

THE UNIVERSITY OF CHICAGO

**“Loyalty-Competence Tradeoff 2.0”: The Recruitment of “Weak
Experts” as the Source of Authoritarian Performance and
Resilience**

By

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Abstract

This thesis has given the classic political science/economy concept, “loyalty-competence tradeoff,” a 2.0 patch by observing the elite recruitment in China’s provincial leadership under President Xi Jinping. This thesis introduces the concept of “Weak Experts” officials, those with solid professional expertise but weak political networks with former top leaderships, and employs both Ordinary Least Squares and the Fixed Effects models to examine the impact of “weak expert” officials on provincial development and loyalty to Xi Jinping, this thesis argues that weak experts are more effective in advancing China’s state developmental agenda, as evidenced by an increase in high-tech patents and greater efficiency in the use of government funding. Simultaneously, these officials exhibit greater loyalty to President Xi Jinping, reflected in the more extolment phrases to Xi’s ideological campaign and rhetorical alignment with the central agenda. The thesis contributes to the broader literature on authoritarian performance and resilience, suggesting that the strategic appointment of “weak experts” enables dictators to enhance governance outcomes while not at the expense of political survival.

Key Words: Loyalty-Competence Tradeoff; Weak Expert; Elite Recruitment; China; Xi Jinping; Patron-Client Networks; Technocracy; Ideological Campaign; Authoritarian Resilience

The data and code required to replicate all analyses in this article are available on my GitHub, at: <https://github.com/guanhongliu2000/Guanhong-Thesis-UChicago/tree/main>

Abbreviations:

Bidirectional Encoder Representations from Transformers (BERT)

Central Leading Small Group (CLSG)

Chinese Communist Party (CCP)

Chinese Communist Party Central Committee (CCPCC)

China High-tech Industry Statistical Yearbook (CHISY)

China National Knowledge Infrastructure (CNKI)

Foreign Direct Investment (FDI)

Government Guidance Fund (GGF)

Government Work Report (GWR)

Gross Domestic Product (GDP)

Innovation-Driven Development Strategy (IDDS)

Natural Language Processing (NLP)

Ordinary Least Squared (OLS)

Regional Statistical Yearbook (RSY)

Science and Technology Self-sufficiency and Self-reliance (STSS)

Science, Technology, Engineering and Mathematics (STEM)

Sentence Bidirectional Encoder Representations from Transformers (SBERT)

State-owned Enterprise (SOE)

Term Frequency-Inverse Document Frequency (TF-IDF)

Upper-echelon Strategist (UES)

Table of Contents

<i>Introduction:</i>	1
<i>Literature Review:</i>	5
<i>Empirical Design:</i>	14
<i>Empirical Results:</i>	28
<i>Conclusion:</i>	32
<i>References:</i>	35

“Our party cadres must be both politically loyal and professionally specialized. Political loyalty is the premise of the specialization of the cadre team, and specialization is the inherent requirement of political loyalty.”

— Xi Jinping, the General Secretary of the Chinese Communist Party (Xinhua News Agency, 2017)

Introduction:

Though dictators in undemocratic regimes are often portrayed as omnipotent, they cannot govern vast territories and large populations on their own. They must organize a ruling coalition of trusted subordinates to perform essential functions to both secure power and provide public services (Acemoglu, Egorov, and Sonin, 2008). Thus, in the labyrinth of undemocratic regimes, dictators’ decisions regarding subordinate recruitment into their ruling coalition will significantly influence the regime’s stability and governance outcomes. Ideally, competent subordinates will be preferred in dictatorships because they can provide better services that will contribute to the weak legitimacy (McGuire and Olson, 1996). However, the absence of democratic checks and balances in undemocratic regimes allows autocrats substantial freedom in elite appointments, while also directly exposing them to the risks of coups and elite betrayals (Acemoglu, Verdier and Robinson, 2004; Acemoglu and Robinson, 2006).

Indeed, political scientists and economists have extensively argued that dictators usually prefer incompetent loyalists over competent subordinates who are potentially less loyal to ensure political survival (Wagner, 2011; Reuter and Buckley, 2012; Shih, 2022). While some instances show dictators appointing competent officials to tackle complex issues, these appointments were

typically followed by a systematic purge once the challenges were addressed (Kotkin, 2014), and effective governance would thus be disrupted (Fitzpatrick, 1999). This preference for loyalty over competence is termed the “loyalty-competence tradeoff” (Zakharov, 2016; Bai and Zhou, 2019). This theoretical framework can explain why most personalized dictatorships are inclined to exhibit strikingly poor governance and economic poverty (Bueno et al., 2003). However, China in the post-Mao era is presenting a counterexample, characterized by significant economic success and improved governance, despite its highly authoritarian nature. According to the existing literature (Nathan, 2003; Bai and Zhou, 2019), there appear to be two justifications for post-Mao China’s exemption from the loyalty-competence tradeoff. First, institutionalization, which includes norm-based peaceful power transitions, merit-based official appointments, separation of party and state powers, and enhanced public participation, makes China deviate from the weak institutionalization nature of conventional dictatorships. Second, for autocrats of the Chinese Communist Party (CCP), the payoff of recruiting competent officials is still higher than purging them.

However, since Xi Jinping’s rise to power in 2013, China has been enduring a revival of Maoist traditions that stress pro-claimed ideology, party dominance, and personality cults (Hua, 2020). Specifically, Xi Jinping orchestrated a constitutional amendment in 2018 to “legitimize” his tenure for life (Ibid) and adopted a comprehensive approach to “social governance” that has significantly restricted civil society and private sectors (Cabestan, 2020). Also, Xi Jinping’s anti-corruption campaign has been strategically employed to suppress state officials and ensure their compliance (Qian and Tang, 2023). The notable decline in institutionalization under Xi Jinping compared to his predecessors, indicates that the loyalty-competence tradeoff strategies would be prevalent during his tenure. At the same time, the developmental tragedy inherited from the Mao era and the challenges posed by the 1989 Tiananmen crisis were largely resolved (Nathan, 2003;

Zhang and Chen, 2017) before Xi Jinping assumed the leadership, theoretically setting the stage for the routine replacement of competent officials with mediocre but loyal ones as the payoff of keeping the competent diminished. Nonetheless, this expected turnover has not occurred. Instead, officials who have longer experience in local governments, core functional departments, or solid technological backgrounds are increasingly favored by Xi Jinping (Huang, 2022; Jiang, Eaton, and Kostka, 2023). Plus, China under Xi Jinping is performing not badly, characterized by its striving for global leadership in many aspects such as strategic technology (Cheung, 2022). This emphasis on competence during Xi's terms offers a critical opportunity to reassess the loyalty-competence tradeoff models in dictatorships.

This thesis is dedicated to exploring how certain undemocratic regimes can transcend the loyalty-competence tradeoff, achieving remarkable state performance without compromising the monopoly on power. Observing China in the Xi Jinping era, this thesis hypothesizes that the CCP regime has mastered the quasi-perfect balance between loyalty and performance in hiring allies for the ruling coalition, particularly those provincial officials who are primarily responsible for implementing economic and reform agendas. Overcoming the black box problem of authoritarian politics, this thesis constructs a new biographical panel dataset for provincial administrations in China from 2013 to 2022. It also employs innovative methods to assess competence and loyalty. Analyzing this dataset with both Ordinary Least Squared (OLS) and the fixed effects models, this thesis contends that technocrats who are politically “weak”, typically who are not affiliated with factions of the previous leaderships (Jiang Zemin or Hu Jintao), are more popular with Xi Jinping. These unaffiliated technocrats, labeled “weak experts” in this thesis, can be empirically proven more effective in advancing the top state developmental agenda and more loyal to the incumbent paramount leader, Xi Jinping. Inductively, this thesis gives the classic political science/economy

concept, “loyalty-competence”, a 2.0 patch. The revised framework suggests that dictatorships can simultaneously ensure regime performance and survival by recruiting subordinates who possess extensive professional knowledge but limited political affiliations, termed “weak experts”, for the ruling coalitions. The strategy of appointing “weak experts” represents a quasi-perfectly balanced fusion of competence and loyalty when autocrats consider forming a ruling coalition.

