLA officers that allowed us to build fine-grained measures of how central civilian elites are in military networks. We theorized the leaders will have incentives to give strong civilian elites seats in the larger ruling coalition, which can reduce their incentives to launch a challenge. At the same time, leaders will be

less likely to appoint leaders to top positions at the heights of power, since these positions provide extraordinary opportunities to launch a challenge.

Our findings showed, first, that civilians who are more central in military networks are more likely to be appointed to the party Central Committee. This evidence was consistent with the notion that leaders will want to ensure that civilians with strong ties have a seat at the table.

Second, our results showed that promotion to the Politburo Standing Committee was not helped by network connections. To the contrary, we found evidence that promotion to the Standing Committee is hurt by military connections. This supports the notion that leaders do not want civilians with strong ties to coercive institutions too close to the seat of power, especially those outside of their personal networks.

These findings help to illustrate why the appointment of a leader with strong military ties can be disruptive. Consider again the examples of Lin Biao and Deng Xiaoping, who both had strong ties and who both made it to the Standing Committee under Mao. Yet Mao purged them both (Deng twice). One reasonable explanation is that he feared that their authority in the military made them potentially formidable challengers, and so he acted in order to safeguard his own interests.

Our results also leave open avenues for future research. One important question is whether these results extend to other types of regimes. The type of fine-grained data required for this sort of analysis likely limits future research in this vein to single-country studies. We argue that the results we find are most likely to apply to well institutionalized one party regimes, where the threat of a civilian leadership challenge may be larger than that of a military coup. Future research might probe whether a similar pattern holds across different types of authoritarian regimes.

Additional research could also examine what happens off the equilibrium path of our theory. First, how do these networks shift in the aftermath of a successful civilian coup? China is an interesting case in that since 1949 there has arguably only been one successful leadership challenge that caused a leader to stand aside: Deng's unseating of Hua Guofeng. We uncover no clear shift in the Chinese case. Second, what happens after the elevation of a leader with strong military ties to an apex body? This can be analyzed qualitatively in China, examining cases like the rise of Deng

or Lin.

Our findings help to fill a gap in the literature on authoritarian politics by supplying a theory for how regimes avoid civilian leadership challenges. Other authors have analyzed civilian coups using cross-national data and in conjunction with other types of coups (e.g., Svolik, 2012; Bjørnskov and Rode, 2020). We new bring fine-grained data on military network ties and a theory that helps to explain the power sharing logic through which regimes like China can successfully stave off a civilian challenge: by sharing power with strong elites but not bringing them to the inner sanctum. Our results also imply a condition of authoritarian breakdown. When civilian elites must share power with elites with strong military ties, it can be destabilizing to the system as a whole.

References

Acemoglu, Daron, Georgy Egorov and Konstantin Sonin. 2010. "Political Selection and Persistence of Bad Governments." *The Quarterly Journal of Economics* 125(4):1511–1575.

Bjørnskov, Christian and Martin Rode. 2020. "Regime Types and Regime Change: A New Dataset on Democracy, Coups, and Political Institutions." *The Review of International Organizations* 15(2):531–551.

Blaydes, Lisa. 2010. *Elections and Distributive Politics in Mubarak's Egypt*. New York: Cambridge University Press.

Blaydes, Lisa. 2018. *State of Repression: Iraq under Saddam Hussein*. Princeton: Princeton University Press.

Brooks, Risa. 2006. "An autocracy at war: Explaining Egypt's military effectiveness, 1967 and 1973." *Security Studies* 15(3):396–430.

Brooks, Risa A. 2019. "Integrating the Civil–Military Relations Subfield." *Annual Review of Political Science* 22:379–398.

Chen, Hao, Saul Wilson, Changxin Xu, Cheng Cheng and Yuhua Wang. 2021. "Dethroning the Mao-Era Elite: Using *Organizational Histories* to Illuminate Cadre Management." Working Paper.

Chen, Ting and Ji Yeon Hong. 2021. "Rivals Within: Political Factions, Loyalty, and Elite Competition under Authoritarianism." *Political Science Research and Methods* 9(3):599–614.

Chin, John J., David B. Carter and Joseph G Wright. 2021. "The Varieties of Coups D'état: Introducing the Colpus Dataset." *International Studies Quarterly* 65(4):1040–1051.

Cinelli, Carlos and Chad Hazlett. 2020. "Making sense of sensitivity: Extending omitted variable bias." *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* 82(1):39–67.

De Bruin, Erica. 2019. "Will There Be Blood? Explaining Violence during Coups d'État." *Journal of peace research* 56(6):797–811.

De Bruin, Erica. 2020. *How to Prevent Coups d'État*. Cornell University Press.

