CENTRE *for* ECONOMIC
PERFORMANCE

CEP Discussion Paper No 1409

February 2016

One Mandarin Benefits the Whole Clan: Hometown Favoritism in an Authoritarian Regime

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Abstract
We study patronage politics in authoritarian Vietnam, using an exhaustive panel of 603 ranking officials from 2000 to 2010 to estimate their promotions' impact on infrastructure in their hometowns of patrilineal ancestry. Native officials' promotions lead to a broad range of hometown infrastructure improvement. Hometown favoritism is pervasive across all ranks, even among officials without budget authority, except among elected legislators. Favors are narrowly targeted towards small communes that have no political power, and are strengthened with bad local governance and strong local family values. The evidence suggests a likely motive of social preferences for hometown.

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"One person becomes a mandarin,[1] his whole clan benefits."
- Vietnamese proverb

"Even the blind favor the people they know."
- Indian proverb

"When a man attains power, even his chickens and dogs ascend to heaven."
- Chinese proverb

I. Introduction

One common form of public office misuse is favoritism targeted towards certain groups. In democracies, favoritism is often associated with pork-barrel politics whereby office holders direct resources to specific constituencies in order to win their votes and political support for reelection.[2] In contrast, in authoritarian regimes where the state is barely accountable to voters, politicians do not gain power via competitive elections. To get appointed to an office, they need to please their superiors rather than any other group of citizens. Without electoral incentives, different questions on favoritism under dictatorship arise. Do appointed officials favor any group of citizens, and which ones? Which officials, at which ranks, can direct public resources towards favored groups? How is favoritism actually exercised? What are the motives of favoritism when elections do not matter? Those issues of "who gets what, when, how" are central to the study of politics (Lasswell, 1936), hence of high necessity to understanding the functioning and development of autocracies.

In contribution to those questions, this paper investigates hometown favoritism under autocracy across a spectrum of office holders, highlighted by the

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[1] The term "mandarin" refers to bureaucrats of the historical Vietnamese monarchist court.

[2] Since Ferejohn (1974), the large body of evidence of this central topic in the political economy of resource distribution, as surveyed in Golden and Min (2013), has mostly considered the quid-pro-quo nature of favoritism towards concentrated groups of beneficiaries that provide political support in elections (as modeled by Weingast, Shepsle, and Johnsen, 1981). Notable empirical evidence includes Levitt and Snyder (1995) in the U.S; Chattopadhyay and Duflo (2004), Banerjee and Somanathan (2007), and Keefer and Khemani (2009) in India, and Hicken (2001) in Thailand. In addition, Besley, Pande and Rao (2012) shows that elected officials favor their own villages and castes, which in turn support them in elections.

relationship between their new promotions and new public infrastructures in their ancestral hometowns. We provide empirical characteristics of hometown favoritism regarding its prevalence below the top leadership, the breadth of its targets, its scope across types of infrastructure, and the local characteristics that can predict its strength.

Hometown favoritism in dictatorship has traditionally been recounted through a host of anecdotal examples of excessive favors that dictators bestow on their hometowns. Sirte, Libya, was a small unknown village until the early 1970s when it received massive government investments, and eventually became home of the Libyan parliament and most government departments after 1988 (*Europa* 2004). The town was not chosen at random: it was the birthplace of Colonel Muammar Gaddafi, Libya's autocrat for 42 years. In a similar spirit, Côte d'Ivoire's president Félix Houphouët-Boigny established his tiny birth town of Yamoussoukro as the capital, and showered it with record-breaking behemoth infrastructures (*The Economist* June 16th 2012); Zaire's notorious dictator Mobutu Sese Seko created a "jungle paradise" in his remote ancestral hometown Gbadolite (*The Guardian* February 10th 2015); and Sri Lankan prime minister Mahinda Rajapaksa flooded his tiny rural birth-district Hambantota with extravagant projects (*Los Angeles Times* March 30th 2015), to name but a few. Guided by those examples, recent studies have shown evidence of country leaders' favoritism towards their birth regions (Hodler and Raschky 2014, Dreher et al. 2015) and ethnic groups (Burgess et al. 2015, Kramon and Posner 2012, Franck and Rainer 2012, De Luca et al. 2015).

In contrast, little empirical evidence is known concerning favoritism beneath dictators, mainly due to three major obstacles. First, systematic administrative data on ranking officials in authoritarian societies, especially related to their potential targets of favoritism, are often too sensitive to obtain or collect. Second, when the target group is sufficiently large and could be envisaged to provide

significant political support, such as in the case of favoritism towards a major ethnic group, there is naturally a possible reverse causation channel from favors to officials' promotions, which adds to the difficulties of interpreting regression coefficients. Third, even when data are available and identification is credible, grand scale favoritism by an all-powerful dictator towards a large group, such as in Burgess et al.'s (2015) investigations of Kenya's autocratic presidents Jomo Kenyatta and Daniel arap Moi, may overwhelm or crowd out "petty favoritism" by most officials in the system (Burgess et al. did not find ethnic favoritism among key ministers in the corresponding cabinets).

To address these challenges, we choose to study hometown favoritism in Vietnam. The country is ruled by the Communist Party of Vietnam (CPV),[3] one of the oldest authoritarian parties in continual existence today, with long-established political principles and organization rules.[4] Unlike in China, since 1984 the CPV has avoided concentration of authority in an all-powerful dictator by balancing power across four top positions. This division of power naturally constrains excessive favoritism by a single leader. The spectrum of positions in all political, executive and legislative bodies are selected, controlled and appointed by the CPV's procedures. State officials are only accountable to the selectorate within the Party, but insulated from the ordinary voters (Malesky and Schuler 2009). Under these rules, it is common knowledge that there is no need to please the populace in exchange of political support. To further minimize the potential political support that could be traded for favor, we focus on the lowest-level administrative unit, the commune, and consider only rural home communes. Each of the 9,043 rural communes in Vietnam contains at most a few thousand

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[3] The unified Socialist Republic of Vietnam's constitution since 1980 designates the CPV as the unique ruling party. Before 1976, the CPV was called the Labour Party of Vietnam, and held power in Vietnam Democratic Republic (North Vietnam) since 1954.

[4] According to the Worldwide Governance Indicators (Kaufmann, Kraay, and Mastruzzi 2011), over the period from 2000 to 2010, Vietnam consistently scores around the 8th percentile on voice and accountability, and around the median on political stability.

households, hardly meaningful to harness any political or popular support for a native ranking official in provincial or central government.

The home commune of patrilineal ancestry plays a significant role in Vietnamese identity, representing a geographical patrilineal root that might date back hundreds of years in genealogical registries. People from the same hometown consider each other socially close even if they can be genealogically up to four or five generations remote,[5] so the home commune can wield an important influence on a native official's social preferences. When a hometown's native ascends to power, he is commonly expected to channel some favors back to the hometown, as captured in the old saying "one person becomes a mandarin, his whole clan benefits." Hence, in the Vietnamese context, a ranking official's favors towards his hometown are rather motivated by social preferences than by strategic political calculations.

We examine the outcome of favoritism in terms of public infrastructure in communes, given its key role in development.[6] The United Nations regards infrastructure as one of the most important foundations for achieving its Millennium Development Goals. Shioji (2001) suggests that a 10% increase in infrastructure investment improves regional income by 1 to 1.5% in the long run. Fast-growing Vietnam and China invest nearly 10% of their national incomes in this critical foundation (Sahoo, Dash, and Nataraj 2012).[7]

We collect data on all officials in ranking office during the period 2000-2010. Ranking officials include all members of the Party Central Committee, all government positions of the deputy minister rank and above, all provincial leaders

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[5] One could relate social preferences among relatives from the same hometown to co-ethnic preferences in ethnically fractionalized societies, but for a very small "group". In Vietnam, ethnic favoritism is not a major factor, since a single ethnic group (native Vietnamese, called Kinh) constitutes 86% of the population and control most important political positions.

[6] The paper is also closely related to the literature on politicians' favoritism towards firms, in autocracies as well as democracies (e.g. Fisman 2001, Khwaja and Mian 2005, Do et al. 2014, among many others).

[7] Interestingly, Persson and Zhuravskaya (2015) reports that Chinese provincial leaders who build their careers within the province tend to spend less on infrastructure and more on education and health, which reflects local preferences.

and all members of the legislative National Assembly. We select hometowns in rural areas and match them to infrastructure data on rural communes, as surveyed by the Vietnam Household Living Standards Survey (VHLSS). Using OLS regressions with commune fixed effects and year dummies, we estimate the effect of new promotions of native officials on home communes' new infrastructure. We further estimate the new promotion effect on the incidence rate of new infrastructure in a Poisson count model and a Cox survival model.

We find strong, robust evidence of favors addressed to officials' hometowns: home communes receive an average of 0.23 new categories of infrastructures within 3 years after a native official's promotion (the estimated multiplicative effects on incidence rates are also around 1.22). Favors are narrowly targeted towards home communes, while similar communes in the same home district receive no additional infrastructures. Favoritism is widespread among middle-ranking positions, especially in the executive branch. It is insignificant among representatives in the legislative National Assembly, in contrast with common findings in democracies' distributive politics (Golden and Min, 2013). This pattern reveals the power structure within an authoritarian regime, a topic often considered a black box to outsiders.

Those results shed light on the non-political nature of hometown favoritism motives. Political motives may take different forms. Pork-barrel politics in democracies is generally based on quid pro quo rewards to political constituencies. In some specific cases, it can be motivated by politicians' career concern in their hometown (Carozzi and Repetto, 2014). In autocracies, dictators' favoritism is tightly linked with political motives to strengthen political support and reduce the threat of rebellion (as examined by Padró-i-Miquel, 2007), and to build a loyal stronghold when armed conflicts take place, as witnessed in the case of Colonel Gaddafi's last defense in Sirte (*The Economist* June 29th 2013). The evidence of widespread favoritism narrowly targeted towards small home

communes refutes those explanations, and points to social preferences as the likely motive behind hometown favoritism. This explanation is further strengthened by an additional finding that hometown favoritism is stronger among areas with stronger family values (measured by remittances and worship expenditure in VHLSS).[8] Narrowly-targeted favoritism under strong family values resonates with recent studies of family culture, quality of institutions, and corruption (e.g. Lipset and Lenz 2000, Alesina and Giuliano 2011), which follow Edward Banfield's (1958) pioneer work on how "amoral familism" (the social equilibrium in which people exclusively care about and trust their families) prevents the development of well-functioning political institutions and fosters deviance from norms of merit.[9]

That the officials in the sample have no direct authority over commune budgets[10] suggests that favoritism must be engineered through favor trading with budget authorities, a well-known mechanism in Vietnamese politics. Typically, a home commune leader initiates the process by suggesting to the native official certain infrastructure projects that could benefit the commune. Even without direct budget authority, the official can use his political capital to influence province and district authorities in favor of his hometown's projects. We find support for this mechanism in that favoritism is stronger under weaker local governance (measured via the Vietnam Provincial Competitiveness Indices). These findings suggest that favoritism works through informal channels based on specific forms of political power and institutional settings.

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[8] While we cannot reject all possibilities of officials' personal economic gains via favoritism, some can be ruled out. Ranking officials live in urban areas and cannot benefit directly from hometown infrastructure. We also find stronger favoritism among poorer communes, but no effect on the hometown commune's average income or population, suggesting that the effect is not motivated by officials' plans to resettle in their hometown after retirement from public office. Among ranking officials, retirement in one's rural hometown is considered very unlikely.

[9] The role of links to hometown and the extended family also relates this paper to the broad literature on networks of relatives and compatriots, which have been shown to help with risk sharing (e.g. Angelucci, De Giorgi, and Rasul 2015; see review by Fafchamps 2011), job search and job referral (review by Ioannides and Loury 2004, Topa 2011).

[10] A chairman of a Provincial People's Committee does hold authority over district budgets within the province. However, we do not find significant effects on home district infrastructures.

The paper is organized as follows. Sections II to V present the political background of Vietnam, data description, testable hypotheses, methodology and empirical results, respectively. Section VI discusses the results and concludes.

II. Context of the Study

A. *Political background*

The Constitution of the Socialist Republic of Vietnam states that, "the Communist Party of Vietnam […] is the leading force of the State and the Society." In practice, the Communist Party of Vietnam (CPV) has held a monopoly of power since Vietnam's reunification in 1976. CPV members account for less than 4% of the population. In the Vietnamese political structure, the three most important bodies (in descending order of power) are the CPV, the Government, and the National Assembly. The CPV is headed by a General Secretary, and its leadership includes a 15-member Politburo and a 150-member Central Committee. These are the most powerful people in Vietnam, in charge of making all key personnel and strategic decisions for the country.