Literature Review:

Fragility of Dictatorships. Dictatorship is a type of polity where power is centralized in the hands of an individual autocrat or a select group of elites, with minimal and even no checks on their authority (Ezrow and Frantz, 2011). Although there are nuanced differences, authoritarian and totalitarian regimes are often categorized together under the broader term “dictatorship”, as both governances are undemocratic and oppressive (Tucker, 1965; Sondrol, 1991). It should be noted that some dictatorships could be rather resilient. Acemoglu and Robinson (2004) examine the rule of Mobutu Sese Seko in the Democratic Republic of the Congo and Rafael Trujillo in the Dominican Republic with a particular emphasis on the “divide-and-rule” strategy, which involves bribing key political groups with resources derived from taxation, natural resource exploitations, and foreign aids to prevent their collaboration in any attempt to overthrow the autocrats. Plus, by studying Politburo members of the Soviet Union from 1919 to 1952, Acemoglu, Verdier, and Robinson (2008) contend that the Soviet autocrats were aware of the necessity of possessing enough “self-enforcing” power to prevent any sub-coalition from removing any of the incumbent members in the ruling coalition. In addition, Boix and Svobik (2013) propose that the longevity of autocratic regimes, like the Institutional Revolutionary Party in Mexico, which had maintained power for over 70 years, can be attributed to the establishment of institutions like legislatures and advisory councils. These institutions can enhance transparency in power-sharing negotiations and promote a relatively fair distribution of benefits among elites, thereby minimizing the motivation of rebellions. However, despite the seeming efficacy of autocratic strategies in curbing internal elite betrayals, all the studies mentioned above must concede that even a minor change in power distribution, or the inclusion or exclusion of a single member, can destabilize the ruling coalition of dictatorships. Dictators also face the dilemma that they always remain uninformed about their

ruling allies' loyalty until there are attempts to depose them from power (Wintrobe, 1998; Iqbal and Zorn, 2006). In sum, dictatorships are inherently fragile because they are perpetually at risk of coups.

The Loyalty-competence Tradeoff Models. The loyalty-competence tradeoff is a survival strategy employed by autocrats by prioritizing loyalty over competence in official appointments, despite the fact that more skilled subordinates are more effective in enforcing political repression and driving economic prosperity that can win wide public support (Wagner, 2006; Zakharov, 2016). Drawing on a variety of empirical and game-theoretic models, scholars offer diverse explanations for why less competent ruling allies are favored by autocrats: Glazer (2002) suggests that while high-quality subordinates can generate higher profits, they also pose higher risks due to potential rent-seeking behaviors, including accruing excessive power that could threaten the autocrat in the political context. Egorov and Sonin (2011) highlight that competent officials, while more capable of defusing conspiracies, also possess the capability to organize successful coups. In competitive authoritarian states, where semi-competitive electoral institutions exist, the need to win elections prompts autocrats to appoint loyalists who can ensure electoral success, thus sidelining the skilled (Reuter and Robertson, 2012; Buckley and Reuter, 2019). Moreover, competent bureaucrats are more susceptible to opposition bribes for their professional reputation (Demers, 2004). Conversely, less competent protégés usually display greater loyalty and a stronger willingness to undertake unsavory tasks for dictators, primarily because of their unpromising advancement opportunities outside the current faction (Scharpf and Gläsel, 2020). Similarly, Debs (2007) explores a scenario where a dictator might purge competent protégés to prevent them from becoming a more appealing alternative to the public. The preference for loyalty over competence in ally recruitment will cause economic mismanagement, bureaucratic inefficiency, corruption, or other governance disasters,

but it will also perpetuate the autocratic status quo (Bueno et al., 2003; Acemoglu, Verdier, and Robinson, 2004).

Some instances indicate a preference for competence over loyalty in dictatorships, with autocrats willing to share power with competent elites under certain circumstances. According to Ezrow and Frantz (2011), dictators are more likely to appoint competent military subordinates to ensure effective suppression when facing significant external threats. Nonetheless, coup-proofing strategies will become more crucial as dictators' reliance on the military increases (Powell, 2012). These strategies involve strategically placing loyal family members, ethnic, and religious groups within the military, establishing parallel armed forces, and creating multiple overlapping internal and secret security agencies, all aimed at mitigating the risk of military coups (Quinlivan, 1999). Nevertheless, coup-proofing strategies will lead to military inefficiency (Sudduth, 2017). Further, Paine (2019) differentiates external threats into revolutionary and non-revolutionary, pointing out that the non-revolutionary threats do not provoke the loyalty-efficiency dilemma, as the personalist militaries, who are loyal but less efficient, are enough to address them. As for the revolutionary threats, autocrats will eventually opt for personalist militaries because professional militaries may resist repression due to broader societal connections.

The prevalence of technocracy in autocracies is also notable. Putnam (1977) and Centeno (1993) discuss how technocrats, who had solid engineering or technical backgrounds, were hired by Soviet autocrats to improve governance efficiency and legitimacy by making tangible successes like large-scale infrastructure constructions and rapid industrialization. Putnam also notices that technocracy will lead to less participatory governance, with decisions primarily made by internal experts rather than through democratic deliberation, reinforcing the autocrats' power monopoly. Bailes (1974) examines the historical event of the "Industrial Party Trial of 1930," arguing that the

trial and systematic purge of Soviet technocrats was politically motivated to suppress their growing influence and autonomy, as their advocacy for policies based on scientific expertise posed a threat to Stalin's authority. While Soviet dictators had indeed appointed competent technocrats to address complex issues, these technocrats would be systemically purged once urgent issues were resolved, and effective governance was therefore disrupted (Fitzpatrick, 1999; Kotkin, 2014). Similarly, by studying Mao's China, Bai and Zhou (2019) propose that autocrats will select more competent subordinates when the payoff is high, such as during civil wars or economic crises, and massively fire them once stability is restored and the economic situation improves, and then fill the power vacuum with loyal mediocrities who cannot sustain effective governance. Hence, it is clear that though competent subordinates are occasionally appreciated by autocrats, the loyalty-competence tradeoff strategies will ultimately be endorsed, making the inability of dictatorships to consistently provide effective governance.

Post-Mao China as the Outlier. As loyalty-competence tradeoff models predict, during the Mao era in China (1949-1976), mediocre loyalists were particularly favored over experienced cadres (Bai and Zhou, 2019; Shih, 2022). Indeed, China endured extreme poverty and famine amid unceasing radical political campaigns and policy disasters during this period (Yang, 1996; Teiwes and Sun, 1999; Dikötter, 2016). However, it appears that loyalty-competence tradeoff models fall short of explaining the successful transformation in post-Mao China. Following Mao's death, the new CCP leadership soon embarked on economic liberalization reforms, transitioning China from a planned economy to a market-oriented one (Naughton, 1995). China's reform has been proven successful, as evidenced by the average annual Gross Domestic Product (GDP) per capita growth rate of 10% from 1978 to 2010, with the GDP per capita in 2010 having been 15 times that of 1978 (Naughton, 2018).