Dragu, Tiberiu and Adam Przeworski. 2019. "Preventive Repression: Two Types of Moral Hazard." *American Political Science Review* 113(1):77–87.

Gandhi, Jennifer. 2008. *Political Institutions Under Dictatorship*. New York: Cambridge University Press.

Geddes, Barbara, Joseph George Wright, Joseph Wright and Erica Frantz. 2018. *How Dictatorships Work: Power, Personalization, and Collapse*. New York: Cambridge University Press.

Greitens, Sheena Chestnut. 2016. *Dictators and Their Secret Police: Coercive Institutions and State Violence*. New York: Cambridge University Press.

Grewal, Sharan. 2019. "Military defection during localized protests: The case of Tataouine." *International Studies Quarterly* 63(2):259–269.

Grewal, Sharan. 2023*a*. "Military Repression and Restraint in Algeria." *American Political Science Review* pp. 1–16.

Grewal, Sharan. 2023*b*. *Soldiers of Democracy?: Military Legacies and the Arab Spring*. Oxford University Press.

Habyarimana, James, Macartan Humphreys, Daniel N. Posner and Jeremy M. Weinstein. 2007. "Why Does Ethnic Diversity Undermine Public Goods Provision?" *American Political Science Review* 101(4):709–725.

Hassan, Mai. 2017. "The strategic shuffle: Ethnic geography, the internal security apparatus, and elections in Kenya." *American Journal of Political Science* 61(2):382–395.

Hassan, Mai. 2020. *Regime Threats and State Solutions: Bureaucratic Loyalty and Embeddedness in Kenya*. New York: Cambridge University Press.

Jia, Ruixue, Masayuki Kudamatsu and David Seim. 2015. "Political Selection in China: The Complementary Roles of Connections and Performance." *Journal of the European Economic Association* 13(4):631–668.

Jost, Tyler. 2023. *Bureaucracies at War: Institutional Origins of Miscalculation*. New York: Cambridge University Press.

Landry, Pierre F. 2008. *Decentralized Authoritarianism in China: The Communist Party's Control of Local Elites in the Post-Mao Era*. New York: Cambridge University Press.

Landry, Pierre F., Xiaobo Lü and Haiyan Duan. 2018. "Does Performance Matter? Evaluating Political Selection Along the Chinese Administrative Ladder." *Comparative Political Studies* 51(8):1074–1105.

Lee, Don S. and Paul Schuler. 2020. "Testing the 'China Model' of Meritocratic Promotions: Do Democracies Reward Less Competent Ministers than Autocracies?" *Comparative Political Studies* 53(3-4):531–566.

Liu Huaqing. 2007. *Liu Huaqing huiyilu [Memoirs of Liu Huaqing]*. Beijing: Jiefangjun chubanshe.

Mattingly, Daniel. forthcoming. "How the Party Commands the Gun: The Foreign-Domestic Threat Dilemma in China." *American Journal of Political Science* .

McMahon, R. Blake and Branislav L. Slantchev. 2015. "The Guardianship Dilemma: Regime Security Through and From the Armed Forces." *American Political Science Review* 109(2):297–313.

Meng, Anne. 2020. *Constraining Dictatorship: From Personalized Rule to Institutionalized Regimes*. New York: Cambridge University Press.

Meng, Anne and Jack Paine. 2022. "Power Sharing and Authoritarian Stability: How Rebel Regimes Solve the Guardianship Dilemma." *American Political Science Review* .

Meng, Anne, Jack Paine and Robert Powell. 2022. "Authoritarian Power Sharing: Concepts, Mechanisms, and Strategies." *Annual Review of Political Science* .

Nathan, Andrew J. 1973. "A Factionalism Model for CCP Politics." *The China Quarterly* 53:34–66.

Paine, Jack. 2021. "The Dictator's Power-Sharing Dilemma: Countering Dual Outsider Threats." *American Journal of Political Science* 65(2):510–527.

Paine, Jack. 2022. "Reframing the Guardianship Dilemma: How the Military's Dual Disloyalty Options Imperil Dictators.".

Roberts, Geoffrey. 2012. *Stalin's General: The Life of Georgy Zhukov*. New York: Random House.

Scharpf, Adam and Christian Gläßel. 2020. "Why Underachievers Dominate Secret Police Organizations: Evidence from Autocratic Argentina." *American Journal of Political Science* 64(4):791–806.

Shih, Victor. 2004. "Factions Matter: Personal Networks and the Distribution of Bank Loans in China." *Journal of Contemporary China* 13(38):3–19.