The Government, headed by a Prime Minister and several Deputy Prime Ministers, is the executive branch of the state. Functionally, the Government consists of more than 30 ministries and ministry-level agencies. The cabinet also includes the State Bank's Governor, the Chief Justice of the Supreme People's Court and the Prosecutor General of the Supreme People's Procuracy.[11] Geographically, the Government includes 64 provincial authorities (Provincial People's Committees). There are three levels of the local authorities: provincial, district and commune. The lower-level People's Committees report to the People's Committees immediately above them.

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[11] The judiciary branch thus has limited power, and judiciary decisions depend heavily on the Government and CPV.

The National Assembly (NA) is the legislative branch of the state. It consists of roughly 500 delegates elected from electoral districts based in the 64 provinces. All laws and budget decisions are prepared by the Government before they are sent to the NA for discussion and ratification. In practice, the CPV controls all key positions in the NA, and directs the NA to rubberstamp proposed laws. The CPV also closely controls the nomination and election process for the NA (as documented by Malesky and Schuler 2009). About 80% of the delegates are members of the CPV. Although the NA's de facto power has increased in recent years, it is still very limited compared to that of the CPV and the Government.

Similar to other authoritarian regimes, the ruling party selects, appoints, and influences the filling of all executive and legislative positions. The nominal process works as follows. In an election year, based on lists of nominations by the incumbent Politburo and Central Committee, the CPV's Congress meets and selects the Central Committee, which then selects the Politburo and ranking positions. The CPV then nominates candidates for the NA, including its key positions, and citizens vote among those candidates. Afterwards, elected delegates of the NA, 80% of whom are CPV members, vote to approve the Prime Minister and cabinet members nominated by the CPV in a single, uncontested list. Finally, the Prime Minister and Cabinet Members appoint all other positions in the Government. The CPV controls closely the selection of candidates, the communication between candidates and constituents, the election locations and procedure, and the counting of the votes. Thus, the CPV's Central Committee effectively decides who fill ranking positions in the Government and in the NA. In this system, the popular votes count little, and small entities like communes hold no political power over ranking officials.

Under Vietnam's single-party rule, there is little separation between the State and the CPV, and thus little distinction between bureaucrats and politicians. In practice, even very low-ranking officials (such as the heads of communes) need to

be members of the CPV in order to hold office and get promotions. Ranking members of the CPV and elected delegates of the NA receive their salaries from the same system and source as do government bureaucrats.

It is useful to understand the ways in which Vietnamese state officials may direct public investments in infrastructure toward their preferred communes. Subject to the level of funding required, the decision to build public infrastructure is made in different stages by provincial, district and then commune officials. District officials have the authority to direct projects to communes. In contrast, officials at the central level (CPV's Central Committee members, ranking members of the Central Government, or the NA) do not have the formal, hierarchical authority to make decisions on local infrastructure. They must exercise their personal influence over district officials in order to obtain government projects for their preferred communes.

During the study period, Vietnam experienced significant economic growth and a drastic reduction in poverty. Real GDP increased by 6.5% per year on average from 2001 to 2010. The percentage of people living on less than two dollars (PPP) per day fell from 68.7% in 2002 to 38.5% in 2008 (from the World Bank's World DataBank). The government's budget, while always in deficit, was strongly supported by the growing economy, strong exports, and development aids. Consequently, the government expanded all forms of infrastructure construction, including in particular those in communes and districts, an attempt widely seen as instrumental for poverty alleviation. This period therefore holds particular interest for studying of a determinant of infrastructure in rural Vietnam.

B. Hometowns in Vietnam

In Vietnam, a person's hometown refers to the origin commune of a person's extended patrilineal family, composed of those who share one's patrilineal ancestors. It is legally defined and figures prominently on every adult's national

identity card (on which there is no information on place of birth). Urban families commonly make sizeable transfers and loans towards extended patrilineal family in their rural hometown (they amount to 25% of household income, based on VHLSS). Patrilineal clans also raise funds for their own activities, usually in the form of ancestral temples and religious ceremonies in the hometown that glorify common patrilineal ancestors (Nguyen and Healy 2006, Hunt 2002). Variation in the strength of local social norms about patrilineal family link is a determinant of such contribution. Those norms take root in Vietnam's Confucian tradition, which is highlighted in the popular saying "one mandarin benefits the whole clan": when an offspring of a clan attains a prestigious position at the royal court, the whole clan draws benefits, usually in terms of favors thanks to his power.

The Vietnamese context offers the opportunity to empirically study officials' favoritism towards their hometowns in the form of new infrastructures. It is unlikely motivated by politics, since hometowns are of negligible political importance. Moreover, because of Vietnam's long wars, most ranking officials were either born far away from their hometown, or have moved away at a young age as part of waves of war refugee migrants. At the time of survey, they and their immediate family all live in large cities away from their rural hometowns. Therefore, an official's link with his hometown is only maintained through his extended patrilineal family. We will examine if this link produces substantially more infrastructure in an official's hometown.

III. The Data

A. *Data collection*

As in most authoritarian countries, data on officials and their family backgrounds in Vietnam are scarce. Available information is scattered and skewed toward top officials, whereas we are concerned with the full population of ranking officials. To avoid potential selection issues, our data collection team

identified, checked, and matched officials from three sources: the CPV's information on all members of its Politburo and Central Committee, the National Assembly's information on all of its members, and the Government's information on central officials starting from the rank of deputy minister, and provincial officials starting from the rank of vice chair of provincial People's Committees.[13] The dataset thus covers exhaustively all ranking political promotions in the country from 2000 to 2011. Since important officials typically hold more than one positions in these organizations, we make sure to match all individuals across the three groups, if necessary by obtaining and verifying additional information from other sources.

We gather information on each official's declared hometown, understood as the commune of patrilineal origin in the Vietnamese legal context. This legally defined information appears on important individual documents, such as identity cards (thus fraud is unheard of). It needs not correspond to one's birthplace. In the very few cases in which the declared home commune no longer exists, we trace the historical names of all communes in the same province for the declared name, and assign a modern commune that best corresponds to the old name. Officials whose hometowns cannot be traced to the commune level are excluded.

Official data on commune budget are unavailable. Fortunately, data on local infrastructures and public goods can be obtained from the Vietnam Household Living Standard Survey (VHLSS, a World Bank-led survey project in Vietnam, part of the Living Standards Measurement Surveys). The survey receives technical support from the World Bank, and is regarded as the most reliable data on living standards in the country. The VHLSS is conducted every two years (2002, 2004, 2006, 2008, and 2010) from a random, representative sample of about 2,200 communes out of about 11,000 communes and wards in the country.

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[13] The dataset was collected from 2009 to 2011, and updated in 2014. Data sources are detailed in the appendix.

Commune characteristics used in our analysis include reported measures of population, geographical zone, rural classification, and the presence of various types of infrastructure in the commune. Measures of average income and expenditure per household are computed from household survey data.

We match each official to his commune of patrilineal origin. Only rural communes are considered, so as to avoid the complexity of urban infrastructure development and association with officials.[14] We further exclude the top four positions in the country, namely the General Secretary of the CPV, the Prime Minister, the President, and the Chairman of the National Assembly, in order to focus on the pervasiveness of favoritism beneath the very top.

This procedure results in a sample of 603 officials out of 1,720 officials in the collected three sources, matched with 503 connected rural communes. These 603 officials hold a total of 950 position by terms, consisting of 17% in the CPV's Central Committee, 16% in the central government, 23% in the provincial government, and 45% in the National Assembly. Apart from the three dropped major cities, all 60 Vietnamese provinces are covered in this sample.

From these matches, we construct our *baseline sample*, in which each observation is a commune in a year for which this commune figures in VHLSS (2002, 2004, 2006, 2008, or 2010). We only include rural communes that are connected to at least one official in this period (henceforth referred to as connected communes) in our baseline sample, which covers 503 unique communes in 1,563 commune by year observations over 2002-2010 (350 unique communes in 1,281 commune by year observations until 2008).

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[14] We exclude wards, the urban equivalence of rural communes, for several reasons. First, the construction and management of urban infrastructures are very different from those in rural communes (e.g. urban schools are built and run by district or city offices), and in practice most wards already have all considered categories of infrastructure. Second, by excluding wards, we rule out the direct economic motive of officials who still live in their hometowns (all officials live in urban areas). Third, urban wards in big cities, especially the capital, could be important to the state's security concerns (e.g. Campante et al 2015), thus a confounding political motive of favoritism. Fourth, family lineages in wards are usually much diluted by huge waves of migration, reducing the relevance of social preferences in our context. Fifth, since the VHLSS oversamples rural areas, we can only match 39 officials' urban home wards with the VHLSS, compared with 503 connected rural home communes.

B. Data and variable description

Table 1 summarizes data patterns. Panel A describes officials in the matched sample as well as the full collected dataset of officials. Given that the VHLSS covers only a random sample of all communes in Vietnam, we can match roughly one third of collected officials to communes surveyed in the VHLSS. This proportion is around 45% for the CPV's Central Committee, 25% for central and provincial governments, and 45% for the National Assembly.

Panel B summarizes our key variables at commune by year level. The average rural commune in Vietnam is small, with population under 10,000, or around 0.01% of the total population, and VND 15,000,000 (~USD 750) in income per capita over our study period. In comparison, our baseline sample of connected communes has slightly higher population and average income. Given potential concern of selection bias in the group of connected communes, our empirical strategy remains conservative insofar as it only focuses on connected communes and aims to estimate the Average Treatment Effect on the Treated.

Our key outcome variable $Infras3yr_{ct}$, *commune infrastructures within 3 years*, is the total number of all infrastructure categories ever present in commune c in survey years t and $t + 2$ (i.e. two consecutive waves of the VHLSS).[15] Since infrastructure construction lag may vary across infrastructure categories, this measure helps capture the full extent of native official promotions' impact. We also use *commune infrastructure within 1 year* in our robustness checks.

The 12 infrastructure types included in our measure can be classified into three groups: productive infrastructures (electricity, clean water supply in wet and dry seasons, irrigation system, marketplace), cultural infrastructures (post office, radio

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[15] For example, if commune c has a total of 5 types of infrastructures that are observed either in 2004 or 2006: marketplace, pre-school, irrigation system, clean water, and radio station, then the value of $Infras3yr_{c,2004}$ is 5. By construction, this measure is available until 2008.

station, cultural center), and education and health infrastructures (pre-, middle-, and high-schools, hospital). Together, they cover all infrastructures surveyed in VHLSS, except for primary school and clinic, which are always present in all baseline communes throughout this period and therefore excluded. As shown in Panel B of Table 1, connected communes in our baseline sample not only have more infrastructures on average than those in the full surveyed rural sample at the beginning of our study period, but also get more infrastructures over the subsequent decade.

Our key explanatory variable $PowerCapital_{c,t-1}$, *commune power capital*, adds up all ranking positions ever held by native officials until year $t-1$.[16] Compared with a measure of only currently held positions by native officials (used in a robustness check), this accumulated measure is likely more accurate in reflecting the extent of a commune's political connections in the context of Vietnam. In some specifications, we further decompose this power capital variable into power capital coming from different branches of the state, by adding up only corresponding positions. Average commune's power capital experiences strong increases in 2004 (driven by the 2002 9th Central Committee, 2004 Central Government, and 2003 11th National Assembly) and in 2010 (driven by the 2009 Central and Provincial Governments and 2008 12th National Assembly). Since our key outcome variable $Infras3yr_{ct}$ is only available up to 2008, the baseline estimate does not make use of the promotions observed in 2010.

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[16] For example, $PowerCapital$ for a commune in 2003 is the accumulated number of ranking positions with term start date until 2003 held by that commune's native officials. In our context, these include positions in the 9th CPV's Central Committee (term started in 2002), 2000 and 2004 Central Governments (terms started in 1998 and 2003 respectively), 2000 Provincial Government (term started in 2000), and 11th National Assembly (term started in 2003).

IV. Testable Hypotheses and Empirical Design

A. Testable predictions

Given the Vietnamese political context, where most ranking officials are not personally involved in district-level budget decisions, favors must be brokered between each official and the local budget allocator. The official is endowed with great political capital thanks to his high rank, and cares about the welfare of his hometown. The budget allocator wants political help from the ranking official, in return for infrastructure investment in the official's hometown.

We will spell out three key testable hypotheses, derived from a formal model available in the online appendix. Under the negotiated deal, the official could influence infrastructures in his hometown. Given little accountability and checks on officials, we first predict testable **Hypothesis I**: hometown favoritism is widespread among officials.

Second, since the negotiation outcome depends on the official's power and the ease to work out a deal with the budget allocator in allocating infrastructure projects, we should find evidence supporting **Hypothesis II**: hometown favoritism depends positively on the official's rank in the authoritarian hierarchy and on the home province's local governance quality.