Modernization theory suggests that economic development in dictatorships will catalyze political democratization as it will foster a wealthy, politically active middle class with stronger democratic aspirations (Lipset, 1959; Przeworski and Limongi, 1997; Boix and Stokes, 2003; Lee, 2018). Also, Kuru (2019) claims that the burgeoning intellectual and merchant classes will seek to ally with enlightened ruling elites to challenge the autocracy, which is categorized as an obstacle to further development. South Korea and Taiwan are perfect examples of how autocratic regimes collapsed under rapid economic development (Jelonek and Zieliński, 2008). This claim aligns with what the loyalty-competence tradeoff models will predict. Strikingly, unlike in post-communist countries in East Europe or developmental states in East Asia, economic liberalization in post-Mao China did not generate any regime change (Shirk, 1993; Fewsmith, 2001; Chu and Huang, 2010). Instead, the CCP regime has been growingly resilient and powerful (Nathan, 2003; Ang, 2022), displaying a unique trajectory in the interplay between economic prosperity and political survival in autocracies.

The phenomenon where rapid economic growth coexists with enduring autocratic rule in China can be explained by the concepts of “institutionalization” and “performance legitimacy.” Institutionalization was originally defined by Huntington (1968) as the adaptability, complexity, autonomy, and coherence of autocratic states through the creation of formal and informal rules to rationalize state behaviors. Specifically, in the post-Mao China context, it involves establishing mechanisms such as peaceful power transitions, merit-based official appointments and enhanced public participation (Nathan, 2003). The institutionalization has not only reduced the likelihood of vicious intra-party power struggles (Lee, 2010) but allowed for greater state flexibility (Mertha, 2009) and responsiveness (Tsang, 2009; Ergenc, 2014; Truex, 2016), hence contributing to more effective governance.

On the other hand, the performance legitimacy follows a Weberian approach, suggesting that autocracies can secure their legitimacy and endurance by promoting economic development and providing better public services (Lipset, 1959). Typically, the economic takeoff in post-Mao China is rooted in its overhaul of the governance structure, which significantly improved apparatus efficiency and accountability that enabled the state to adapt more flexibly to the new dynamics of the market economy (Lieberthal and Lampton, 1992; Yang, 2004; Gallagher, 2005; Huang, 2008; Ang, 2016). The economic success in post-Mao China, driven by its viable governance institutions, has thus diminished the prominence of communist ideology across the society (Peter, 2015). It also makes the Chinese state resourceful enough to mollify public grievances (Lau, Qian, and Roland, 2000; Rithmire, 2015; Heurlin, 2017; Yang, 2018).

Regardless of whether the theories of institutionalization or performance legitimacy offer the best explanation for China's successful transition without regime change, it is clear that the remarkable successes of the reform could not be achieved by the mediocre officials. Indeed, the economic reforms began with a comprehensive removal of Mao-era elites, who were loyal but incompetent, paving the way for younger, better-educated, and more pro-development officials in both civilian and military sectors (Chen et al., 2024). Moreover, extensive scholarship has shown that despite the inherent patron-client networks in China's political culture, meritocratic factors such as education, the capacity to accelerate GDP growth, enrichment of the treasury, emergency management, and moral integrity play significant roles in official selections and promotions (Li and Zhou, 2005; Liu, 2013; Lü and Landry, 2014; Bell, 2015; Li and Gore, 2017). This contradicts what traditional loyalty-competence tradeoff models predict. There are two possible explanations for this discrepancy. First, post-Mao China has introduced a range of liberalization measures, and it is gradually institutionalizing (Nathan, 2003) and even democratizing (Rowen, 2007), suggesting

that the autocratic basis for the loyalty-competence tradeoff is diminishing. Second, according to the models constructed by Bai and Zhou (2019), the high payoff from selecting competent cadres was crucial for rescuing China from its political and economic predicaments. Thus, as the economy progresses and sociopolitical stability is restored, CCP autocrats will be likely to increasingly favor mediocre loyalists.

China in the Xi era. The new dynamics of China in the Xi era (2013-present) provide a compelling refutation of the two possible justifications for traditional loyalty-competence tradeoff models. Since Xi Jinping officially became CCP's general secretary and China's president in 2013, there has been a notable retreat from institutionalization. To be specific, Xi Jinping has rekindled Maoist totalitarian traditions like ideological fervor, party dominance, and personality cults (Hua, 2020). In addition, Xi Jinping has dismantled the institution of limited terms through legislative manipulation (Ibid) and forcefully suppressed civil society (Cabestan, 2020). Moreover, Xi Jinping has curtailed the autonomy of local governments in addition to central bureaucracies by initiating large-scale, central-led economic projects (Naughton and Tsai, 2015), establishing many Central Leading Small Groups (CLSG) under his direct supervision (Tsai and Zhou, 2019), and enforcing widespread coercive anti-corruption campaigns (Jaros and Tan, 2019). Simultaneously, the payoff for appointing competent subordinates seems to have diminished before Xi Jinping's term because earlier presidents had successfully alleviated political turmoil and spurred economic development. Especially following Deng's 1992 southern tour after the 1989 Tiananmen crisis, the CCP regime quickly stabilized inflation, reignited economic growth, enhanced foreign direct investment (FDI) attractive force, expanded international trade, normalized diplomatic relations with G-7 countries that had imposed sanctions, took over Hong Kong's sovereignty, won the right to host the Olympic Games, and effectively suppressed political dissidents at home (Nathan, 2003). By the time Xi

Jinping assumed power in 2013, China had already become the world's second-largest economy and heading toward the largest (Zhang and Chen, 2017).

Despite these circumstances suggesting a diminishing payoff from appointing competent officials, the Xi administration did not see a replacement of competent bureaucrats with merely loyal and mediocre protégés. Instead, research by Jiang, Eaton, and Kostka (2023) indicates that local officials with longer experience in key functional departments such as the Development and Reform Commissions were more likely to be promoted to major prefectural leadership positions than during the Hu Jintao era (2003-2012). Huang (2022) also found that longer local governance experience increased the likelihood of joining the Politburo under Xi Jinping. Moreover, Xi has re-emphasized the role of technocracy, a trend sidelined during the Hu-Wen administration, as evidenced by the increasing presence of technocrats in the CCP Central Committee (CCPCC) and their rising promotion from non-governmental institutions such as state-owned enterprises (SOEs) to top provincial leadership positions (Chen, 2020; Huang and Henderson, 2022; Li, 2022; Huang and Cortese, 2023). In sum, the Xi era's preference for competent officials offers a valuable case study for reevaluating the traditional loyalty-competence tradeoff models.

Loyalty-Competence Tradeoff 2.0 and the “Weak Experts.” In the *Rise of Red Engineers*, Andreas (2009) claims that the formation of the technocrat stratum in post-Mao China came from the integration of revolutionary and cultural elites. The former aims to reproduce the advantageous status by using their political capital to leverage the support of cultural elites. The latter wants to secure their elite standing by seeking political influence. Shih (2022), in his *Coalition of the Weak*, describes how Mao purged his experienced revolutionary comrades and instead recruited political laymen into his ruling coalition. In this case, Mao maintained absolute authority as these political novices could not find other revolutionary strongmen to work with. Shih's observations reveal that

autocrats can ensure loyalty, or at least non-resistance, from politically weak individuals—those who lack affiliation with any factions and hence must be highly accountable to the source of power. Integrating the two frameworks, this thesis hypothesizes that dictators can channel their political capital toward candidates with solid expertise, integrating political and cultural capital to enhance political power without compromising governance capacity. In other words, autocrats can possibly bypass the loyalty-competence tradeoffs by recruiting subordinates who possess rich professional knowledge but poor political accumulation.