Shih, Victor. 2022. *Coalitions of the Weak: Elite Political Dynamics from the Late-Mao Period to the Xi Jinping Era*. New York: Cambridge University Press.

Shih, Victor C. 2008. *Factions and Finance in China: Elite Conflict and Inflation*. New York: Cambridge University Press.

Shih, Victor, Christopher Adolph and Mingxing Liu. 2012. "Getting Ahead in the Communist Party: Explaining the Advancement of Central Committee Members in China." *American Political Science Review* 106(1):166–187.

Singh, Naunihal. 2014. *Seizing Power: The Strategic Logic of Military Coups*. Baltimore: Johns Hopkins Univresity Press.

Svolik, Milan W. 2012. *The Politics of Authoritarian Rule*. New York: Cambridge University Press.

Talmadge, Caitlin. 2015. *The Dictator's Army: Battlefield Effectiveness in Authoritarian Regimes*. Cornell University Press.

Teiwes, Frederick C. and Warren Sun. 2014. *The End of the Maoist Era: Chinese Politics During the Twilight of the Cultural Revolution: Chinese Politics During the Twilight of the Cultural Revolution, 1972–1976*. New York: Routledge.

Thaler, Kai M. 2022. "Rebel Mobilization through Pandering: Insincere Leaders, Framing, and Exploitation of Popular Grievances." *Security Studies* 31(3):351–380.

Torigian, Joseph. 2022. *Prestige, Manipulation, and Coercion: Elite Power Struggles in the Soviet Union and China after Stalin and Mao*. New Haven: Yale University Press.

Truex, Rory. 2014. "The Returns to Office in a 'Rubber Stamp' Parliament." *American Political Science Review* 108(2):235–251.

Truex, Rory. 2016. *Making Autocracy Work: Representation and Responsiveness in Modern China*. New York: Cambridge University Press.

Wang, Jianying, ed. 2000. *Materials on CCP Organizational History [Zhongguo gongchandang zuzhi shi ziliao huibian]*. Beijing: Zhonggong zhongyang dangxiao chubanshe.

Weeks, Jessica. 2014. *Dictators at War and Peace*. Ithaca: Cornell University Press.

Wu, Guoguang. 2015. *China's Party Congress: Power, Legitimacy, and Institutional Manipulation*. Cambridge University Press.

Zakharov, Alexei V. 2016. "The loyalty-Competence Trade-Off in Dictatorships and Outside Options for Subordinates." *The Journal of Politics* 78(2):457–466.

Online Appendix

Table of Contents

A Descriptive Statistics

Table A1: Descriptive Statistics: Panel Dataset

Statistic	Mean	St. Dev.	Min	Max
Network Centrality: Degree	27.539	51.919	0	444
Central Committee: Full	0.579	0.494	0	1
Central Committee: Full (Civilian Only)	0.537	0.499	0.000	1.000
Standing Committee	0.023	0.149	0	1
Standing Committee (Civilians Only)	0.019	0.137	0.000	1.000
Politburo	0.072	0.259	0	1
Central Military Commission/Military Affairs Committee	0.058	0.233	0	1
Ordinal Promotion (1=Alternate, 2=Full, 3=Politburo)	1.654	0.613	1	3
Mao Era	0.216	0.411	0	1
Deng Era	0.196	0.397	0	1
Jiang Era	0.186	0.389	0	1
Hu Era	0.204	0.403	0	1
Xi Era	0.105	0.307	0	1
Ethnic Minority	0.096	0.294	0	1
College Graduate	0.008	0.087	0	1
Purged	0.014	0.119	0	1
Princeling	0.035	0.185	0	1
Network Centrality: Betweenness	1,893.514	5,182.237	0	46,342
Network Centrality: Authority	0.067	0.182	0	1

B People's Liberation Army Career Dataset

B.1 Coding Process

As discussed in the main text, the *People's Liberation Army Dataset* draws on two underlying sources of data. The first are a six-volume set of organizational histories 组织史) of the People's Liberation Army (PLA) from 1927 to 1992. An example page extracted from the PLA organizational histories detailing the senior leadership of the Northeastern Military Region from 1949 to 1955 is provided in Figure A1. The second are twenty-five annual volumes of the *Directory of PRC Military Personalities* from 1988 to 2014.[14] An example page extracted from the 2008 edition detailing the composition of the General Political Department is provided in Figure A2.