Third, favoritism should be most present when most valued by the official. If it is primarily motivated by a native official's narrowly targeted preferences towards his hometown, we expect evidence consistent with **Hypothesis III** that favoritism fades out as we move away from the home commune to neighboring non-connected communes or to the home district.[17] Furthermore, it is stronger when local culture puts more value on family ties and support. However, if instead the

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[17] Those are most naturally social preferences towards the hometown and the remote relatives living there, including symbolic preferences of pride in hometown's new infrastructures. We cannot completely rule out the scenario in which hometown relatives serve as intermediaries to funnel benefits directly to the official, although we find it unlikely, given the high level of ranking officials considered in our sample.

motive is mostly potential political support, as commonly observed in the relevant literature but much unrealistic in the authoritarian context of Vietnam, the evidence should reject Hypothesis III.

B. Empirical Design

We first investigate the effect of connected officials on hometown infrastructures in a benchmark linear framework, where the total of infrastructure categories available in a commune within three years is regressed on a measure of the commune's power capital, derived from all ranking officials native to the commune. The sample is an unbalanced panel of all rural matched communes, and each observation represents a commune in a specific year:

$$Infras3yr_{ct} = \beta PowerCapital_{c,t-1} + \gamma X_{ct} + \delta_t + \mu_c + \varepsilon_{ct}. \qquad (1)$$

The indices c and t represent home commune c in survey year t ($t \in \{2002, 2004, 2006, 2008\}$). As described in section III.B, $Infras3yr_{ct}$ is the total number of all infrastructure categories ever available in commune c in survey years t and $t + 2$, and $PowerCapital_{c,t-1}$ counts all ranking positions ever held by each official until year $t - 1$. δ_t and μ_c denote respectively year and commune fixed effects. The vector X_{ct} regroups time-variant observable controls including population size, average income, and dummies for five different geographical zones.

The key parameter β is interpretable as the effect of power capital on the number of available hometown infrastructure categories within three years: $\frac{\partial \mathbf{E}(Infras3yr_{ct}|X_{ct})}{\partial PowerCapital_{c,t-1}} = \beta$. In the presence of commune fixed effects μ_c, β is identified from changes in $Infras3yr_{ct}$ and $PowerCapital_{c,t-1}$, that is, from new promotions of officials from the same commune. Given the lack of data on the size and quality of each infrastructure category, we could only identify

favoritism's impact on new types of infrastructures, not on the improvement of existing types.

In support of a causal interpretation of β, the specification first relies on commune fixed effects μ_c to deal with commune time-invariant omitted unobservable factors that may bias the estimates. For example, a province's wealth and power, or geographical conditions such as distances to large cities and major rivers, may correlate with better infrastructure and also the capacity to produce more high-ranked officials. Year fixed effects δ_t allay concerns about macroeconomic shifts that could affect both new promotions and infrastructure construction. To make correct inferences when the error term ε_{ct} may be serially correlated, we cluster standard errors by commune.

Regarding time-variant factors that may influence both promotions and infrastructures, such as good local economic performances, we note that officials in our sample are not directly responsible for the performances of home communes, as explained in section II. Given their high ranks, their preceding positions must have already been much above the commune level since decades. Therefore, if such time-variant factors are driving the results, we must be able to detect similar effects in neighboring communes in the same province. We thus perform placebo tests of our causal interpretation on neighboring communes matched with connected communes.

The variable $PowerCapital_{c,t-1}$ accumulates all ranking positions ever held by officials from commune c up to year t-1, so the change in $PowerCapital_{c,t-1}$ counts new promotions of officials from commune c, and ignores eventual departure from previous offices. It represents a social capital concept that captures an official's influence in his previous office even after a move or promotion, or even retirement. In the context of Vietnam, the accumulated measure of capital is likely more accurate in reflecting the extent of a commune's political connections

than the current power level of native officials (also used in a robustness check). In one recent case, for instance, a former Minister of Education relinquished that position to become Deputy Prime Minister; however, he still exerts particularly strong influence on the Ministry of Education.

Equation (1) accounts for the timing of infrastructure construction in a simple way, in which all new infrastructures that appear in the following three years (two survey waves) are counted together. We choose this benchmark specification for the simplicity and transparency of its interpretation. In robustness checks, we use two other models with structural constraints on the timing of new infrastructures: a Poisson count model and a Cox proportional hazard model.

First, the number of new infrastructure categories in each commune can be modeled by a Poisson process with incidence rate λ_{ct} over a survey interval of T = 2 years following year t (during which a new infrastructure "arrives" independently at this rate):

$$\lambda_{ct}T = \exp(\beta\Delta PowerCapital_{ct} + \gamma X_{ct} + \delta_t + \mu_P). \qquad (2)$$

The likelihood function for the number of new infrastructure categories in the following T years is given by $\Pr(NewInfras3yr_{ct} = y) = e^{-(\lambda_{ct}T)}(\lambda_{ct}T)^y/y!$, which yields MLE estimates of the parameters $(\beta, \gamma, \delta_t)$. The coefficient β estimates the effect of new promotions on the log incidence rate of new infrastructure categories (so the effect on the incidence-rate ratio of an increase of power capital is $\exp(\beta)$). Because $\mathbf{E}(NewInfras3yr_{ct}|X_{ct}) = \lambda_{ct}T$, so $\beta = \frac{\partial\log\mathbf{E}(NewInfras3yr_{ct}|X_{ct})}{\partial\Delta PowerCapital_{ct}}$, therefore β is also interpreted as the effect on the expected log number of new infrastructures. In the same spirit as the identification in (1), we use changes in infrastructures and changes in power capital (new promotions). We further include province fixed effects μ_P (similar to the inclusion of province fixed trends in the benchmark OLS specification). The Poisson model belongs to a small class of nonlinear models where group fixed effects can be

completely separated from the maximized likelihood function (Cameron and Trivedi, 2013, chapter 9), so there is no longer the problem of incidental parameters, and the fixed effects μ_P need not be estimated as parameters.

Second, we can model the incident of improving infrastructures as a survival process, where the event of "failure" for a commune is defined as an improvement in the overall number of infrastructures. We use a Cox proportional hazard model, under the assumption that changes in covariates affect the hazard function multiplicatively, to write the hazard function $H(t)$ as the product of a baseline, unspecified hazard function $H_0(t)$ and a hazard ratio:

$$H(t|X) = H_0(t)\exp\big(\beta\Delta PowerCapital_{c,t} + \gamma X_{ct} + \delta_t + \mu_P\big). \qquad (3)$$

The parameters $(\beta, \gamma, \delta_t)$ are estimated by maximum of a partial likelihood that needs no information on the baseline hazard function $H_0(t)$. The coefficient β estimates the effect of new promotions on the log hazard of infrastructure improvement (so the effect on the hazard ratio is $\exp(\beta)$). Similar to the Poisson model, we include province fixed effects μ_P. We address the potential problem of incidental parameters by estimating the model as if the data were stratified at province level ($H_0(t)$ is specified as $H_{0,P}(t)$ for different provinces P's), which cancels out μ_P that we do not need to estimate (Chamberlain, 1985).

The Poisson model uses full information in the number of new infrastructures, while the Cox model only uses information in a binary outcome of infrastructure improvement. On the other hand, the Cox model is much more flexible as the baseline hazard function can take any form, as opposed to a fixed constant incidence rate in the Poisson model.[18] Both models require fairly strong structural assumptions on the time process of new infrastructures that are not supported in

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[18] There is a certain link between the two models: If the true hazard rate is constant, then the Cox model should produce similar results to the Poisson count model with only binary outcomes. Appendix Table A1 reports robust estimates from a conditional logit model of infrastructure improvement over fixed intervals as a function of new promotions.

the data.[19] For the sake of simplicity and clarity, we choose the benchmark linear regression model, which has a clear interpretation of the coefficient β, and imposes minimal structure on how power capital may affect infrastructures.

V. Empirical results

This section aims to address the questions that correspond to the hypotheses put forth in Section IV.A: (i) Does favoritism arise in an authoritarian regime? (ii) Who is powerful in the political hierarchy? (iii) What is the motive of favoritism?

A. Does favoritism arise in an authoritarian regime?

Table 2 presents different estimations of the impacts of an official's promotion to a ranking position on infrastructure development in his rural home commune, using the baseline sample of connected communes.

Column (1) shows the benchmark specification that regresses $Infras3yr_{ct}$, *commune infrastructures within 3 years*, o$PowerCapital_{c,t-1}$n , *commune power capital*, as described in section IV.B. Control variables include commune's population and average income, and a full set of commune and year dummies. We find that an additional ranking position in the power capital of a commune increase its sum of infrastructure categoriess by 0.23, statistically significant at 1%. This estimate amounts to 3% of the mean and 15% of the standard deviation of commune infrastructures.[20]

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[19] Since the Poisson model typically encounters overdispersion in the data, we also report in Appendix Table A1 very similar results obtained from a negative binomial model that could better fit the observed dispersion.

[20] We further verify the statistical inferences from this exercise with 1,000 Monte Carlo simulations of column (1)'s specification, in each of which every commune's power capital is drawn randomly from the baseline sample power capital distribution. As expected, the distribution of the simulated estimates of the coefficient on power capital (reported in Appendix Figure A2) is centered around zero, while our baseline estimate of 0.227 falls on the 99.9[th] percentile.

Column (2) uses immediate infrastructures (*commune infrastructures within 1 year*) as the outcome variable. The immediate effect's magnitude is similar to column (1)'s benchmark estimate, but it is less precisely estimated, and only statistically significant at 10%.[22] Column (3) uses current power level, measured by the number of ranking positions that the commune's native officials currently hold, instead of accumulated power capital. The effect is still sizeable and significant, but considerably smaller than power capital's effect found in column (1). This is consistent with section IV.B's consideration of power capital as a social capital concept, whereby an official's personal connections are preserved when he moves or get promoted to a different position.

Figure 1 further shows the effects of new promotions over time, by decomposing the benchmark variable power capital. We use *commune infrastructures within 1 year* as the dependent variable (as in Table 2's column 2). We include explanatory variables that count the number of new promotions of native officials for the years -1, 0, 1, 2 before the surveyed year $NewPromotions_{c,t-s}, s \in \{-1,0,1,2\}$, and the accumulated power capital of 3 years before the surveyed year $PowerCapital_{c,t-3}$, in place of the benchmark $PowerCapital_{c,t-1}$. The coefficients of those variables are reported on Figure 1. Not surprisingly, the impact starts at least one year after a new promotion.

Because of the decomposition $PowerCapital_{c,t-1} = NewPromotions_{c,t-1} + NewPromotions_{c,t-2} + PowerCapital_{c,t-3}$, the average of the coefficients of those three variables (≈ 0.237) is expectedly close to the coefficient in Table 2's column (2). Besides, the variables $NewPromotions_{c,t-s}, s \in \{-1,0\}$ serve as placebo tests, since we do not expect significant impacts of future or

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[22] Alternatively, we apply Kling et al's (2007) method of aggregation of commune infrastructures by using the z-score of each infrastructure instead of a dummy indicating its presence in the commune. The resulting estimate (standard error) is 0.608 (0.199), approximately 15% of the baseline sample standard deviation of the outcome measure, and statistically significant at 1%. We prefer our aggregation without the z-scores for a more transparent interpretation of the effect, and to avoid inflating the role of low-variation infrastructure categories in the aggregated measure.

contemporaneous promotions on today's infrastructure. Indeed, their coefficients are much closer to zero.[23]

Table 2's following columns estimate the effect of changes in power capital on changes in commune infrastructures. Column (4) shows the corresponding OLS regression, controlling for changes in column (1)'s control variables, year dummies, and province fixed effects (equivalent to province-specific trends in the level equation). The effect of 0.19 is slightly smaller than that in column (1), and also statistically significant at 1%.

Column (5) reports estimates from section IV.B's Poisson count model of new infrastructures, including the same set of controls and fixed effects. The coefficient of changes in power capital is 0.20, statistically significant at 1%. It indicates that a single promotion of a native official multiplies the incidence rate of a new category of infrastructure over a 2-year period by $\exp(0.20) = 1.22$. It means an increase of 22% of new infrastructures (see section IV.B), equivalent to 0.18 more new infrastructures (the sample mean of new infrastructures is 0.81). Hence, despite the Poisson model's strong structural restrictions, the effect does not substantially deviate from the benchmark effect in column (1) (even though a comparison between these two interpretations is not entirely rigorous).