Empirical Design:

Hypotheses. As discussed earlier, this thesis hypothesizes that Xi Jinping has circumvented the loyalty-competence tradeoff by selecting cadres who have extensive professional expertise but limited political affiliations. This thesis refers to such subordinates as “weak experts”. In essence, this study aims to test:

H1: The “weak expert” officials are more effective in advancing the development agenda.

H2: The “weak expert” officials are more loyal to Xi Jinping.

Provincial Weak Experts (Independent Variable). To test the two hypotheses, this thesis will compile a new panel dataset to empirically analyze the interactions between Xi and provincial leaders (secretaries and governors). Typically, the biographical information of provincial officials will be sourced from the Database of Local Party and Government Leaders (n.d.). Xi was elected President of China and General Secretary of the CCP in November 2012, officially commencing his first term in 2013, followed by his second term starting in 2019, and his third term in 2023. Considering that much of the post-2023 data remains un-updated, this thesis will concentrate solely on the periods from 2013 to 2022. While most existing research on Chinese local officials usually encompasses the municipal level (Jiang, 2018; Jiang, Eaton, and Kostka, 2023), this thesis will only shed light on provincial leadership due to time and manpower constraints. It should be noted that provinces in China are the principal vehicles for national reforms and provincial officials are key agents in executing national reform agendas (Goodman, 1997), so exploiting provincial data can provide equally compelling and insightful results.

As discussed, an official qualifies as a “weak expert” when exhibiting high competence but poor political affiliation. In the existing loyalty-competence tradeoff literature, the competence

of a civilian official is mostly gauged by education level (Card, 1999; Besley and Reynal-Querol, 2011; Bai and Zhou, 2019). However, this metric appears to be problematic in the China context, where many officials were educated during the Cultural Revolution (1966-1976), a period in which normal education was mostly disrupted. Plus, the practice of acquiring vocational degrees, which are often sold to political figures by Chinese academic institutions, complicates the measurement of officials' real educational experiences. This thesis proposes using "technocracy" as the indicator of competence, given its great reputation in China's development and the observed resurgence of technocrats across Xi's tenures. Technocrats are mostly defined as officials who studied science, technology, engineering, and mathematics (STEM) at higher education institutions and worked in related fields, such as R&D departments in SOEs, before joining public services. Hence, technocrat status may better ensure genuine officials' higher education and professional knowledge-oriented work experience. Recent research by some think tank scholars notes that Xi Jinping has appointed a series of "new technocrats"—officials from more specialized sectors like aerospace and military industries rather than traditional STEM fields—into government positions (Li, 2022a; Huang and Henderson, 2022). This thesis tried to use "new technocrat" as the definition of "competence," yet the limited number of new technocrats in Xi's first two terms (2013-2022) necessitates relying on the "traditional technocrat" as the indicator. Additionally, Li (2022b) identifies a group of "upper echelon strategists" (UES: 顶层设计师) hired by Xi Jinping. These are highly trained professional elites who have been advanced from advisory roles to real high-level officials and policymakers, highlighting the growing importance of individuals with extensive policy research and strategic planning expertise in China's governance. Although UES could provide a valuable definition for "competence," most of these figures hold central government positions, making their performance challenging to assess compared to provincial officials, whose achievements can be measured by

development indicators within their jurisdictions. Thus, this thesis will keep using the “technocrat” as the indicator of competence.

In terms of measuring political affiliation, Shih (2004) puts forward using native birth ties, education ties, or work ties. Shih’s method may present challenges in this thesis. For example, Xi Jinping entered Tsinghua University through a policy unique to the Cultural Revolution era as a Labor-Peasant-Soldier student admitted via political recommendation. Andreas (2009) identifies on-campus rivalries, even physical conflicts, between students admitted to colleges like Tsinghua through national exams versus political recommendations. This dynamic significantly complicates the determination of factional alignment among officials who were schoolmates or even classmates. Also, both Hu Jintao and Jiang Zemin hail from Jiangsu Province, complicating the assignment of factional affiliation for officials coming from Jiangsu. These ambiguities blur factional boundaries, reducing the clarity of factional categorization in this study. Jiang (2018) gives a way of identifying patron-client relations: linking officials with those who promote them to the positions. This thesis will adopt Jiang’s method by linking officials to the then-general secretaries when they were first promoted to key provincial (secretary or governor) or ministerial (minister) positions. For example, the identified Chongqing Secretary, Sun Zhengcai, was promoted to the Minister of Agriculture in 2006, when he got the provincial-ministerial job for the first time and Hu Jintao was the incumbent president in China. Therefore, Sun is not a political novice to Xi Jinping as he is deemed a member of Hu’s faction. Yuan Jiajun was promoted to the Governor of Zhejiang in 2017 when he got the provincial-ministerial job for the first time and Xi Jinping was the top leader in China. Thus, Yuan is especially connected to Xi Jinping because he is deemed not affiliated with any previous faction.

Officials in the dataset will be recorded as “weak experts” if they are technocrats with no affiliations to previous presidents, suggesting they have strong professional knowledge but poorer

political networks. A statistical summary reveals that the average age of a “weak expert” official at their first observation as a provincial leader during Xi’s tenure is 58.25 years, 1.14 years younger than their non-weak expert counterparts (see Figure 1). The number of weak experts has steadily increased since Xi formally assumed power in 2013 (see Figure 2). By 2022, the number of weak experts surpassed that of non-weak experts, a trend likely to persist, highlighting that weak experts are increasingly favored by Xi Jinping.