Figure A1: Example from PLA Organizational Histories

一、东北军区及其党委领导人名录

(一)东北军区领导人名录

中华人民共和国成立后，东北军区的主要领导人继续留任。1954 年 5 月，中共中央、中央军委决定，撤销高岗的东北军区司令员兼政治委员职务。早在同年 2 月，中央军委任命邓华为东北军区第一副司令员、代理司令员。1955 年 3 月，中共全国代表会议作出《关于高岗、饶漱石反党联盟的决议》，开除高岗的党籍，撤销其党内外一切职务。

司 令 员	高 岗(1949.10—1954.5)
代 司 令 员	邓 华(1954.2—1955.3)
政 治 委 员	高 岗(兼，1949.10—1954.5)
第一副司令员	邓 华(1954.2—1955.3)
副 司 令 员	贺晋年(1950.5—1954.8)
副 政 治 委 员	李富春(1949.10—1955.3)
	周 桓(1950.6—1955.3)
	张秀山(1950.9—1954.5)
	林 枫(1954.5—1955.4)

(二)东北军区党委领导人名录

1950 年 11 月，经总政治部批准，成立由 15 人组成的东北军区党委，未设常务委员会。

书 记	高 岗(1950.11—1952.10)
副 书 记	贺晋年(1950.11—1952.10)

1952 年 10 月，经总政治部批准，东北军区党委作了调整，党委委员 21 人，常务委员会由 7 人组成。此后，根据军区领导人的变动，军区党委成员相应作了增补。

书 记	高 岗(1952.10—1954.4)
副 书 记	周 桓(1952.10—1954.4)
常 委	(书记、副书记均为常委，从略)
	贺晋年(1952.10—1954.4)
	张秀山(1952.10—1954.4)
	莫文骅(1952.10—1954.4)

145

[14]Note that we were unable to obtain the 2012 edition of the *Directory of PRC Military Personalities*.

Figure A2: Example from *Directory of PRC Military Personalities*

GENERAL POLITICAL DEPARTMENT OF THE PEOPLE'S LIBERATION ARMY

Position	Rank	Name (Pin Yin)	Name STC	Name Chinese	Date Identified
DIR	GEN	LI JINAI	2621/4949/5082	李继耐 *	20040919
DDIR	GEN	LIU YONGZHI	0491/3057/3112	刘永治 *	20041217
DDIR	GEN	SUN ZHONGTONG	1327/1813/0681	孙忠同 **	20040713
DDIR	GEN, AF	LIU ZHENQI	0491/2182/6386	刘振起 **	20051125
DDIR	LGEN	JIA TINGAN	6328/1694/1344	贾廷安 **	20080114
ASST TO DIR	MGEN	DU JINCAI	2629/6855/2088	杜金才	20070630
ASST TO DIR	MGEN	XU YAOYUAN	6079/5069/0337	许耀元	20071026
SG		CHAI SHAOLIANG	2693/4801/5328	柴绍良	20080607
DSG		LI BIN(7)	2621/2430	李斌	20080829
DISCIPLINE INSPECTION DEPARTMENT					
DIR	MGEN	CAI JIHUA	5591/4949/5478	蔡继华	20080419
DIR, DI BUREAU		YIN QIU	1438/4428	尹秋	20050113
FOREIGN AFFAIRS BUREAU, GENERAL OFFICE					
DIR	SCOL	DONG JINRONG	PHONETIC	--	20000906
JUSTICE BUREAU (SIFA JU), GENERAL OFFICE					
DDIR		LIU ZHICHENG	0491/1807/2052	刘志成	20031012
MASS WORK BUREAU (QUNGONG JU), GENERAL OFFICE					
DIR	MGEN	CHANG SHENGRONG	1603/3932/2837	常生荣	20021031
CADRE DEPARTMENT (GANBU BU)					
DIR		ZHU FUXI	2612/4395/3556	朱福熙	20080424
DDIR		YU DAQING	0060/1129/3237	于大清	20071100
DDIR		ZHANG CHAOJIN	1728/6389/6855	张超金	20071204
DDIR		LIN XIANGHAI	2651/4382/3189	林祥海	20080429
DDIR, CADRE TRNG BUREAU		LI GUIJIN	2621/2710/6855	李桂金	20001204
DDIR, CADRE TRNG BUREAU	SCOL	SHANG CHUNMING	0794/2504/2494	商春明	20001218
DDIR, CADRE TRNG BUREAU	SCOL	ZHOU GUOPING(1)	0719/0948/1627	周国平	20031104
DDIR, MODERN DRAMA TROUPE	SCOL	MENG BING	1322/0393	孟冰	20020405
DIRECTLY SUBORDINATE ORGANS WORK DEPARTMENT (ZHISHU JIGUAN GONGZUO BU)					
DIR		WANG SENTAI	3769/2773/3141	王森泰	20070529
PC	MGEN	DONG JISHUN	5516/0679/7311	董吉顺	20070101
DDIR		KONG QINGXIN	1313/1987/2450	孔庆新	20031110

NOTE: GPD DDIR'S ARE LISTED IN OFFICIALLY PUBLISHED ORDER.