In column (6), we estimate section IV.B's Cox proportional hazard model of the incidence of infrastructure improvement, controlling for the same set of controls and fixed effects. The coefficient of changes in power capital is 0.22, statistically significant at 5%. A single promotion of a native official is thus estimated to multiply the hazard rate of infrastructure improvement by $\exp(0.22) = 1.25$. While the effect's magnitude is not readily comparable with the other specifications', column (6)'s finding confirms that native officials' promotion

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[23] The estimated coefficients are not statistically significant, as precision is dampened by the inclusion of many explanatory variables with low predictive power. The full regression is reported in Appendix Table A1.

leads to new infrastructures, even when we impose the proportional hazard restriction and only use limited variation in the outcome (only the incidence, not the magnitude of improved infrastructures).

In Table 3 we verify that Table 2's findings are robust to various sensitivity checks. These checks include excluding 2002 as only 4 out of 12 infrastructures were surveyed in that year (column (1)),[24] splitting the baseline sample into less and more developed communes (columns (2) and (3)), using the full sample of all surveyed rural communes that also includes non-connected communes (column (4)), and using different fixed effects and clustering levels (columns (5) to (7)). The estimates are of comparable magnitude to Table 2's findings, and highly statistically significant across all specifications. In addition, columns (2) and (3) suggest that the effect is larger among less developed communes (classified by the number of infrastructures observed in 2004), as they have more room for infrastructure development.

Overall, Tables 2 and 3 show that a commune's increase in power capital due to native officials' promotions is strongly associated with more infrastructure categories in subsequent years. This finding is robust across different measures of infrastructures and power, and different econometric specifications. We will build on the benchmark specification from Table 2's column (1) in the rest of the paper, as its estimate is most interpretable, and it requires minimal assumptions.

Table 4 shows the effects of commune power capital on different types of infrastructures and other outcomes. Columns (1) to (3) show the effects on infrastructures for production (electricity, water in wet and dry seasons, market, and irrigation system), cultural activities (post office, radio station, and cultural center), and education and health (pre-, middle-, high-schools, and hospital). Each

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[24] Our baseline infrastructure measure (i.e. sum of infrastructures observed in at least one of the subsequent two surveys after that year in that commune) is not greatly affected by the fact that only 4 out of 12 infrastructures were surveyed in 2002, as all 12 infrastructures were included in 2004 survey.

outcome variable is constructed similarly to $Infras3yr_{ct}$ over the group of relevant infrastructures. The effects on productive and cultural infrastructures are large and statistically significant, as both estimates amount to 4% of the baseline sample mean and 12% of the baseline standard deviation of the respective infrastructure variables. The effect on education and health infrastructures is limited in both magnitude and statistical significance.[25] High maintenance cost, especially in terms of teachers or health workers, may explain the low effect, even though we cannot rule out an explanation by local preferences.

Columns (4) to (6) show the effects of power capital on log commune average income and expenditure per capita, and log population in the subsequent survey year. All three estimates are small in magnitude and not statistically significant, suggesting that native official promotion does not have direct effects on home commune's economic outcomes within the relatively short 3-year window. It is thus unlikely that new infrastructure results from a stronger local economy.[26]

The results presented in Tables 2 to 4 are consistent with the claim of widespread favoritism among Vietnamese officials, shown in the form of newly bestowed infrastructure projects in their home communes. Given that our sample does not include top leaders, this finding provides support for Hypothesis I, which states that non-top officials in authoritarian regimes also exercise favoritism.

A common alternative explanation found in most studies of favoritism and pork-barrel politics (e.g. Kramon and Posner 2012) is that a native official has better information on his home commune and helps budget allocators direct more resources to that commune to improve efficiency. In our context, this explanation is inconsistent with several details. First, better information should have been

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[25] The estimated effect on education and health infrastructures amounts to only 0.7% of the baseline sample mean and 3% of the baseline standard deviation of the respective infrastructure variable.

[26] This is not enough to ascertain that promoted native officials do not care about the local economy, because it may take time for the newly constructed infrastructures to produce an effect.

shared even before the promotion, since all studied officials (especially in the Government and the CPV) had already held notable positions that allowed for convenient communication with district budget allocators. Second, by the time of promotion, most officials had long since left their rural hometowns, so their information on hometowns is unlikely to be new to budget allocators in district authorities. Third, the included infrastructures are considered necessary in every commune in the state's long-run development plans, so further knowledge of local conditions is unlikely to affect the decision to undertake such constructions. Fourth, even if an official had better information on which infrastructure a commune needs most, it would only result in shifting between different types of infrastructure, and would not produce the positive effect on the measured total number of infrastructure categories.

B. Who has the power to give favors?

Next we investigate the pervasiveness and degree of favoritism across different groups of Vietnamese officials, including members of the National Assembly (NA), Central and Provincial Governments, and the CPV's Central Committee. While the literature on favoritism in autocratic regimes has mostly addressed top leaders with both political interest and power to favor certain groups (e.g. Burgess et al 2015), our sample also covers a large number of mid-level officials. This investigation helps shed light on the power structure of different groups of Vietnamese political elites.

Table 5's Panel A compares the effect of power capital in different groups of officials. In democracies, the politics of earmarking and pork barrel concentrates in the hands of lawmakers (Weingast, Shepsle, and Johnsen 1981, Bickers and Stein 2000). In contrast, in authoritarian Vietnam, estimates in columns (1) and (2) indicate that an NA position has very little power compared to other positions. The point estimate of NA power capital's effect is not statistically different from

zero, and is only one third of that of non-NA power capital. The difference between the two estimates is statistically significant at 5%. This finding is consistent with the observation that a regular member of the NA without another ranking position in the executive branch or CPV can hardly use his parliamentary membership as leverage for any real benefits, as the CPV and Central Government make major decisions (Malesky, Schuler and Tran 2012).

If the NA has very little power to allocate the budget, then which branch does? Columns (3) and (4) compare the effect of power capital from the executive branch (including Central and Provincial Governments) to other branches. A promotion in the executive branch brings 0.47 additional infrastructure categories to the home commune (statistically significant at 1%), almost five times the effect of a promotion to non-executive branches. The strong effect of power capital from executive branch positions highlights the considerable political power of Central Government members to affect public decisions beyond their jurisdiction. That would be consistent with an informal channel of influence through exchanges of personal favors (between ranking officials and local budget allocators). A simple model of this informal channel is discussed in the appendix.

Column (5) examines the effect of a promotion to a middle-ranking position in the executive branch or CPV, which include all positions in our sample below the rank of minister or equivalent (data construction is detailed in the appendix). A promotion to a middle-ranking position brings 0.35 new infrastructure categories to the home commune. The effect is statistically significant at 1%, and significantly greater than that of ordinary non-chaired positions in the NA (column (6)). Favoritism is thus clearly not limited to only top-level officials, as shown in the existing literature, but also pervasive in the midrange of Vietnamese politics, especially within the executive branch and the CPV.

An alternative way to compare the influences of different groups of political elites is to run "horserace" regressions, reported in Table 5's Panel B. Column (1) includes in one regression three power capital variables separately for: the CPV's Central Committee, the NA, and the executive branch. The result is intriguing: While its one-party role is anchored in the constitution, the CPV's influence is much smaller than the executive branch's, and is not significantly different from zero. The same pattern holds when we break infrastructures into three groups: productive, cultural and education and health (columns (2) to (4)). This shows that being a member of the high-profile CPV's Central Committee still does not help one's hometown much, unless one holds an additional executive position.

The remaining columns in Panel B show a surprising difference in the influences of different ranks of Vietnamese political elites. Columns (5) to (8) show that only middle-ranking positions in the executive branch or CPV have positive and statistically significant effects on hometown infrastructures. Middle-ranking positions in the NA have positive but insignificant effects. Most intriguingly, top-ranking positions have negative although statistically insignificant effects on hometown infrastructures. A speculative explanation of this pattern is that while low-level promotions (e.g. non-chaired positions in the NA) do not yield enough power to exercise hometown favoritism, promotions to top-ranking positions do not exert much effect on hometown infrastructure because those hometowns have already obtained sufficient infrastructures by that time. The fact that we only detect favoritism among middle-ranking officials does not rule out other potential channels top officials can favor their hometowns.

Together, the results from Table 5 show that hometown favoritism is a phenomenon widespread across different groups and ranks of Vietnamese officials, consistent with Hypothesis I. The magnitude of favoritism varies substantially across different ranks and divisions within the government,

consistent with Hypothesis II. In particular, we find that even middle-ranking officials in the executive branch or CPV are more powerful than members of the legislative National Assembly. This pattern underlines the importance of informal authority and the inconsequence of legislative bodies in less democratic countries.

C. What is the motive of hometown favoritism?

In existing studies of political favoritism, the identification of the motive of favoritism represents a formidable challenge. Officials may favor friends and relatives because of their social preferences for their kin, or strategic calculations in building and profiting from a political base. For instance, pork-barrel politics are mostly explained in terms of quid pro quo rewards to political constituencies, and ethnic favoritism by dictators arguably serves to build a coalition of support (Padró i Miquel 2007). In our context, we assess the relative importance of these two motives by comparing favoritism at the commune and the district levels.

Political versus non-political motives: As argued in section IV.A, if favoritism is motivated principally by social preferences towards the home commune, it should be narrowly targeted, and little effect should be detected outside the home commune. In contrast, if political support is what motivates favoritism, it should be reinforced at the district level. We report tests for the two motives in Table 6.

Addressing narrow targeting, columns (1) to (6) use a sample of matched pairs between a connected home commune and its most similar rural non-connected commune in the same home district, defined by the shortest Mahalanobis distance based on predetermined variables.[31] In each column, an infrastructure outcome of the matched non-connected commune is regressed on the home commune's power capital, controlling for the pair fixed effects. Column (1) shows that a promotion

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[31] The Mahalanobis distance between two communes in the same district is calculated based on their geographical distance, their average income per capita and population in 2002, and their level of infrastructure development in 2004.

of a native official from one commune has a negative, statistically insignificant effect, on infrastructure development of similar communes in the same home district. The estimate remains similar even when we focus only on promotions to positions with the strongest effects on home commune's infrastructures, namely executive branch or middle-ranking positions, as shown in columns (2) and (3). The estimate is close to zero for categories of cultural infrastructures (column (5)) and education and health infrastructures (column (6)), while for productive infrastructure it is slightly larger in magnitude, but still not statistically significant (column (4)).

When those estimates are compared with the corresponding effects in home communes, the difference is always large and strongly significant. They clearly show that favoritism is narrowly targeted towards home communes, not similar communes close by. The negative effects in the matched communes may hint that home communes benefit from favoritism at the expense of their neighbors, an effect in line with a fixed total district budget. Given that all estimates are not significant, this interpretation is inconclusive.

Going further, columns (7) and (8) explore potential favoritism beyond connected communes in a sample of connected districts.[32] Average and total infrastructure outcomes (computed among non-connected communes) are respectively regressed on the home district's power capital (total power capital of all of its communes). Both estimates are close to zero and not statistically significant, thus not consistent with the motive of district political support.

Overall, the results in Table 6 suggest that the observed favoritism is narrowly targeted to home communes. They support Hypothesis III that favoritism is driven by native officials' social preferences towards their home communes, and unlikely by political motives.

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[32] 415 out of 656 districts in Vietnam are connected to at least one official in our study period.

Family values: We further investigate whether favoritism is associated with local culture's stress on patrilineal duties and altruism towards the family. If officials' favoritism is chiefly motivated by their social preferences towards their patrilineal origin, we expect higher levels of favoritism in areas where the local culture puts more emphasis on these values. We use the ratio of domestic remittances and worship expenditure over household income in 2002, averaged over surveyed households, as a proxy for family values by district.[35]

Columns (1) and (2) of Table 7 apply the benchmark regression on subsamples of communes with strong and weak family values, split at the median of the measure. The effect of power capital on infrastructure development in communes with strong family values is substantially larger than the benchmark (0.36 versus 0.23) and statistically significant at 1%, while such effect in weak family value communes is significantly smaller (difference significant at 5%), and not statistically distinguishable from zero. This evidence suggests that the findings on favoritism are obtained from communes with stronger norms of family duties.

To further explore the heterogeneity of favoritism by family values, we plot our benchmark measure of favoritism, namely the regression coefficient of hometown infrastructures on promotion, as a function of family values (in percentile) in Figure 2's first graph.[36] The extent of favoritism appears robustly increasing in family values, until it stabilizes among the top quartile of family values.

Economic conditions: By focusing on rural communes, we have ruled out the possibility that some officials still live in their home communes and draw direct benefits from new infrastructure. We now explore whether favoritism helps an

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[35] Below the district level, a measure of family values by commune would take up too much noise.

[36] As detailed in the appendix, Figure 2's graphs are estimated semi-parametrically: the estimate at each percentile of the X axis variable is obtained from the benchmark regression from Table 2 weighted by a kernel function at that point.

official make a long-term investment, eventually for retirement back in his hometown, or if it acts as a transfer towards his hometown and extended family there.[37] In the first case, the effect should be stronger among richer hometowns, since a retired ranking official would unlikely leave a big city life where his family has been enjoying much higher living standards to a backward rural commune with poor basic infrastructures. In the second case, favoritism should be stronger for poor hometowns.