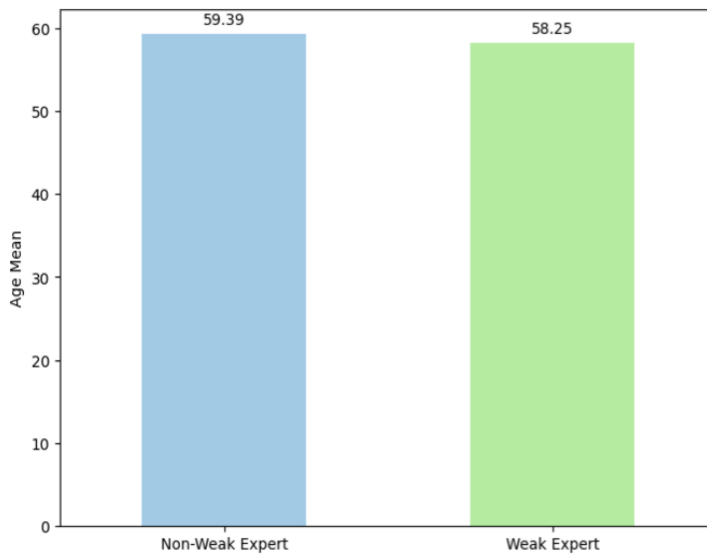


Figure 1: Age Comparison between Non-Weak Experts and Weak Experts

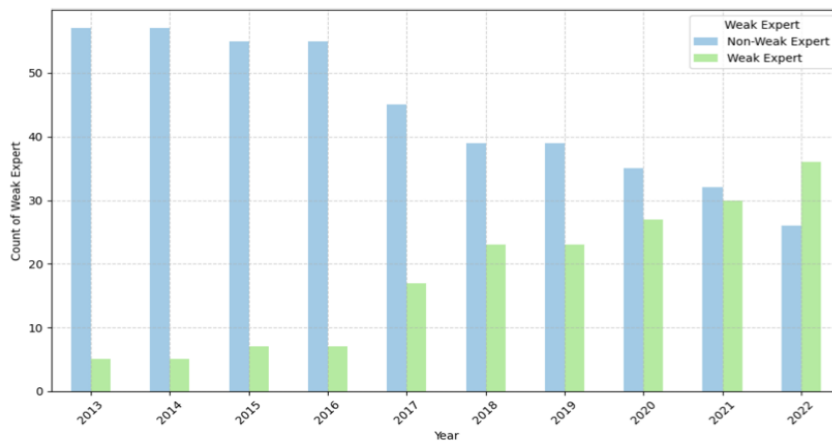


Figure 2: Yearly Distribution of Weak Experts

Performance (Dependent Variables). The predominant method for measuring bureaucrat performance in research on China has traditionally been GDP growth rates as well as other growth-oriented indicators (Bo, 1996; Shi et al., 2018; Jiang, 2018). However, they are obsolete for some reasons. First, given the cyclical nature of market economies, which dictates that no economy can sustain continuously rapid growth indefinitely (Hong and Sun, 1999), these traditional metrics may not fully capture the current economic realities. Typically, since Xi Jinping assumed power, China has seen its GDP growth rates decline to below 7% annually, following nearly four decades of double-digit expansion (Naughton, 2021). This shift marks China's transition to what has been termed the "new normal," signaling a move away from the extensive, traditional economic model and challenging the primacy of GDP as the sole indicator of progress (Zhang and Chen, 2017). Also, China's campaign-style environmental regulation (Zeng, Zhou and Yang, 2023) and the most stringent COVID-19 prevention policies in the world (Piao, 2023) have significantly tempered the economic growth, although these do not necessarily reflect negatively on China's governance.

As for the new metrics for measuring officials' performance, it is notable that Xi Jinping has been trying to position China as a global superpower by transforming it into a techno-security state, that integrates state security, technological innovation, and economic development (Cheung, 2022). Notably, in Hu Jintao's report to the 18th CCP National Congress in November 2012, the Innovation-Driven Development Strategy (IDDS: 创新驱动发展战略) was presented for the first time, claiming scientific and technological innovation as the cornerstone to enhance China's social productivity and overall national strength (Xinhua News Agency, 2012). As per CCP protocol, the outgoing leader, Hu Jintao, should outline Xi Jinping's policy vision in his report, which includes the IDDS (Cheung, 2022). Finalized in 2016, the IDDS identified several priority high-tech sectors for development and claimed to establish China as the global leader in scientific and technological

innovation by 2050 (Xinhua News Agency, 2016). Further, at the fifth plenary session of the 19th CCPPCC in 2020, the initiative of science and technology self-sufficiency and self-reliance (STSS: 科技自立自强) was officially endorsed as the strategic backbone of national development amid uncertainties in global supply chains caused by western technological embargoes and the COVID-19 (Xinhua News Agency, 2020). This initiative was subsequently written into the 14th Five-Year Plan (Xinhua News Agency, 2021). After synthesizing numerous speeches and policy documents, Naughton, Xiao, and Xu (2023) found that the IDDS and the STSS cover similar fields such as high-end chips and aerospace technology. Xi Jinping's pronounced focus on strategic technology leads this thesis to propose the development within sectors highlighted by the IDDS and the STSS as metrics for evaluating provincial officials' performance.

The Regional Statistical Yearbooks (RSYs: 区域统计年鉴) for each province have shown two notable columns: high-tech industry (高技术产业) and strategic emerging industry (战略新兴产业). The former item includes sectors like computer and office equipment manufacturing (计算机及办公设备制造业), aerospace and spacecraft equipment manufacturing (航空、航天器及设备制造业), etc. The latter embodies sectors like high-end equipment manufacturing (高端装备制造业), new energy (新能源产业), among others. Both items include sectors that closely align with Naughton, Xiao, and Xu's summary of Xi Jinping's core technology agenda. However, at least half of the RSYs do not include the "strategic emerging industry" section. Besides the RSYs, China's Ministry of Science and Technology has released the China High-tech Industry Statistical Yearbooks (CHISYs: 中国高技术产业统计年鉴), which cover the same sectors as the "high-tech industries" item in the RSYs for all provinces. Hence, this thesis will primarily rely on the CHISYs to measure officials' performance.

Specifically, this thesis will select the number of “high-tech patents” registered within each provincial territory as an indicator of provincial officials’ performance. This indicator can serve as a benchmark for assessing the effectiveness of provincial officials’ policies that aim at fostering technological advancement and innovation. Additionally, Chen and Rithmire (2020) observe that the Chinese state is transitioning to the “investor-state,” which strategically allocates state capital to private firms to foster industrial upgrading. Nevertheless, they also point out that state capital is not always utilized efficiently, citing observed corruption and resource misallocation as major impediments. Consequently, this thesis proposes that the “efficiency of government investment” in high-tech sectors should also be considered a crucial metric for assessing officials’ performance. The data for the government investment is also from the CHISYs, and the efficiency is calculated as follows:

$$\text{Efficiency of Government Investment} = \frac{\text{The Number of New Patents}}{\text{Government Investment}}$$

In his interviews with Chinese local officials, Jiang (2018) notes that development policies generally require 1.5 to 2 years to yield meaningful changes in economic indicators. Consequently, when measuring the effect of weak experts on patents and efficiency, this thesis will account for a two-year lagging effect. The performance data from two years after the weak experts took position will be used as the primary dependent variables.

Loyalty (Dependent Variables). Dictators often face the dilemma of not knowing the true loyalty of their subordinates till there are attempts to overthrow them (Wintrobe, 1998; Iqbal and Zorn, 2006). Some regimes have managed to circumvent this dilemma through mechanisms such as semi-competitive elections, which allow dictators to gauge loyalty before any coups (Way and Levitsky, 2002; Gehlbach et al., 2024). Despite not having competitive authoritarian institutions,

China employs alternative methods to assess subordinates' loyalty. Dickson (2013) notes that the CCP promotes volunteering activities like blood donation among its members as demonstrations of loyalty. Nonetheless, data on volunteering activities are scarce for empirical analysis and may not accurately reflect loyalty to specific autocrats. Jia (2022) argues that training in party schools is a significant loyalty indicator, as it can align cadres' beliefs and actions with Party ideology. Yet, since most provincial leaders share similar party school education backgrounds, this metric fails to differentiate varying loyalty levels. Plus, deriving from the empirical analysis of the Anti-Rightist Campaign (1957-1959), Qian and Bai (2024) present the Trust-Based Compliance Theory, positing that less trusted bureaucrats might engage in more intense repression to signal loyalty and trustworthiness. Conversely, those with already established trust may feel less need to demonstrate loyalty through severe actions. However, given the absence of large-scale political suppression in the Xi era, this approach may not apply to the current context, though it remains methodologically insightful. Chen and Hong (2020) discover that media, directly controlled by local authorities, serves as an effective tool for gauging subordinates' loyalty to their superiors. Local officials often exploit media outlets to publish negative reports about their rivals within the same faction, thereby signaling their loyalty and reliability to higher-ups by spotlighting the shortcomings or mistakes of their peers. This method is instructive, but it requires extensive manpower to collect and label media data.