We followed a three-step process to extract the data needed to build our dataset from these materials. First, a team of research assistants used a combination of automated text recognition and manual coding to extract the Chinese name, English Name, organization, position, entry date, and exit date for each of the 41,603 military officers listed in these materials. The codebook for these variables is provided in Appendix §B.2 below. In total, our team coded 145,358 postings for each of these individuals.[15]

Second, we leveraged the historical narratives describing the evolution of the PLA organization within each history to create a standardized hierarchical nomenclature for all Chinese military units since 1927. Critically, we developed a standardized set of central military organizations, military regions, military districts, and field/group armies, such that each particular assignment could be matched across the sample. Officers at the top of the organizational hierarchy have "short" organizational affiliations. For example, all the organizational affiliation of officers assigned to the Nanjing Military Region headquarters is simply 南京军区. These organizational names become progressively longer as we move down the organizational hierarchy. For example, the organizational affiliation of an officer assigned to the Jiangsu Military District under the Nanjing Military Region is 南京军区, 江苏军区. Officers in subsidiary units below the level of detail discussed in the organizational histories are coded as "Other," but inside their respective parent organization.[16] For example, the organizational affiliation of an officer assigned to the Inspection Committee of the Jiangsu Military District in the Nanjing Military Region is 南京军区, 江苏军区, 其他. A second team of research assistants manually reviewed each extracted organizational affiliation to standardize it according to our nomenclature. In the case of assignments identified in the *Directory of PRC Military Personalities*, this required translation from English to Chinese to ensure consistency across the two sets of materials. The team followed a similar process to standardize the position that each individual held within the organization (e.g., commander (司令员), political commissar (政治委员), chief of Staff (参谋部长), minister (部长).

Third, given that we are interested in ties that form between civilian cadres and military officers over the course of their careers, we leveraged the PLA organizational histories to create an index identifying where each Military Region, Military District, and Group Army was headquartered.

B.2 Codebook

- `cname`: Chinese name of the PLA officer
- `ename`: English name of the PLA officer
- `organization`: name of the military unit in which the PLA officer served; organizations are organized hierarchically by military region (军区) and military district/sub-district (军分区); common organizations include:
  - Central Organizations
    - General Staff Department (总参谋部)

[15]Note that because listings in the *Directory of PRC Military Personalities* are arranged by year, military assignments are aggregated by individual and organization to recover the start and end date for each assignment.

[16]Note that because there are many disparate organizations under the "Other" category, individuals cannot build military ties in our dataset through co-appointment in the "Other" category.

    - General Armaments Department (总装备部)
    - General Logistics Department (总后勤部)
    - Beijing Garrison Command (北京卫戍区)
    - Second Artillery (Nuclear Force) (第二炮兵部队)
    - PLA Academy (解放军学院)
    - PLA Air Force (空军)
    - PLA Navy (海军)
    - Armed Police (武警)
- Military Regions
    - Beijing Military Region (北京军区)
    - Guangzhou Military Region (广州军区)
    - Shenyang Military Region (沈阳军区)
    - Chengdu Military Region (成都军区)
    - Lanzhou Military Region (兰州军区)
    - Ji'nan Military Region (济南军区)
    - And other historical Military Regions (non-exhaustive list)
- Military Districts
    - Xinjiang Military District (新疆军区)
    - Guangdong Military District (广东军区)
    - Yunnan Military District (云南军区)
    - Hubei Military District (湖北军区)
    - Tibet Military District (西藏军区)
    - Guangxi Military District (广西军区)
    - Heilongjiang Military District 黑龙江军区)
    - And other historical Military Districts (non-exhaustive list)
- Group Armies
    - 12th Group Army (第12集团军)
    - 14th Group Army (第14集团军)
    - 16th Group Army (第16集团军)
    - 20th Group Army (第20集团军)
    - 26th Group Army (第26集团军)
    - 39th Group Army (第39集团军)
    - 40th Group Army (第40集团军)
    - 41st Group Army (第41集团军)
    - 42nd Group Army (第42集团军)
    - 54th Group Army (第54集团军)
    - And other historical Group Armies (non-exhaustive list)

- `position`: position that the individual held within the PLA organization; common position titles include:
  - Commander (司令员)
  - Deputy Commander (副司令员)
  - Political Commissar (政治委员)
  - Deputy Political Commissar (副政治委员)
  - Secretary (书记)
  - Vice Secretary (副书记)
  - Chief of Staff (参谋部长)
  - Minister (部长)
  - Vice Minister (副部长)
  - Army Commander (军长)
  - Deputy Army Commander (副军长)
  - Group Army Commander (团长)
  - Division Commander (师长)
- `entry` year the individual entered the position
- `exit`: year the individual exited the position

C Alternative Measurement Strategies

Table A2: Alternate outcome measure: Ordinal measure of promotion.