Columns (3) and (4) in Table 7 report that the effect of power capital on commune infrastructures is substantially larger in poorer communes than in richer communes (0.27 versus 0.15, sample split at median income per capita in 2002). Although the difference between them is not statistically significant, only the estimate among poorer communes is statistically significant at 5%. The pattern is further confirmed in Figure 2's second graph, which shows that favoritism is relatively stable among below-median-income communes, but quickly declines at higher levels of income per capita. The evidence suggests that favoritism likely acts as transfers towards a small group of population with some connections to the official as prescribed by local norms.

Local governance: We now investigate how the extent of favoritism varies by the difficulty to implement it through informal channels within Vietnam's administrative system. As discussed previously, most ranking officials do not have any hierarchical authorities over budget allocation by districts towards their home communes, so favoritism is probably brokered via exchanges of favor. Strong local governance may act as a barrier against this mechanism. We construct a measure of local governance quality based that aggregates relevant questions included in the Vietnam Provincial Competitiveness Indices 2006, a set

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[37] Even when favoritism correlates with higher family values, we cannot determine whether a promoted official acts out of pure altruism as prosocial preferences towards his hometown and his extended family there, or he has selfish symbolic preferences for gratitude, recognition, or admiration from his hometown.

of indices of industries' governance perceptions that has been systematically constructed with the help from the UNDP since 2006 (see details in Malesky 2006 and subsequent reports). Details of the measure's construction are described in the appendix. A higher local governance quality score indicates less corrupted and more transparent local governance.

Columns (5) and (6) show that favoritism towards hometown infrastructure is only detected in the subsample of below-median local governance. In this subsample, the effect is 0.34, statistically significant at 1%, while in the subsample of high local governance quality it is only 0.08, and not significant. This pattern is also visible in Figure 2's last graph, where the favoritism effect is steadily decreasing in the quality of local governance. These results suggest that hometown favoritism is rampant under weak local governance.

In sum, Table 6 shows that favors are narrowly targeted, and Table 7 and Figure 2 associate hometown favoritism with stronger family values, lower income, and weaker governance. These patterns are consistent with the view that hometown favoritism is likely motivated by social and cultural preferences, rather than by political calculations.

VI. Concluding Remarks

In this paper, we find robust evidence of widespread hometown favoritism in Vietnam, as a hometowns receives on average 0.23 new infrastructure categories within 3 years following a native official's promotion to high office. While middle-ranking officials, especially in the executive branch, widely exercise favoritism, non-chaired members of the legislative National Assembly do not. This pattern reveals the power structure within an authoritarian regime, in stark contrast with common findings in distributive politics in democracies (Golden and Min 2013). Because officials without direct authority over commune budgets can direct resources to their home commune, favoritism is likely engineered through

informal influence and favor trading with budget authorities. In support of this interpretation, communes in provinces with worse local governance tend to reap more benefits from favoritism.

We find that officials target favors narrowly to their small home communes instead of distributing them over their home districts. In Vietnam, the potential political support of a commune's population is negligible to an official's career. The findings thus suggest that hometown favoritism is unlikely motivated by political aims, as commonly considered in the existing literature. Instead, we suggest an explanation based on officials' social preferences towards hometowns, supported by the evidence of stronger hometown favoritism found in areas with stronger family values. It remains an open question whether social preferences or strategic behaviors are more important in explaining favoritism across the world.

The important question of efficiency has been left out in this paper, as it is in most related studies. It is not exactly clear how favoritism affects the allocative efficiency of public resources. Apart from the intuitive interpretation that it could cause serious misallocations of public resources, one might also speculate that officials possess better information about their home communes and can help direct public resources to more efficient use there. This information channel presents a formidable challenge to the literature on favoritism and patronage politics, and remains an interesting avenue for future research.

In our study, it is unlikely that favoritism leads to a more efficient use of resources. Even if promoted officials know their communes' needs, it is unlikely that they have enough of an information advantage in comparison with district budget authorities, in order to produce more efficient allocations. Besides, were it to exist, their information advantage should have materialized long before the promotion, and should have spilled over to neighboring communes; both of which are not supported by our empirical results. However, we remain cautious in making claims about efficiency.

Based on standard economic theory, marginal incentives for corruption for personal gains should diminish as office holders become richer and their marginal utility smaller. It implies that in the long run, growth and stable politics should automatically reduce corruption rates. This paper's results raise some doubts about this view. Because of their willingness to abuse power to channel public resources to social connections, high-ranking officials may maintain an appetite for corruption far beyond their own consumption. Without proper transparency on public officials' relevant social connections, even fast-growing economies under autocracy would find it hard to combat corruption.

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Table 1. Descriptive statistics

Panel A. Ranking officials

Official group/subgroup	Term Start year	Term End year	Baseline sample (officials with surveyed home communes) Number of position x term's		Number of unique officials		Number of communes		Whole population of ranking officials 2000-2010 Number of position x term's		Number of unique officials		Number of communes	
Central Committee			159	17%	117	19%	112	22%	335	13%	255	15%	243	18%
Central Committee 9th	2002	2006	60	6%	60	10%	59	12%	148	6%	148	9%	146	11%
Central Committee 10th	2007	2011	99	10%	99	16%	94	19%	187	7%	187	11%	178	14%
Central Government			148	16%	101	17%	96	19%	487	19%	361	21%	290	22%
Government from 2000 yearbook	1998	2002	30	3%	30	5%	30	6%	128	5%	128	7%	102	8%
Government from 2004 yearbook	2003	2007	61	6%	61	10%	60	12%	188	7%	188	11%	173	13%
Government from 2009 yearbook	2008	2011	57	6%	57	9%	57	11%	171	7%	171	10%	162	12%
Provincial Government			215	23%	140	23%	131	26%	811	31%	593	34%	488	37%
Government from 2000 yearbook	2000	2003	51	5%	51	8%	51	10%	249	10%	249	14%	190	14%
Government from 2004 yearbook	2004	2008	84	9%	84	14%	81	16%	265	10%	265	15%	253	19%
Government from 2009 yearbook	2009	2012	80	8%	80	13%	77	15%	297	11%	297	17%	278	21%
National Assembly			428	45%	376	62%	333	66%	955	37%	844	49%	755	57%
National Assembly 11th	2003	2007	220	23%	220	36%	207	41%	499	19%	499	29%	468	36%
National Assembly 12th	2008	2011	208	22%	208	34%	198	39%	456	18%	456	27%	438	33%
Total			**950**	100%	**603**	100%	**503**	100%	**2,588**	100%	**1,720**	100%	**1,318**	100%

Panel B. Communes

Commune statistics	Baseline sample (rural communes with native officials)						Whole VHLSS rural commune population					
	2002	2004	2006	2008	2010	**Overall**	2002	2004	2006	2008	2010	**Overall**
Sample coverage												
Number of communes	316	327	327	311	282	**503**	2,311	2,261	2,279	2,219	2,166	**4,065**
Number of districts	199	208	208	198	198	**272**	583	573	575	582	571	**656**
Number of provinces	55	59	59	57	57	**63**	61	64	64	64	64	**64**
Commune statistics												
Average population (people)	9,779	9,665	9,644	9,706	10,217	**9,789**	9,271	8,625	8,643	8,830	9,024	**8,878**
Average annual income per capita ('000 VND)	4,849	5,216	6,871	10,294	15,099	**8,301**	4,102	5,190	6,888	10,575	14,846	**8,272**
% of communes with poverty classification	12.97	13.50	14.07	12.54	10.28	**12.74**	18.95	20.98	19.45	18.03	20.64	**19.6**
Average commune infrastructures (over 12 categories)												
within 3 years	6.74	7.35	7.48	7.51	-	**7.28**	6.54	7.11	7.23	7.20	-	**7.03**
only productive infrastructures	2.58	2.89	2.93	3.06	-	**2.87**	2.46	2.72	2.75	2.80	-	**2.69**
only cultural infrastructures	1.99	2.24	2.33	2.28	-	**2.22**	1.94	2.21	2.27	2.22	-	**2.17**
only education & health infrastructures	2.17	2.21	2.21	2.17	-	**2.19**	2.14	2.18	2.20	2.18	-	**2.17**
within 1 year	-	6.60	6.89	6.97	8.01	**7.09**	-	6.37	6.60	6.76	7.52	**6.80**
Average commune power capital until the year before	0.18	0.82	1.02	1.24	1.89	**1.01**	0.03	0.13	0.17	0.19	0.27	**0.16**
from Central Committee positions	0.00	0.12	0.12	0.35	0.28	**0.17**	0.00	0.02	0.02	0.05	0.04	**0.02**
from Central Government positions	0.07	0.20	0.20	0.20	0.29	**0.19**	0.01	0.03	0.03	0.03	0.04	**0.03**
from Provincial Government positions	0.11	0.11	0.31	0.31	0.43	**0.25**	0.02	0.02	0.06	0.06	0.08	**0.05**
from National Assembly positions	0.00	0.39	0.39	0.39	0.89	**0.40**	0.00	0.06	0.06	0.06	0.12	**0.06**

Note: *Commune infrastructures within 3 years* is the total number of all infrastructure categories present in that commune in that year's survey or the following survey. Productive infrastructures include electricity, clean water supply in dry season, clean water supply in wet season, irrigation system, and marketplace (5 categories). Cultural infrastructures include post office, radio station, and cultural center (3 categories). Education and health infrastructures include pre-school, middle school, high school, and hospital (4 categories). *Commune infrastructures within 1 year* is the sum of infrastructures observed in that commune in the first subsequent survey on or after that year. *Commune power capital* adds up all ranking positions ever held by native officials until the year before.

Table 2. Main results: Increased commune's power capital improves infrastructures

	(1)	(2)	(3)	(4)	(5)	(6)
Specification	OLS in level equation			OLS in difference equation	Poisson model	Cox model
Dependent variable	Total infrastructures within 3 years	Total infrastructures within 1 year	Total infrastructures within 3 years	Change in total infrastructures	Total new infrastructures within 3 years	Infrastructure improvement
Power capital	0.227 [0.0746]***	0.224 [0.126]*				
Current power level			0.137 [0.0796]*			
Change in power capital				0.187 [0.0667]***	0.200 [0.0641]***	0.224 [0.102]**
Effect on incidence rate					1.22	1.25
Commune controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Province & Year	Province & Year	Province & Year
Cluster	Commune	Commune	Commune	Commune	Commune	Commune
Observations	1,237	941	1,237	898	730	326
R-squared	0.760	0.756	0.757	0.136		

Note: This table relates native officials' promotion to a home commune's new infrastructure. Each observation is a connected commune in a year (2002, 2004, 2006, or 2008 for columns (1) to (3) and 2004, 2006, or 2008 for columns (4) to (6)). Controls include commune's log average income per capita, log population, and geographical zone. Columns (1) to (3) report OLS regressions in level, including commune and year fixed effects. Infrastructure outcomes are measured within 3 years for column (1) and (3), and 1 year for column (2). Columns (1) and (2) use total positions accumulated by native officials (i.e. power capital), and column (3) uses the number of current positions held by native officials. Columns (4) to (6) relate different changes in infrastructure outcomes to changes in power capital, controlling for changes in commune controls, and province and year fixed effects. Column (4) reports an OLS specification, column (5) shows a Poisson model of new infrastructure within 1 year, and column (6) reports a Cox proportional hazard model of the incidence of infrastructure improvement. The multiplicative effects on incidence rate in columns (5) and (6) are exponentials of the corresponding coefficients. Robust standard errors in brackets are clustered at commune level. Statistical significance is denoted by *** (p < 1%), ** (p < 5%), and * (p < 10%).

Table 3. Results are robust to alternative specifications

	Dependent variable: Total infrastructures within 3 years						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Power capital	0.358	0.349	0.193	0.137	0.187	0.216	0.164
	[0.135]***	[0.116]***	[0.0942]**	[0.0613]**	[0.0617]***	[0.0963]**	[0.0795]**
Commune controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Province x Year	District x Year	Commune & Year
Trends							Province trends
Cluster	Commune	Commune	Commune	Commune	Province	District	Commune
Sample	Baseline; excluding 2002	Baseline; less developed	Baseline; more developed	Full sample	Baseline	Baseline	Baseline
Observations	945	525	712	8,463	1,237	1,237	1,237
R-squared	0.800	0.724	0.649	0.762	0.440	0.802	0.788

Note: This table relates native officials' promotion to a home commune's new infrastructure. Each observation is a commune in a year (2002, 2004, 2006, or 2008 for columns (2) to (7) and 2004, 2006, or 2008 for columns (1), (8), and (9)). Controls include commune's log average income per capita, log population, and geographical zone. All columns report OLS regressions in level, with infrastructure outcomes measured within 3 years and power capital measured as total positions accumulated by native officials. Columns (1) to (4) explore using different samples, with commune and year fixed effects. Column (1) excludes 2002 from the baseline sample. Columns (2) to (3) split the baseline sample into subsamples of communes with less or more than 6 categories of infrastructures observed in 2004. Column (4) uses the full sample of all surveyed rural communes that also includes non-connected communes. Columns (5) to (7) explores different fixed effects, including province and year fixed effects in column (5), district and year fixed effects in column (6), and commune and year fixed effects with province trends in column (7). Robust standard errors in brackets are clustered at commune level unless indicated otherwise. Statistical significance is denoted by *** (p < 1%), ** (p < 5%), and * (p < 10%).