Similarly, Shih (2008) utilizes provincial newspapers, which are directly supervised by the provincial propaganda departments and members of the provincial standing committee, to assess the loyalty of provincial leaders to the then-president, Jiang Zemin. Shih adopts content analysis techniques, specifically counting the frequency of the articles about “Three Represents” (三个代表)—Jiang's ideological campaign—in provincial newspapers from 2000 to 2004. This approach,

which effectively measures the willingness of local leaders to align with the paramount leader's ideological campaign, is technically feasible for this thesis. Shih's dataset was compiled by getting all articles from every Chinese provincial newspaper over those years from the China National Knowledge Infrastructure (CNKI). However, since April 1, 2023, the CNKI has ceased providing services to international users due to "security concerns" (Han, 2023). Notably, the CNKI employs anti-scraping techniques and manually downloading all newspapers issued daily from 31 provinces over a decade is extremely onerous.

In this case, this thesis will construct a suboptimal dataset by collecting Government Work Reports (GWR: 政府工作报告) from every province from 2013 to 2022. The GWRs are official documents produced by the executive branches of the Chinese government. Each year, executive organs at all levels are required to present these reports during the annual sessions of the People's Congress and Political Consultative Conference at their respective levels. Provincial leaders must pay special attention to the GWRs because GWRs are a metric to evaluate provincial performance by central authorities. Following Shih's method, this thesis will conduct a content analysis focused on "ideological campaigns" as a measure of loyalty by counting the presence of specific phrases in the provincial GWRs. Xi's ideology, known as Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era (习近平新时代中国特色社会主义思想, now referred to as "Xi's Thought"), was formally enshrined in the CCP's Constitution at the CCP's 19th National Congress in October 2017 following a unanimous vote (BBC, 2017). This implies that references in provincial GWRs to this concept are unlikely to appear before 2017. After reviewing numerous GWRs, this thesis incorporates additional phrases that also indicate loyalty to Xi, typically "Party Center" (党中央) and "with Comrade Xi Jinping as the core leadership" (以习近平同志为核心), to supplement the analysis of the Xi's Thought in the GWR content.

Besides counting loyalty-signaling phrases, this thesis employs TF-IDF (Term Frequency-Inverse Document Frequency) combined with cosine similarity, a Natural Language Processing (NLP) technique to quantify text similarity between provincial and central GWRs. It is essential to transform text data into a machine-readable form (vectors), known as text vectorization or text embedding, before analyzing text with computational methods. Various pre-trained deep learning models can be adopted for text vectorization, including TF-IDF, Word2Vec, BERT (Bidirectional Encoder Representations from Transformers), SBERT (Sentence-BERT), and so on, each offering different approaches to capture word importance and semantic meaning. TF-IDF, the simplest and most efficient among these, calculates term frequency and inverse document frequency to gauge each term's significance within a text, while the other models seek semantic understanding. Shih (2008) mentions that the frequency of local ideology-echoing articles can lower the cost of loyalty signaling and monitoring, even though this frequency carries limited substantive meaning. Hence, using TF-IDF vectorization on GWRs may be a more suitable approach for analyzing loyalty, as it measures textual importance rather than deep semantics, which NLP techniques often interpret uniformly across government documents. Once vectorized, cosine similarity between central and provincial GWRs, calculated as the cosine of the angle between two vectors (Lahitani, Permanasari, and Setiawan, 2016), is then applied; vectors pointing in similar directions yield a cosine similarity close to 1, indicating a higher degree of similarity—and, by extension, greater provincial loyalty—between provincial and central GWRs.

It is important to note that provincial reports are typically presented during the provincial two sessions in January each year, while the national report is disclosed in March. This time gap prevents provincial leaders from merely copying the central reports as a means of signaling loyalty. Given that a major component of the GWR involves setting goals for the forthcoming year, this

thesis will primarily examine if provincial governments have made efforts to align with the goals set by the center in last year's GWR. The mathematical algorithm to calculate cosine similarity is as follows:

$$\text{GWR Cosine Similarity} = \frac{\text{Provincial GWR} \cdot \text{Central GWR}_{\text{year-1}}}{\|\text{Provincial GWR}\| \|\text{Central GWR}_{\text{year-1}}\|}$$

Control Variables. It should be noted that there are additional factors that might correlate with dependent variables (performance and loyalty) beyond the “weak expert” status (independent variable). Without accounting for these variables, there could be confounding effects that lead to erroneous estimations. For example, development disparities across provinces could significantly impact the performance of the model. Specifically, coastal provinces in China are more attractive to high-tech companies and hence possess greater human capital (Yang, 2002); nevertheless, this does not imply that officials in inland provinces are less effective in fostering the development of high-tech sectors compared to their coastal colleagues. The sections “the number of employees in the high-tech industry” and “the number of high-tech companies” found in the CHISYs provide clear indicators of regional disparity. Therefore, they will be utilized as control variables in the regression models analyzing the relationship between “weak experts” and officials’ performance. In addition, Wei, Ang, and Jia (2023) examine how Chinese governments at both the central and local levels have created government guidance funds (GGFs), channeling the state capital into the private sectors to foster technological advancement. They observe that GGFs are not consistently effective, often favoring coastal regions. Thus, this thesis will include the “government funding” data from the CHISYs as a control variable in the regression analyses between weak expert status and the performance of provincial officials too.

Regarding additional variables that may influence officials’ loyalty, Shih (2008) suggests that several factors, including the length of time leaders have worked in propaganda departments,

their membership in the then-autocrat’s faction, and their provincial fiscal dependency on central transfers, significantly influence their loyalty to the central autocrat. Accordingly, this thesis will gather data on the number of years provincial officials have worked in propaganda departments, also including tenure in other places overseen by propaganda departments, such as the People’s Daily, from officials’ resumes. Moreover, this thesis will assess the provincial leaders’ affiliation with Xi Jinping’s faction using Jiang’s (2018) method, which involves verifying if an official was first promoted to the provincial-ministerial level by Xi Jinping. Also, after getting the fiscal data from the RSYs, the method for measuring provincial fiscal dependence is:

$$\text{Deficit} = \frac{\text{Local Revenue} - \text{Local Expenditure}}{\text{Local Revenue}}$$

Data Preprocessing. Before fitting the regression models, data preprocessing techniques such as standardization or logarithmic transformation of numeric variables should be considered because they can enhance the precision and accuracy of the models. The appropriate method of preprocessing should be tailored to the characteristics of each variable. Generally, if the standard deviation exceeds the mean, this implies a broader distribution possibly with extreme values, in which case a logarithmic transformation can help mitigate data skewness. Conversely, if the data is stable, standardization may be appropriate to ensure all variables are on a comparable scale. As outlined in Table 1, most variables in this analysis require logarithmic transformation as they show a clear distribution skewness. Here are examples of data transformation:

$$\text{Log Patents} = \log(1 + \text{Patents}), \text{ and:}$$

$$\text{GWR Cosine Similarity Standardized} = \frac{\text{GWR Cosine Similarity} - \mu_{\text{GWR Cosine Similarity}}}{\sigma_{\text{GWR Cosine Similarity}}}$$

Model Specification. To examine if “weak experts” show superior performance in China’s high-tech development and tend to be more loyal to Xi Jinping, this thesis will initially employ

Ordinary Least Squares (OLS) as the major estimation framework, followed by the fixed effects model as the robustness check. OLS is a fundamental linear regression method that offers the best linear unbiased estimators under the Gauss-Markov theorem (Burton, 2021). It provides the most straightforward parameter estimation and interpretable coefficients, making it an excellent starting point for regression analysis. However, OLS has some notable drawbacks (Wooldridge, 2010). First, it struggles to account for the impact of variables that are constant over time within entities, potentially masking significant dynamics within the data. Second, the assumption of independent observations is often breached in panel data, as observations over time for the same unit are likely correlated (autocorrelation). The fixed effects model can address the drawbacks of the OLS models by controlling for all time-invariant characteristics, utilizing only the variation within units over time (Baltagi, 2021). Plus, the fixed effects models can enhance robustness against autocorrelation within panels by fixing within-entity variations and eliminating between-entity variations (Ibid). Consequently, both the OLS and fixed effects model will be used to ascertain if weak experts are more likely to show better performance in technological development and greater loyalty to Xi Jinping.