	Dependent variable:					
	Promotion (1=Alternate CC, 2=Full CC, 3=Politburo))					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Centrality in Military Networks	0.169***	0.157***	0.175***	0.164***	0.227***	0.194***
	(0.027)	(0.026)	(0.031)	(0.031)	(0.034)	(0.036)
Civilian Network Centrality Score		0.081***		0.058**		0.044
		(0.021)		(0.027)		(0.032)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	1857	1857	1503	1503	453	453
Observations	3,564	3,564	2,294	2,294	1,765	1,765
R^2	0.391	0.416	0.452	0.483	0.510	0.529

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

C.1 Alternative Measurement Strategies: Panel of Prefecture-level Leaders

Table A3: Alternate measure of network centrality: Kleinberg's authority centrality scores. Dataset on city leaders. Outcome is promotion to the Central Committee.

	Dependent variable:					
	Promotion to Central Committee (Full or Alternate Member)					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Network Centrality: Authority	0.015***	0.013***	0.016***	0.015***	0.014***	0.013***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	3795	3795	3795	3795	3795	3795
Observations	7,347	5,969	6,400	5,199	5,279	4,781
R^2	0.074	0.113	0.071	0.115	0.073	0.118
Adjusted R^2	−0.920	−0.814	−0.926	−0.810	−0.994	−0.859

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A4: Alternate measure of network centrality: Eigenvector scores (page rank). Dataset on city leaders. Outcome is promotion to the Full Central Committee and Network Ties to Military Officers.

	Dependent variable:					
	Promotion to Central Committee (Full or Alternate Member)					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Network Centrality: Eigenvector	3.627**	3.948**	3.483**	4.065**	14.634***	13.440***
	(1.494)	(1.740)	(1.494)	(1.740)	(1.494)	(1.740)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	3795	3795	3795	3795	3795	3795
Observations	7,347	5,969	6,400	5,199	5,279	4,781
R^2	0.069	0.109	0.063	0.109	0.080	0.125
Adjusted R^2	−0.931	−0.822	−0.942	−0.821	−0.978	−0.845

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

C.2 Alternative Measurement Strategies: Panel of Central Committee Members

Table A5: Alternate measure of network centrality: Eigenvector scores (page rank). Dataset of full and alternate CC members. Outcome is promotion to the Full Central Committee.

	Dependent variable:					
	Promotion to Central Committee (Full Member)					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Military Centrality: Eigenvector	0.142***	0.145***	0.151***	0.161***	0.221***	0.224***
	(0.018)	(0.018)	(0.020)	(0.021)	(0.027)	(0.027)
Civilian Network Centrality		0.009		0.025		−0.022
		(0.015)		(0.017)		(0.028)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	1857	1857	1503	1503	859	859
Observations	3,564	3,564	2,808	2,808	1,470	1,470
R^2	0.340	0.373	0.364	0.399	0.472	0.491
Adjusted R^2	−0.387	−0.356	−0.379	−0.352	−0.280	−0.275

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A6: Alternate measure of network centrality: Kleinberg's authority centrality scores . Dataset of full and alternate CC members. Outcome is promotion to the Full Central Committee.

	Dependent variable:					
	Promotion to the Central Committee:					
	All		Civilians			
	(1)	(2)	(3)	(4)	(5)	(6)
Military Network Centrality: Authority	0.072***	0.062***	0.070***	0.055**	0.048	0.042
	(0.019)	(0.019)	(0.025)	(0.026)	(0.043)	(0.048)
Civilian Network Centrality		0.014		0.032*		−0.003
		(0.015)		(0.017)		(0.028)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	1857	1857	1503	1503	859	859
Observations	3,564	3,564	2,808	2,808	1,470	1,470
R^2	0.313	0.348	0.330	0.366	0.401	0.427
Adjusted R^2	−0.443	−0.409	−0.454	−0.428	−0.452	−0.437

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A7: Promotion to the Central Committee and Network Ties to Military Officers.