Table 4. Effects of increased power capital on different outcomes

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Productive infrastructures within 3 years	Cultural infrastructures within 3 years	Education & health infrastructures within 3 years	Log average income within 3 years	Log average expenditure within 3 years	Log population within 3 years
Power capital	0.125	0.0801	0.0163	-0.0111	-0.0110	0.0104
	[0.0548]**	[0.0469]*	[0.0236]	[0.0344]	[0.0274]	[0.0122]
Commune controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year
Cluster	Commune	Commune	Commune	Commune	Commune	Commune
Observations	1,239	1,239	1,242	1,023	1,023	1,012
R-squared	0.694	0.736	0.810	0.764	0.783	0.973

Note: This table relates native officials' promotion to a home commune's new infrastructure in different groups, and other commune characteristics. Each observation is a connected commune in a year (2002, 2004, 2006, or 2008). Controls include commune's log average income per capita, log population, and geographical zone, with commune and year fixed effects. All columns report OLS regressions on power capital measured as total positions accumulated by native officials. Different infrastructure outcomes in columns (1) to (3) are measured within 3 years. Productive infrastructures include electricity, clean water supply in dry season, clean water supply in wet season, irrigation system, and marketplace (5 categories). Cultural infrastructures include post office, radio station, and cultural center (3 categories). Education and health infrastructures include pre-school, middle school, high school, and hospital (4 categories). Commune characteristics in columns (4) to (6) are measured in the first subsequent survey. Robust standard errors in brackets are clustered at commune level unless indicated otherwise. Statistical significance is denoted by *** (p < 1%), ** (p < 5%), and * (p < 10%).

Table 5. Impacts on infrastructures across different types of positions

Panel A: Main results

Source of power capital	Dependent variable: Total infrastructures within 3 years					
	(1)	(2)	(3)	(4)	(5)	(6)
	National Assembly positions	Non-National Assembly positions	Executive branch positions	Non-executive branch positions	Executive branch & CPV middle-ranking positions	National Assembly middle-ranking positions
Power capital	0.0307	**0.309**	**0.471**	0.100	**0.348**	0.0314
	[0.135]	[0.0948]***	[0.133]***	[0.0930]	[0.0944]***	[0.135]
p-value of difference	0.038**		0.010***		0.025**	
Commune controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year
Cluster	Commune	Commune	Commune	Commune	Commune	Commune
Observations	1,237	1,237	1,237	1,237	1,237	1,237
R-squared	0.756	0.761	0.762	0.756	0.762	0.756

Panel B: Comparison between different types of positions

Dependent variable: Infrastructures within 3 years	(1) Total	(2) Productive	(3) Cultural	(4) Education & health	(5) Total	(6) Productive	(7) Cultural	(8) Education & health
Power capital from								
CPV's Central Committee	0.154	0.109	0.0125	0.0237				
	[0.150]	[0.109]	[0.0690]	[0.0448]				
National Assembly	0.0636	0.00208	0.0761	-0.00764				
	[0.128]	[0.0924]	[0.0899]	[0.0454]				
Executive branch	**0.471**	**0.260**	**0.171**	0.0287				
	[0.135]***	[0.0886]***	[0.0830]**	[0.0359]				
Top-ranking positions					-0.0887	-0.0199	-0.118	0.0261
					[0.322]	[0.259]	[0.135]	[0.103]
Executive branch & CPV middle-ranking positions					**0.352**	**0.204**	**0.112**	0.0275
					[0.0943]***	[0.0668]***	[0.0529]**	[0.0258]
National Assembly middle-ranking positions					0.0770	0.0107	0.0862	-0.0116
					[0.131]	[0.0938]	[0.0918]	[0.0445]
Commune controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year
Cluster	Commune	Commune	Commune	Commune	Commune	Commune	Commune	Commune
Observations	1,237	1,239	1,239	1,242	1,237	1,239	1,239	1,242
R-squared	0.762	0.696	0.738	0.810	0.762	0.696	0.738	0.810

Note: This table relates native officials' promotion to a home commune's new infrastructure in different groups, and other commune characteristics. Each observation is a connected commune in a year (2002, 2004, 2006, or 2008). Controls include commune's log average income per capita, log population, and geographical zone, with commune and year fixed effects. All columns report OLS regressions in level, with infrastructure outcomes measured within 3 years and power capital measured as total positions accumulated by native officials. Panel A reports benchmark regression results using power capital accumulated by native officials in different government branches, including National Assembly and non-National Assembly positions (columns (1) and (2)), executive branch (i.e. central and provincial governments) and non-executive branch positions (columns (3) and (4)), middle-ranking positions in the executive branch and CPV (i.e. deputy ministers, provincial government, and ordinary non-Politburo non-chaired members of the CPV's Central Committee) (column (5)), and middle-ranking positions in the National Assembly (i.e. ordinary non-chaired members) (column (6)). Differences of coefficients are tested against zero using Seemingly Unrelated Regressions. In Panel B, columns (1) to (4) report "horserace" regression results among power capital accumulated by native officials in different government branches (i.e. CPV's Central Committee, National Assembly, and executive branch). Columns (5) to (8) of Panel B report "horserace" regression results among power capital accumulated by native officials of different rankings (i.e. top-ranking positions, middle-ranking positions in the executive branch or CPV, and middle-ranking positions in the National Assembly). Robust standard errors in brackets are clustered at commune level. Statistical significance is denoted by *** (p < 1%), ** (p < 5%), and * (p < 10%).

Table 6. Increased commune power capital does not affect infrastructures in neighboring communes

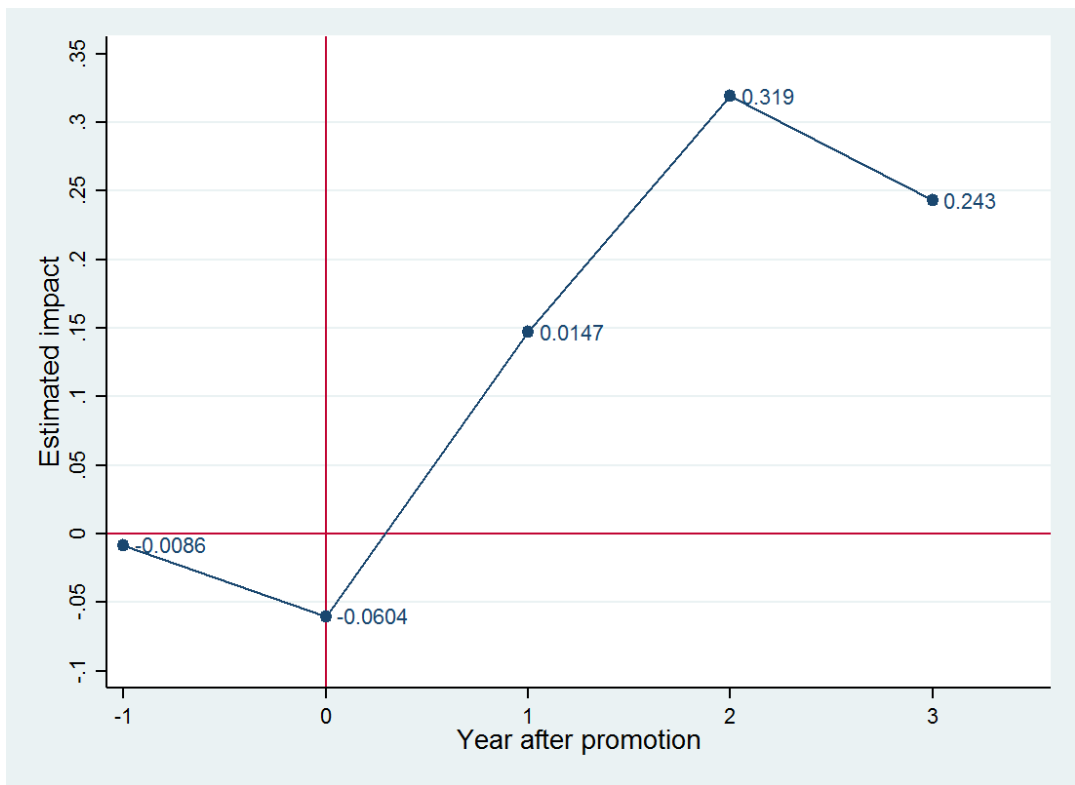| Dependent variable: Infrastructures within 3 years	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Matched commune's infrastructures						Home district's infrastructures	
	Total			Productive	Cultural	Education & health	Non-connected commune average	Non-connected commune total
Source of power capital	All positions	Executive branch	Middle-ranking	All positions	All positions	All positions	All positions	All positions
Home commune's power capital	-0.0292 [0.0668]	-0.0220 [0.120]	-0.0446 [0.0904]	-0.0378 [0.0425]	0.00397 [0.0417]	0.00349 [0.0177]		
Home district's power capital							0.00131 [0.0256]	0.00729 [0.0951]
Commune/district controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune pair & Year	Commune pair & Year	Commune pair & Year	Commune pair & Year	Commune pair & Year	Commune pair & Year	District & Year	District & Year
Cluster	Commune	Commune	Commune	Commune	Commune	Commune	District	District
Observations	1,200	1,200	1,200	1,200	1,201	1,201	1,057	1,057
R-squared	0.709	0.709	0.709	0.686	0.712	0.772	0.862	0.983
Corresponding baseline estimate	0.227 [0.0746]***	0.471 [0.133]***	0.348 [0.0944]***	0.125 [0.0548]**	0.0801 [0.0469]*	0.0163 [0.0236]		
p-value of difference vs. baseline estimate	**0.0064***	**0.0022***	**0.0010***	**0.0116**	0.2000	0.6136		

Note: This table examines the effect of native officials' promotions on infrastructure construction in home district. Controls include commune's or district's log average income per capita, log population, and geographical zone, with commune and year fixed effects. All columns report OLS regressions in level, with infrastructure outcomes measured within 3 years and power capital measured as total positions accumulated by native officials. Columns (1) to (6) consider pairwise matches between a connected home commune and its most similar rural non-connected commune in the same home district, defined by the shortest Mahalanobis distance based on predetermined variables (see text for details). Matched commune's infrastructure outcomes are regressed on home commune's power capital, controlling for commune-pair fixed effects and year fixed effects. Differences of coefficients are tested against zero using Seemingly Unrelated Regressions. In columns (7) and (8), each observation is a connected district in a year. Power capital is the total power capital of all communes in the district (surveyed or not), and infrastructure outcomes are measured as the average or total infrastructures among the districts' surveyed non-connected rural communes. District and year fixed-effects are included. Robust standard errors in brackets are clustered at commune or district level as indicated. Statistical significance is denoted by *** (p < 1%), ** (p < 5%), and * (p < 10%).

Table 7. Effects on infrastructures are different by income, traditional value, and governance

| Sample	Dependent variable: Total infrastructures within 3 years					
	(1)	(2)	(3)	(4)	(5)	(6)
	By family value		By average income per capita		By local governance quality	
	Stronger value districts	Weaker value districts	Poorer communes	Richer communes	Higher local governance quality provinces	Lower local governance quality provinces
Power capital	**0.364** [0.107]***	0.0752 [0.0975]	**0.274** [0.112]**	0.146 [0.0991]	0.0837 [0.0982]	**0.340** [0.0944]***
Difference of coefficients	**0.289** [0.145]**		0.129 [0.149]		**-0.256** [0.136]*	
Commune controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year	Commune & Year
Cluster	Commune	Commune	Commune	Commune	Commune	Commune
Observations	600	613	589	579	608	629
R-squared	0.742	0.778	0.773	0.742	0.737	0.780

Note: This table relates native officials' promotion to a home commune's new infrastructure across different subsamples of communes. Each observation is a connected commune in a year (2002, 2004, 2006, or 2008). Controls include commune's log average income per capita, log population, and geographical zone, with commune and year fixed effects. All columns report OLS regressions in level, with infrastructure outcomes measured within 3 years and power capital measured as total positions accumulated by native officials. Columns (1) and (2) use subsamples of communes in districts with stronger and weaker family values (measured by the income share of domestic remittance and worship expenditure in 2002). Columns (3) and (4) use subsample of communes with below and above median average income per capita in 2002. Columns (5) and (6) use subsamples of communes in provinces with higher and lower local governance quality (computed from first PCI survey in 2006, see text for details). Differences of coefficients are tested against zero in regressions with interaction terms. Robust standard errors in brackets are clustered at commune level. Statistical significance is denoted by *** (p < 1%), ** (p < 5%), and * (p < 10%).