Table 1: Summary Statistics of Variables for Pre-processing

Variables	Obs	Mean	Std. Dev.
propoganda_years	620	1.11	2.98
company_amount	620	1,138	1829
employee_amount	620	438,420	769,781
gov_funding	620	100,062.15	131,063.49
patents	620	14,072	31,207
deficit	620	-1.66	1.73
efficiency	620	0.15	0.14
ideological_campaign	620	9.54	7.13
report_cosine_similarity	620	0.11	0.03

The major OLS estimation frameworks (without control variables) are:

$$\log(\text{patents})_{t-2} = \beta_0 + \beta_1 \times \text{weak_expert} + \epsilon, \text{ and:}$$

$$\text{efficiency}_{\text{standardized},t-2} = \beta_0 + \beta_1 \times \text{weak_expert} + \epsilon, \text{ and:}$$

$$\text{ideological_campaign}_{\text{standardized}} = \beta_0 + \beta_1 \times \text{weak_expert} + \epsilon, \text{ and:}$$

$$\text{report_cosine_similarity}_{\text{standardized}} = \beta_0 + \beta_1 \times \text{weak_expert} + \epsilon$$

Moreover, the major fixed effects estimation frameworks (without control variables) are:

$$\log(\text{patents})_{t-2} = \beta_0 + \beta_1 \times \text{weak_expert}_{it} + \alpha_{\text{province}} + \eta_{\text{year}} + \epsilon, \text{ and:}$$

$$\text{efficiency}_{\text{standardized},t-2} = \beta_0 + \beta_1 \times \text{weak_expert}_{it} + \alpha_{\text{province}} + \eta_{\text{year}} + \epsilon, \text{ and:}$$

$$\text{ideological_campaign}_{\text{standardized}} = \beta_0 + \beta_1 \times \text{weak_expert}_{it} + \alpha_{\text{province}} + \eta_{\text{year}} + \epsilon, \text{ and:}$$

$$\text{report_cosine_similarity}_{\text{standardized}} = \beta_0 + \beta_1 \times \text{weak_expert}_{it} + \alpha_{\text{province}} + \eta_{\text{year}} + \epsilon, \text{ in}$$

which β_1 is the coefficient for the independent variable, weak expert. i and t denote province and year, respectively. Also, α_{province} and η_{year} represent the fixed effects for each province and year, individually, capturing all unobserved, time-invariant influences on dependent variables.

Table 2: Weak Experts' Performance on High-tech Patents

Dependent Variable:	(1) OLS	(2) Fixed Effects	(3) OLS	(4) Fixed Effects
	Log Patents _{t-2}			
Weak Expert	0.973 (0.244)***	0.279 (0.159)*	0.11 (0.054)**	0.137 (0.054)**
Province-Year FE	No	Yes	No	Yes
Log Employee Amount_{t-2}	No	No	Yes	Yes
Log Company Amount_{t-2}	No	No	Yes	Yes
Log Gov Funding_{t-2}	No	No	Yes	Yes
Observations_{t-2}	340	340	340	340
R Square	0.041	0.016	0.952	0.827

Empirical Results:

Tables 2-5 present the effects of weak experts on performance (Tables 2 and 3) and loyalty (Tables 4 and 5). In these tables, coefficients are displayed outside the parentheses, while standard errors are in parentheses. An asterisk (*) denotes a p-value < 0.1 , double asterisks (**) indicate a p-value < 0.05 , and triple asterisks (***) represent a p-value < 0.01 . Starting with Table 2, it shows that this thesis uses the logarithmically transformed number of new high-tech patents registered within a province (with a two-year lag) as the dependent variable—a measure of provincial leaders' performance, where a higher count of patents reflects better performance. Models (1) and (2) in Table 2 are basic OLS and fixed-effects models, respectively, including only “weak expert” status as the independent variable. The coefficients for “weak expert” are 0.973 and 0.279, respectively, suggesting that provinces led by weak experts tend to register more high-tech patents annually. The OLS model indicates a p-value < 0.01 , implying less than a 1% likelihood that “weak expert” officials do not perform better. However, the fixed-effects model has a p-value between 0.05 and 0.1, indicating marginal significance. Models (3) and (4) add control variables—the number of high-tech companies, high-tech employees, and government funding within the province—which evidently affect the dependent variable. Here, the coefficients for “weak expert” drop to 0.11 and 0.137, but remain positive, supporting the hypothesis that “weak expert” officials contribute to the increase in high-tech patents. Both models remain statistically significant, with 95% confidence intervals.

To strengthen the argument that “weak expert” officials perform better, this thesis also examines an additional dependent variable: the standardized efficiency of government funding in high-tech sectors with a two-year lag. The results are presented in Table 3. As mentioned above,

efficiency is calculated as the number of high-tech patents produced per unit of state investment, with higher efficiency reflecting better performance by provincial cadres. This efficiency measure is standardized before being used as the dependent variable. Initially, straightforward OLS and fixed-effects models (Models 1 and 2) assess the direct relationship between “weak expert” status and government funding efficiency, with only province-year fixed effects included as controls in Model 2. Both models yield positive coefficients (0.556 and 0.306), suggesting that weak experts can enhance government funding efficiency in high-tech sectors. However, the fixed-effects model (Model 2) yields a p-value < 0.1 , indicating lower confidence in rejecting the null hypothesis that weak experts do not perform better, compared to the OLS model with a p-value < 0.01 . In Models 3 and 4, the same control variables used in the high-tech patents analysis are added. These models continue to show positive coefficients (0.412 and 0.285, respectively), with statistically significant p-values < 0.01 and < 0.05 , indicating strong evidence that “weak expert” officials can positively impact high-tech sector efficiency. The lack of significance in the simpler fixed-effects models may be due to the dataset size, which is reduced to 340 observations out of 620 when accounting for lagging effects. Despite this limitation, the results become statistically robust with the inclusion of control variables. Consequently, it is reasonable to conclude that “weak expert” officials have a positive influence on the development of local high-tech sectors, as proven by both an increase in high-tech patents and the improved efficiency of government funding in provinces under their governance.

For the loyalty analysis, this thesis initially uses the standardized ideological campaign—the number of loyalty-signaling phrases in provincial GWRs—as the dependent variable. A higher count of loyalty-signaling phrases reflects a greater degree of loyalty among provincial leaders toward Xi Jinping. Table 4 presents these results. Before running regressions, the count of loyalty-

signaling phrases is standardized. The analysis starts with the simplest regression models (Model 1 and Model 2), examining the relationship between “weak expert” identity and the standardized ideological campaign without additional variables, aside from province-year fixed effects in Model 2. Both initial models show strong positive coefficients (0.483 and 0.561) for the “weak expert” identity, with statistical significance at the 99% confidence level, supporting the hypothesis that weak experts display more loyalty to Xi Jinping. To strengthen these findings, additional variables are introduced as controls, including the number of years provincial officials have worked in state propaganda departments, the provincial treasury’s dependency (deficit) on central transfers, and provincial leaders’ membership in Xi Jinping’s faction. In Models 3 and 4, which incorporate these controls, the coefficients for the “weak expert” identity and the standardized ideological campaign decrease to 0.189 and 0.457, respectively. Despite the reduction, these coefficients remain positive and statistically significant at the 99% confidence level. The consistency across all four models supports the assertion that “weak expert” officials signal greater loyalty to Xi Jinping, as evidenced by their increased propensity to publicly echo Xi Jinping’s ideological campaign.