	Dependent variable:			
	Promoted to Standing Committee: Civilians			
	(1)	(2)	(3)	(4)
Military Network Eigenvector Centrality	0.002	−0.025**	−0.009	−0.038***
	(0.010)	(0.011)	(0.011)	(0.013)
Outside Leader's Network	−0.001	0.027	0.019	0.042**
	(0.018)	(0.018)	(0.023)	(0.021)
Civilian Network Centrality		0.055***		0.050***
		(0.015)		(0.017)
Mil. Eigenvector x Outside Leader Network	−0.042**	−0.036**	−0.044**	−0.028*
	(0.017)	(0.016)	(0.018)	(0.015)
Individual fixed effects	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓
Controls		✓		✓
Clusters	1503	1503	859	859
Observations	2,805	2,805	1,470	1,470
R^2	0.088	0.226	0.119	0.307
Adjusted R^2	−0.982	−0.745	−1.144	−0.744

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A8: Alternate outcome (ordinal measure) and alternate measure of network centrality: Eigenvector scores (page rank). Dataset of full and alternate CC members. Outcome is promotion to the Full Central Committee.

	Dependent variable:					
	Ordinal Promotion Measure: All					
	(1)	(2)	(3)	(4)	(5)	(6)
Military Network Centrality: Eigenvector	0.134***	0.114***	0.152***	0.129***	0.208***	0.184***
	(0.023)	(0.023)	(0.026)	(0.026)	(0.027)	(0.029)
Civilian Network Centrality		0.067***		0.058**		0.032
		(0.021)		(0.027)		(0.032)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	1857	1857	1503	1503	859	859
Observations	3,564	3,564	2,294	2,294	1,765	1,765
R^2	0.389	0.435	0.455	0.497	0.518	0.537
Adjusted R^2	−0.283	−0.223	−0.157	−0.114	−0.166	−0.151

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

D Alternative Models

Table A9: Alternate model: Random effects. Panel of city-level leaders. Outcome is promotion to the Central Committee.

	Dependent variable:					
	Promotion to Central Committee (Full or Alternate Member)					
	All		Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)	(5)	(6)
Network Centrality: Degree	0.088***	0.091***	0.084***	0.085***	0.088***	0.083***
	(0.026)	(0.028)	(0.026)	(0.028)	(0.026)	(0.028)
Random effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	3795	3795	3795	3795	3795	3795
Observations	7,347	5,969	6,400	5,199	5,279	4,781
R^2	0.017	0.044	0.012	0.044	0.018	0.047
Adjusted R^2	0.015	0.041	0.010	0.041	0.017	0.045

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A10: Alternative model: random effects. Promotion to the Central Committee and Network Ties to Military Officers.

	Dependent variable:					
	Promoted to Central Committee:					
	All		Civilians			
	(1)	(2)	(3)	(4)	(5)	(6)
Military Network Degree Centrality	0.180***	0.166***	0.225***	0.163***	0.279***	0.221***
	(0.010)	(0.010)	(0.013)	(0.014)	(0.019)	(0.021)
Civilian Network Degree Centrality		0.141***		0.157***		0.178***
		(0.008)		(0.010)		(0.013)
Individual fixed effects	✓	✓	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓
Clusters	1857	1857	1503	1503	859	859
Observations	3,564	3,564	2,808	2,808	1,470	1,470
R^2	0.092	0.158	0.100	0.172	0.143	0.235
Adjusted R^2	0.089	0.155	0.097	0.168	0.140	0.231

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A11: Alternative model: random effects. Promotion to the Central Committee and Network Ties to Military Officers.

	Dependent variable:			
	Promoted to Standing Committee: Civilians			
	(1)	(2)	(3)	(4)
Military Network Degree Centrality	0.050^{***}	0.043^{***}	0.055^{***}	0.036^{***}
	(0.009)	(0.009)	(0.012)	(0.011)
Outside Leader's Network	-0.055^{***}	-0.004	-0.056^{***}	-0.005
	(0.008)	(0.007)	(0.010)	(0.009)
Civilian Network Degree Centrality		0.039^{***}		0.040^{***}
		(0.007)		(0.007)
Mil. Degree x Outside Leader Network	-0.042^{***}	-0.043^{***}	-0.046^{***}	-0.037^{***}
	(0.009)	(0.009)	(0.011)	(0.011)
Individual fixed effects	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓
Controls		✓		✓
Clusters	1503	1503	859	859
Observations	2,805	2,805	1,470	1,470
R^2	0.056	0.089	0.051	0.102
Adjusted R^2	0.052	0.087	0.046	0.098

Note: Robust standard errors are clustered by individual. *p<0.1; **p<0.05; ***p<0.01

Table A12: Promotion to the Politburo and Network Ties to Military Officers.