Figure 1. Impact of native officials' promotions on total infrastructures in home communes over time

Note: This figure shows the impact of native officials' promotions on hometown infrastructure categories over time. The dependent variable is commune infrastructures within one year. Each point denotes a coefficient of the number of *new* native official promotions in years *t+1*, *t*, *t-1*, *t-2*, and the accumulated power capital up to year *t-3*. Controls include commune's log average income per capita, log population, and geographical zone, and commune and year fixed effects.

Figure 2. Impact of native officials' promotions on total infrastructures by home commune characteristics
Local linear regression results and 95% confidence intervals
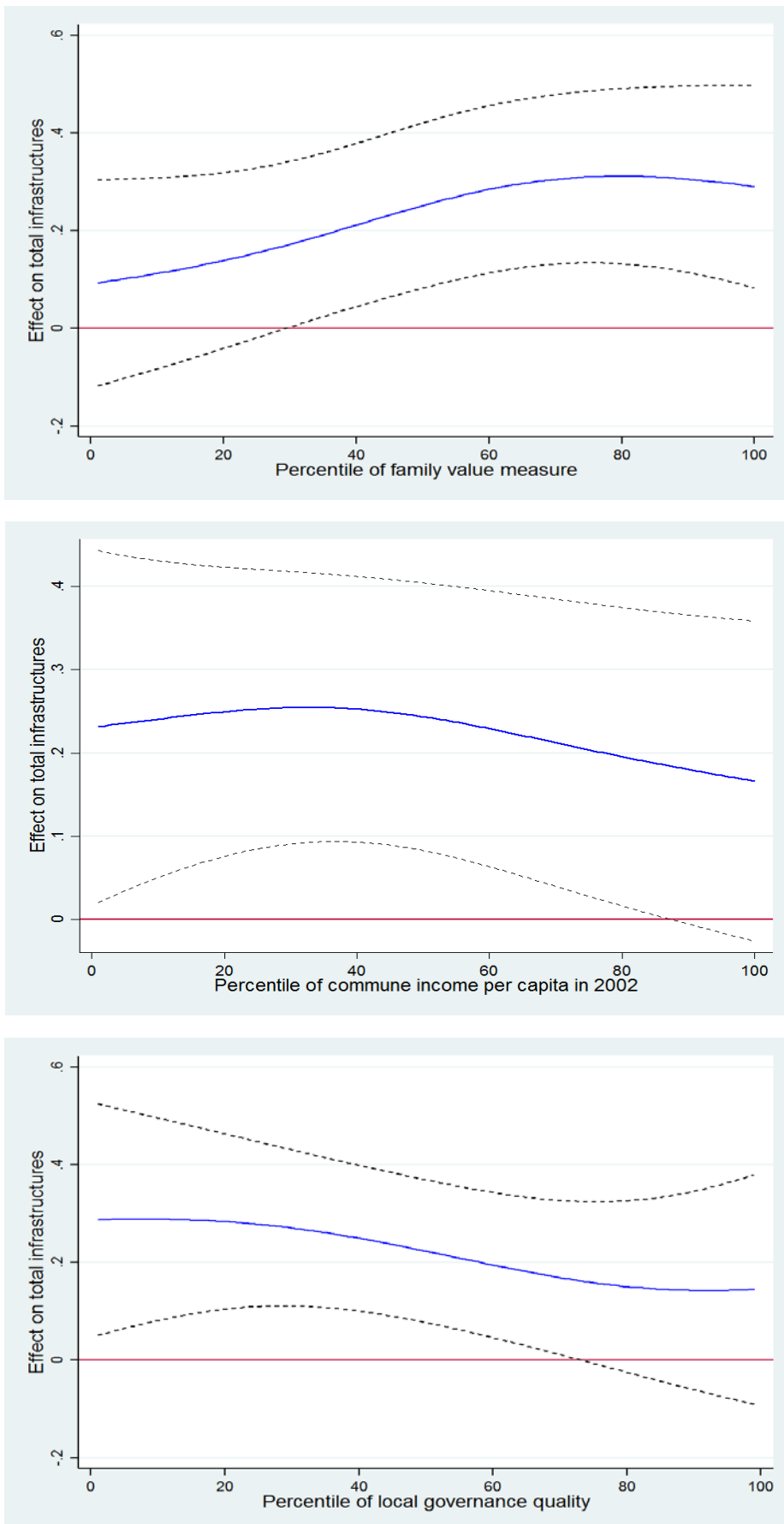
One Mandarin Benefits the Whole Clan:
Hometown Favoritism in an Authoritarian Regime

QUOC-ANH DO, KIEU-TRANG NGUYEN, AND ANH N. TRAN

Online Appendix Not Intended for Publication
I.   Data Appendix

This appendix describes the data, sources, and variables used in "One Mandarin Benefits the Whole Clan: Hometown Favoritism in an Authoritarian Regime," (Do, Nguyen and Tran).

Data on Ranking Officials

We collect data on four groups of ranking officials: (1) Communist Party's Central Committee members, (2) Central Government officials, (3) Provincial Government officials, and (4) National Assembly's members. For each official, we record his position, its begin and end years, his year of birth, and the commune of his patrilineal hometown. One official can appear multiple times in the dataset if he held multiple positions or the same position in multiple terms during the period from 2000 to 2011.

Data on Central Committee members come from the official website of the Communist Party of Vietnam (CPV) <http://www.cpv.org.vn/cpv/index_e.html>. The data cover all members of the 9th Central Committee (2002-2006) and the 10th Central Committee (2007-2011).

Data on Central and Provincial Government officials come from the 2000's, 2004's, and 2009's Yearbooks of Administrative Organizations, published by the Ministry of Interior Affairs. The data cover all officials starting from the rank of deputy minister (Central Government) and vice chair of Provincial People's

Committees (Provincial Government). However, we only include Provincial Government officials whose patrilineal hometowns are in the same provinces as their positions. These officials represent 70% of total Provincial Government officials.

Data on National Assembly members come from the Vietnam National Assembly's official website <http://www.na.gov.vn/htx/English/C1330/#0TwLzt4Nw9UO>. The data cover all members of the 11th National Assembly (2003-2007) and the 12th National Assembly (2008-2011).

Finally, we exclude 4 top positions in the country from the dataset to focus on the pervasiveness of favoritism beyond the top. These 4 positions are the General Secretary of the Communist Party of Vietnam, the Prime Minister, the President, and the Chairman of the National Assembly.

Power Capital Variables

PowerCapital adds up all ranking positions by terms (excluding the above top 4 positions)[1] ever held by native officials connected to a commune (in commune-level regressions) or a district (in district-level regressions) between 2000 and the year of observation. An official is considered connected to a commune (district) if his patrilineal origin is in the commune (district). In Vietnam, a person's patrilineal origin is legally recorded, shown on the identity card, and needs not correspond to his birthplace or residence.

CurrentPowerLevel is the total number of ranking positions by terms (excluding the top 4 positions) currently held by native officials in the year of observation.

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[1] As discussed earlier, we also exclude Provincial Government officials whose patrilineal hometowns are in not the same provinces as their positions.

PowerCapital_CPV (power capital from CPV's Central Committee positions) is constructed in the same way as *PowerCapital*, but includes only ranking positions in the CPV's Central Committee (excluding the Secretary of the CPV).

PowerCapital_Govt (power capital from Executive branch positions) is constructed in the same way as *PowerCapital*, but includes only ranking positions in Central and Provincial Governments (excluding the Prime Minister and the President).

PowerCapital_NA (power capital from National Assembly positions) is constructed in the same way as *PowerCapital*, but includes only positions in the National Assembly (excluding the Chairman of the National Assembly).

PowerCapital_TopRank (power capital from top-ranking positions) is constructed in the same way as *PowerCapital*, but includes only positions at least equivalent to the rank of minster (but below the top 4). These positions comprise Deputy Prime Ministers, Vice Presidents, and ministers in the Central Government, and Politburo members and commission chairs in the CPV's Central Committee.

PowerCapital_MidRankGovtCPV (power capital from Executive branch and CPV middle-ranking positions) is constructed in the same way as *PowerCapital*, but includes only positions below the rank of minister in Central and Provincial Governments and the CPV. These positions comprise deputy ministers in the Central Government, chairs and vice chairs of Provincial People's Committees, and regular (non-Politburo, non-chaired) members of the CPV's Central Committee.

PowerCapital_MidRankNA (power capital from National Assembly middle-ranking positions) is constructed in the same way as *PowerCapital*, but includes only ordinary non-chaired positions in the National Assembly.

NewPower is the total number of new ranking positions held by native officials in the year of observation (i.e. positions with terms starting in the year of observation). Note that $NewPower_t = PowerCapital_t - PowerCapital_{t-1}$.

Data on Commune Characteristics and Infrastructures

We obtain data on commune characteristics and infrastructures from the Vietnam Household Living Standard Survey (VHLSS). The VHLSS, technically supported by the World Bank, is conducted every two years (2002, 2004, 2006, 2008, and 2010) at both commune and household levels from a random, representative sample of about 2,200 communes out of about 11,000 communes in the country. The commune survey is conducted with several commune officials, while the household survey is conducted with a random sample of households in the commune. The VHLSS covers a total of more than 4,000 communes across its 5 waves.

We extract data from both surveys, including commune characteristics (i.e. area, population, average household income, average household expenditure, geographical zone, rural/urban classification) and presence and quality of various types of infrastructure in the communes (i.e. utilities, irrigation systems, market places, post offices, radio stations, cultural centers, schools, clinics/hospitals).

Finally, we only keep communes classified as rural in the dataset, so as to avoid the complexity of infrastructure development in urban areas.

Commune Infrastructure Variables

$Infras3yr_{ct}$ (commune total infrastructures within 3 years) is the total number of all infrastructure categories ever present in commune c in survey years t and $t + 2$ (i.e. two consecutive waves of the VHLSS.) That is, $Infras3yr_{ct} = \sum_k D3yr_{kct}$ where $D3yr_{kct}$ is a binary indicator of presence of infrastructure k in

commune c in either survey year t or survey year $t+2$. The 12 possible infrastructure categories are electricity, clean water supply in dry season, clean water supply in wet season, irrigation system, market place, post office, radio station, cultural center, pre-school, middle school, high school, and hospital.[2]

$Infras1yr_{ct}$ (commune total infrastructures within 1 year) is the total number of all infrastructures categories present in commune c in survey year t. That is, $Infras1yr_{ct} = \sum_k D1yr_{kct}$ where $D1yr_{kct}$ is a binary indicator of presence of infrastructure k in commune c in survey year t. $Infras1yr_{ct}$ is not available for 2002 as only 4 out of the above 12 infrastructure categories are covered in the 2002 survey.

$NewInfras3yr_{ct}$ (commune total new infrastructures within 3 years) is the total number of new infrastructure categories present in commune c in survey year $t+2$. An infrastructure category is considered new if it is present in commune c in survey year $t+2$ but not in survey year t. $NewInfras3yr_{ct}$ is not available for 2002 as only 4 out of the above 12 infrastructure categories are covered in the 2002 survey.

$InfrasImprv_{c,t_1,t_2}$ (commune infrastructure improvement) is a binary indicator of improvement in the total number of all infrastructures present in commune c in survey year t_2 over that in survey year t_1 $(t_1 < t_2)$. That is, $InfrasImprv_{c,t_1,t_2} = 1(Infras1yr_{c,t_2} > Infras1yr_{c,1_1})$.

$Infras3yr\_Productive$ (productive infrastructures within 3 years) is constructed in the same way as $Infras3yr$, but includes only productive infrastructure categories. These 5 possible infrastructure categories are electricity, clean water supply in dry season, clean water supply in wet season, irrigation system, and marketplace.

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[2] Besides these 12 infrastructure categories, VHLSS also covers primary school and clinic, which we do not include in our infrastructure measures due to the lack of variation. The 2002 survey covers only 4 out of 12 mentioned infrastructure categories (electricity, clean water supply in dry season, clean water supply in wet season, and hospital). The 2004, 2006, 2008, and 2010 surveys cover all 12 mentioned infrastructure categories.

Infras*3*yr_Cultural (cultural infrastructures within 3 years) is constructed in the same way as *Infras*3*yr* , but includes only cultural infrastructure categories. These 3 possible infrastructure categories are post office, radio station, and cultural center.