Additionally, this thesis uses the standardized cosine similarity between provincial GWRs and the previous year’s central GWRs as a dependent variable to assess provincial leaders’ loyalty. A higher similarity score indicates stronger alignment with central directives and, consequently, greater loyalty to Xi Jinping. The findings, shown in Table 5, begin with the initial models (Model 1 and Model 2), focusing on the simple relationship between “weak expert” status and standardized cosine similarity, including province-year fixed effects in Model 2. Both models yield substantial positive coefficients, 0.656 and 0.751, respectively, and both are statistically significant at the 99% confidence level. This implies that “weak expert” officials align more closely with Xi Jinping, as reflected in their GWRs’ similarity to the central GWR. To increase regression accuracy, Models

3 and 4 introduce additional variables that may influence the results. Indeed, coefficients remain positive and robust at 0.255 and 0.548, individually, with continued statistical significance at the 99% confidence level. The stability across all four models underscores that weak expert officials exhibit stronger loyalty to Xi Jinping, demonstrated by their GWRs' greater alignment with central policies.

Table 3: Weak Experts' Performance on Gov Funding Efficiency

Dependent Variable:	(1) OLS	(2) Fixed Effects	(3) OLS	(4) Fixed Effects
	Efficiency Standardized _{t-2}			
Weak Expert	0.556 (0.163)***	0.306 (0.171)*	0.412 (0.098)***	0.285 (0.125)**
Province-Year FE	No	Yes	No	Yes
Log Employee Amount_{t-2}	No	No	Yes	Yes
Log Company Amount_{t-2}	No	No	Yes	Yes
Log Gov Funding_{t-2}	No	No	Yes	Yes
Observations_{t-2}	340	340	340	340
R Square	0.057	0.024	0.562	0.501

Table 4: Weak Experts' Loyalty Reflected by Ideological Campaign

Dependent Variable:	(1) OLS	(2) Fixed Effects	(3) OLS	(4) Fixed Effects
	Ideological Campaign Standardized			
Weak Expert	0.483 (0.09)***	0.561 (0.088)***	0.189 (0.04)***	0.457 (0.109)***
Province-Year FE	No	Yes	No	Yes
Log Propaganda Years	No	No	Yes	Yes
Deficit Standardized	No	No	Yes	Yes
Connection with Xi	No	No	Yes	Yes
Observations	620	620	620	620
R Square	0.048	0.068	0.055	0.114

Table 5: Weak Experts' Loyalty Reflected by GWR Similarity

Dependent Variable:	(1) OLS	(2) Fixed Effects	(3) OLS	(4) Fixed Effects
	Report Cosine Similarity Standardized			
Weak Expert	0.656 (0.085)***	0.751 (0.102)***	0.255 (0.036)***	0.548 (0.121)***
Province-Year FE	No	Yes	No	Yes
Log Propaganda Years	No	No	Yes	Yes
Deficit Standardized	No	No	Yes	Yes
Connection with Xi	No	No	Yes	Yes
Observations	620	620	620	620
R Square	0.089	0.103	0.095	0.29

Conclusion:

The classical loyalty-competence tradeoff frameworks often suggest an inherent tension between loyalty and competence in autocracies' elite appointment, where loyal yet less competent individuals will be preferentially recruited by dictators. Competent officials, while more effective in governance, may be seen as threats due to their capabilities and influence, which could challenge existing authority. Conversely, loyal officials may lack the same level of competence, but they will help perpetuate the autocratic status quo. This thesis gives a revision, “loyalty-competence tradeoff 2.0”, contending that dictators can manage this tradeoff by appointing “weak experts”: individuals with strong professional expertise but limited political influence or factional affiliations. These bureaucrats are both reliable and effective, enabling the undemocratic regime to balance loyalty and competence more seamlessly.

The “loyalty-competence tradeoff 2.0” framework is built on the empirical analysis of Xi Jinping’s interactions with his provincial comrades from 2013 to 2022. Existing literature provides two primary justifications for China’s preference for competent officials despite its authoritarian nature. The first is the process of institutionalization, which encompasses orderly power transitions, merit-based elite appointments, a partial separation of party and state powers, and increased public participation—distinguishing China from conventional dictatorships. Second, at a certain point, competent officials offer Chinese autocrats a higher return than simply purging them. Nonetheless, Xi Jinping’s rise in 2013 has tempered optimism around the process of institutionalization. The value of appointing competent yet potentially less loyal subordinates has also declined, as China’s most significant developmental challenges have already been resolved, and the country is now on a trajectory toward becoming the world’s largest economy. Despite this, Xi Jinping has continued to prefer officials with advanced education and extensive experience in local government and core

functional departments, and China has not seen a mass replacement of competent leaders under his rule. Thus, Xi's China serves as an ideal observational case to update the conventional theory.

The empirical results presented in this study, particularly in Tables 2 through 5, support the “loyalty-competence tradeoff 2.0” framework. “Weak expert” officials outperform their non-weak expert counterparts in advancing China's high-tech development agenda. This is evidenced by higher numbers of high-tech patents registered and greater efficiency in government funding for technological sectors in provinces governed by “weak expert” officials. The OLS and Fixed Effects models consistently show that these officials play a vital role in China's innovation-driven development strategy (IDDS) and the initiative of science and technology self-sufficiency (STSS), which are crucial for China's long-term strategic goals. Further loyalty analysis, based on the use of ideological campaign phrases and cosine similarity between provincial and central government work reports (GWRs), reveals that “weak expert” officials align more closely with Xi Jinping's ideological campaign and policy directives. These officials are more likely to use loyalty-signaling phrases in provincial reports and show greater rhetorical alignment with central policies, which underscores their greater loyalty to Xi Jinping. Importantly, even with the incorporation of control variables, the coefficients in all models remain positive and statistically significant, reinforcing the conclusion that weak expert officials are both more competent and more loyal.

While this thesis provides substantial evidence supporting the efficacy of weak experts in balancing loyalty and competence, it has certain limitations. Relying on provincial data, although insightful, may not fully capture the complexities of official recruitment and governance in China. Incorporating interactions between provincial governors and municipal mayors, as Jiang (2018) does, will offer a more comprehensive view of China's elite recruitment in the tradeoff of political survival and development. Additionally, the use of a traditional definition of “technocrat” as the

indicator of “competence” may overlook new dynamics in China’s governance landscape. To be specific, Li (2022a; 2022b) highlights the emergence of “new technocrats” and “upper-echelon strategists” in the Xi Jinping administration could be more nuanced categories that better describe the competence of Chinese officials. Expanding the dataset to include Xi Jinping’s third term (2027) or even a potential fourth term (2032) could enable the use of “new technocrats” as an indicator of competence, as the increased number of new technocrats would provide a sufficient sample size for empirical research. Similarly, using “upper-echelon strategists” as the definition of competence would also enhance the analysis, it would only be meaningful if a reliable method for quantifying the performance of central officials is established. Thus, future research could build upon this study in three ways: 1) examine not only the interactions between Xi Jinping and provincial officials but also the dynamics between provincial and municipal officials; 2) adopt “new technocrats” as the indicator for bureaucrats’ competence, with an expanded dataset encompassing Xi Jinping’s third and even fourth terms; 3) consider “upper-echelon strategists” as the competence indicator and build an approach to evaluate the performance of central bureaucracies.

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