	Dependent variable:			
	Promotion to the Politburo Standing Committee			
	All Civilians		Civilians Post-1989	
	(1)	(2)	(3)	(4)
Military Network Degree Centrality	0.039*	−0.008	0.063**	0.010
	(0.022)	(0.023)	(0.027)	(0.028)
Outside Leader's Network	−0.006	0.030	−0.026	−0.005
	(0.024)	(0.023)	(0.035)	(0.032)
Civilian Network Degree Centrality		0.063***		0.043*
		(0.016)		(0.022)
Mil. Degree x Outside Leader Network	−0.025	−0.012	−0.078**	−0.042
	(0.027)	(0.025)	(0.039)	(0.037)
Individual fixed effects	✓	✓	✓	✓
Time period fixed effects	✓	✓	✓	✓
Controls		✓		✓
Clusters	1503	1503	859	859
Observations	2,805	2,805	1,470	1,470
R^2	0.132	0.247	0.181	0.331

Note: Robust standard errors are clustered by individual. Controls are for provincial secretary, provincial governor, ethnic minority, princeling, and education.*p<0.1; **p<0.05; ***p<0.01

E Sensitivity Analysis

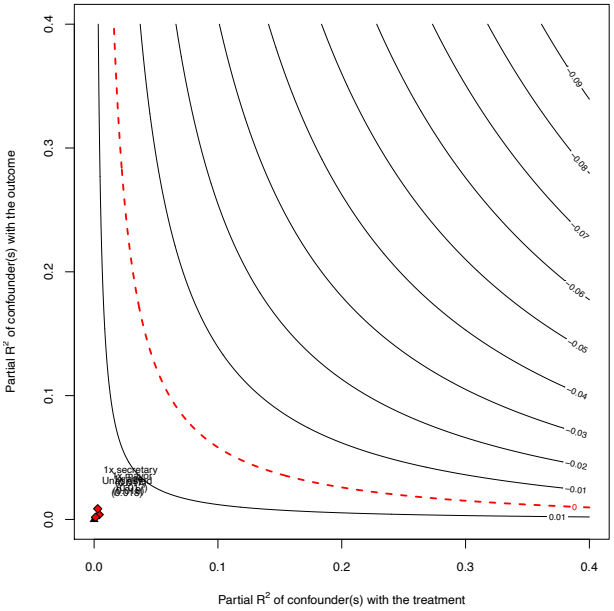


Figure A3: Sensitivity analysis the Standing Committee promotion results of the prefecture-level leaders, following procedure outline by Cinelli and Hazlett (2020). The figure shows the degree to which confounders would need to be correlated with the explanatory variable (degree centrality) and outcome (promotion to the Central Committee) in order to break the results. Three benchmark covariates are shown in red: being a prefectural governor or party secretary and age. The Figure show that to change the estimate from positive to negative, a confounder would need to be much more correlated with promotion and the outcome than serving as a governor or secretary or age. A confounder with partial R-squared of about 0.1 for both the outcome and explanatory variable would change the sign of the results, which is much more than the R-squared for any other variable in the model.

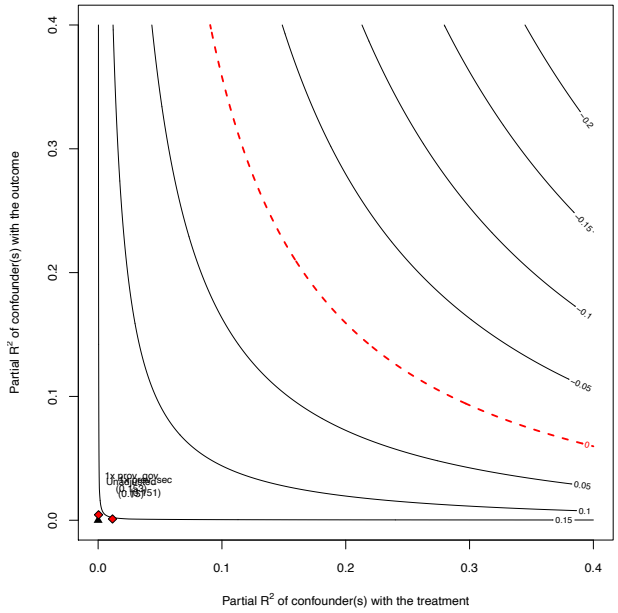


Figure A4: Sensitivity analysis the Central Committee promotion results following procedure outline by Cinelli and Hazlett (2020). The figure shows the degree to which confounders would need to be correlated with the explanatory variable (degree centrality) and outcome (promotion to the Central Committee) in order to break the results. Two benchmark covariates are shown in red: being a provincial governor or party secretary. The Figure show that to change the estimate from positive to negative, a confounder would need to be much more correlated with promotion and the outcome than serving as a governor or secretary. A confounder with need to have a partial R-squared of more than 0.2 for both the outcome and explanatory variable to switch the sign of the results, a robust result.