Infras*3*yr_EduHealth (education and health infrastructures within 3 years) is constructed in the same way as *Infras*3*yr*, but includes only education and health infrastructure categories. These 4 possible infrastructure categories are pre-school, middle school, high school, and hospital.

***Infras*3*yr_Zscore*$_{ct}$** (aggregation of z-scores of infrastructures within 3 years) is defined as $\sum_k \frac{D3yr_{kct}}{\sqrt{\text{Var}(D3yr_k)}}$ where the variance is taken over (c, t) for each infrastructure k.

District Infrastructure Variables

***Infras*3*yr_NCAvg*$_{dt}$** (district's non-connected commune average infrastructures within 3 years) is the average of all available *Infras*3*yr*$_{ct}$ in which c is a rural non-connected commune in district d . A non-connected commune is one that does not have any native official with ranking position during our study period.

***Infras*3*yr_NCTotal*$_{dt}$** (district's non-connected commune total infrastructures within 3 years) is the sum of all available *Infras*3*yr*$_{ct}$ in which c is a rural non-connected commune in district d.

***Infras*3*yr_AllAvg*$_{dt}$** (district's per-commune average infrastructures within 3 years) is the average of all available *Infras*3*yr*$_{ct}$ in which c is a rural commune in district d.

FamilyValueScore is the ratio of domestic remittances and worship expenditure over household income in 2002, averaged over surveyed households in the same district. The amount of domestic remittances a household receives, the amount it spends on worship, and the household's total income are extracted from VHLSS household survey.

LocalGovernanceScore aggregates relevant questions/sub-scores included in the Vietnam Provincial Competitiveness Indices (PCI) 2006. The PCI is a set of indices of industries' governance perceptions that has been systematically constructed from surveys of enterprises based in each province. It is the result of a country-wide project conducted since 2006 by the Vietnam Chamber of Commerce and Industry, with the help from the UNDP. *LocalGovernanceScore* is calculated based on 7 questions/sub-scores:

1. Length of business registration in days
2. Land access sub-score (on a scale of 10)
3. Security of land tenure sub-score (on a scale of 10)
4. Equity and consistency of policy application sub-score (on a scale of 10)
5. Share of firms agreeing to the statement "Officials use compliance with local regulations to extract rents"
6. Share of firms agreeing to the statement "There is no discretionary initiatives at provincial level"
7. Share of firms agreeing to the statement "Legal system provides mechanism for firms to appeal officials' corrupt behavior"

Specifically, $LocalGovernanceScore = -(1) + (2) + (3) + (4) - (5) \times 10 + (6) \times 10 + (7) \times 10$. Higher *LocalGovernanceScore* indicates less corrupted and more transparent local governance.

II.   A simple conceptual framework

Existing economic theory has analyzed favoritism in auctions (Laffont and Tirole 1991, Burguet and Perry 2007), in the labor market (Prendergast and Topel 1996, Duran and Morales 2011) and in queuing for public resources (Batabyal and Beladi 2008). Ethnicity (Burgess et al 2011), gender (Abrevaya and Hamermesh 2012) and social pressure (Garicano, Palacios and Prendergast 2005) have been considered as bases for favoritism. In this section, we present a simple model to illustrate how hometown-based favoritism works, and predict how officials' power and motives shape the outcomes of this type of favoritism.

The model involves a sequential game between two utility-maximizing agents, the Official and the Budget Allocator.[3] The Official corresponds to newly promoted officials with special links to their place of origin. The Allocator refers to the government unit that has authority over budget allocations to communes, namely the district budget authority in our context. The Official cares about getting additional resource allocation for his commune, which often comes in the form of additional budget infrastructure projects such as roads, markets, schools and clinics. These additional resources can benefit the Official in two ways: by providing him with additional political support from his home commune/district, as observed in the case of pork-barrel politics, and by appealing to his social preferences to improve the welfare of his commune/district of origin and his remote relatives living there.

Let λ denote the administrative level of the place of birth. λ can be commune, district or province. A higher λ means a larger administrative level, with more potential to provide political support but less social affection from the Official. The model allows for the comparison of different λ's (commune versus district) to gain insight into the Official's motivation.

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[3] For expositional convenience, we refer to the official as male and the local authority as female.

To achieve his objective, the Official has to work out a deal with the Allocator, who has direct control over budget allocation. The Official can give the Allocator certain favors, such as political promotion, that enhance the Allocator's utility by *P*, at a cost *g* for the Official. In return, the Allocator will channel an additional amount B from the budget to the Official's hometown's infrastructure projects, at a cost *h* for the Allocator. This favored allocation B is valued by the Official at $\pi(B,\lambda) + \sigma(B,\lambda)$, where π represents the utility from additional political support and σ represents the utility from social preference satisfaction. We pay particular attention to B, as it manifests explicit evidence of favoritism between the Official and Allocator.

We assume that the Official's cost function $g(P,r)$ is increasing and convex in P and decreasing in r, where r represents the Official's power such that higher r implies higher power. Next, the Allocator's cost function $h(B,d)$ is increasing and convex in B and increasing in d, where d measures institutional constraints on the Allocator's discretion. We further assume that $\pi(B,\lambda)$ and $\sigma(B,\lambda)$ are both increasing and concave in B.[4]

The Official is the first mover and makes an offer to the Allocator involving (P,B). The Allocator will accept if it satisfies his participation constraint, namely that the benefit of accepting is not lower than the cost. As the first mover, the Official can fully appropriate the game's rent by making an offer such that the Allocator is indifferent as to whether to accept or refuse it. The offer then solves the following maximization problem:

$$\text{Max}_{(P,B)} \ \pi(B,\lambda) + \sigma(B,\lambda) - g(P, r) \ \text{s.t.} \ P - h(B,d) \geq 0. \ (1)$$

---

[4] We assume that the costs of direct monetary transfers between the two agents are much higher than the costs of providing favor, so monetary transfers, or bribes, are not realistic options. In practice, exchanges of both bribes and favors may coexist. We refrain from modeling explicit bribes because it would not add insight to our empirical setup.

We will now state three propositions about the existence, distribution and motives of favoritism. These propositions provide the basis for the subsequent empirical investigation presented in this paper.

Proposition 1: Assume that (A1): $\pi'_B(0,\lambda) + \sigma'_B(0,\lambda) - g'_P(h(0,d),r)h'_B(0,d) > 0$. There exists a unique solution (P^*,B^*) to this model, with positive favored allocation $B^*>0$, determined by the following equations:

$$\pi'_B(B^*,\lambda) + \sigma'_B(B^*,\lambda) - g'_P(h(B^*,d),r)h'_B(B^*,d) = 0 \quad (2), \; P^* = h(B^*,d).$$

Intuitively, this proposition shows that if there is positive net marginal benefit of favored allocation B at 0, then a positive level of favoritism will occur. As a result, even in an authoritarian regime where the electoral motivation is absent, if the marginal social motivation is sufficiently large then favoritism will arise.

Proposition 2: (a) Assume that (A2a) the marginal cost g'_P is decreasing in r, then the favored allocation B^* is increasing in r; (b) Assume that (A2b) the marginal cost h'_B is increasing in d, then the favored allocation B^* is decreasing in d.

Result (a) implies that a higher-powered official can exercise more favoritism for his home commune. This relation allows us understand the power structure in a political system through observing the favoritism of different officials. Notice that what matters is the cross derivative of g with respect to P and r, and not the first derivative of g with respect to r. A higher-ranked official can get a better deal because P and r are complements. Result (b) implies that favoritism is more widespread when local authorities are less constrained in making deals, typically under low quality of local governance.

Proposition 3: If the marginal benefits $\sigma'_B(B,\lambda) + \pi'_B(B,\lambda)$ are increasing (decreasing) in λ (A3), then the favored allocation B^* is increasing (decreasing) in λ.

This result shows that the effect of administrative level λ on the value of favored allocation essentially depends on its effect on the marginal benefits. As discussed previously, it is realistic to assume that at a larger administrative level, social preferences become less important and political motivation more important. At a larger level, social connections arguably become less frequent or salient, so the improved utility derived from more favored allocation is less valuable, i.e. $\sigma'_B(B,\lambda)$ decreases when λ increases. On the other hand, a larger level is more politically influential, so additional favored allocation can potentially bring more benefit, i.e. $\pi'_B(B,\lambda)$ increases when λ increases. Overall, our prior on the effect of λ on the total marginal benefit, namely $\sigma'_B(B,\lambda) + \pi'_B(B,\lambda)$, depends on whether social preferences or political influences are more dominant. Empirically, evidence that B* is increasing in λ is consistent with $\sigma'_B(B,\lambda) + \pi'_B(B,\lambda)$ being increasing in λ, in which case the social preference effect through σ'_B must have dominated the political motivation effect through π'_B.

We can also consider the special case where the Official is the same as the Budget Allocator, political favor exchange becomes irrelevant and the Official only has to pick B to maximize his net gain of $\pi(B,\lambda) + \sigma(B,\lambda) - h(B,d)$. This problem has a unique solution B* that satisfies $\pi'_B(B^*,\lambda) + \sigma'_B(B^*,\lambda) - h'_B(B^*,d) = 0$ (as $\pi'_B(B,\lambda)$ and $\sigma'_B(B,\lambda)$ are both decreasing in B while $h'_B(B,d)$ is increasing). As in propositions 2 and 3 above, this unique solution B* increases when d is lower (assuming that h'_B is increasing in d) and when $\sigma'_B(B,\lambda)$ is higher for every value of B.

This model provides a simple framework for understanding favoritism under various political systems. In institutional environments with strong governance and high accountability, both g'_P (the Official's marginal cost to grant political favor) and h'_B (the Allocator's marginal cost to distort the local budget) are prohibitively high. The resulting amount of budget distorted by favoritism B* is

then minimal, if at all. This applies to strong democracies as well as non-democratic regimes with a well-functioning system of checks and balances on the majority of officials, such as Singapore's – the lack of political incentives in those regimes, i.e. low π'_B, may further dampen favoritism. In effect, it suffices to raise either g'_P or h'_B, i.e. either the accountability of high-rank officials or that of local administrative units, to curb B^*.

The model also shows that while evidence of favoritism from heads of state such as Colonel Gaddafi or President Félix Houphouët-Boigny abounds, it is unclear whether favoritism can be widespread beneath the top dictators in these contexts. A strong dictator may only tolerate his own favoritism and punish his coordinates'; this is a case of $g'_P=0$ for the dictator, but very high for everyone else. In such cases, democratization and/or decentralization could increase π' and lower h'_B, both leading to more widespread favoritism. For that reason, favoritism may also be found in democratic countries, such as in certain cases in the U.S. or India where the marginal cost g'_P is low.

The model's application to an authoritarian setting yields key empirical predictions on the effects of officials' promotions on home commune infrastructure, a manifestation of favored budget allocation. First, because of a lack of checks and balances, the marginal costs g'_P and h'_B are expected to be low in Vietnam, so the phenomenon of hometown favoritism is predicted to be widespread among officials, even beyond the top leaders (**Hypothesis I**). Second, hometown favoritism depends positively on the official's power in the authoritarian hierarchy and on the home province's local governance quality (**Hypothesis II**). Third, hometown favoritism is most present where the attachment between the official and the hometown is strongest. We expect that the marginal social preference σ'_B is close to zero for communes aside from the home commune and that σ'_B for the home district is diluted to a much lower level than

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that of the home commune. Therefore, favoritism is predicted to decrease as we move from the home commune to neighboring communes or to the home district (**Hypothesis III**). While marginal political interest π'_B may be slightly higher at the district level, we do not expect it in practice to be of a relevant magnitude (as districts barely matter in Vietnamese politics).

III.   Proofs of Propositions

Proof of Proposition 1: The Lagrangian of this optimization problem, $\pi(B,\lambda) + \sigma(B,\lambda) - g(P, r) - \lambda[P - h(B,d)]$, implies the first order conditions:

$$\pi'_B(B,\lambda) + \sigma'_B(B,\lambda) + \lambda h'_B(B,d) = 0 \text{ and } -g'_P(P,r) - \lambda = 0.$$

The participation constraint is binding as $P = h(B,d)$.

These conditions yield:

$$\pi'_B(B,\lambda) + \sigma'_B(B,\lambda) - g'_P(h(B,d),r)h'_B(B,d) = 0.$$

This equation has a unique solution B^* because the left-hand side's derivative with respect to B is negative, as:

$$\pi''_{BB}(B,\lambda) < 0, \sigma''_{BB}(B,\lambda) < 0, \text{ and } g''_{PP}(h(B,d),r)[h'_B(B,d)]^2 +$$
$$g'_P(h(B,d),r)h''_B(B,d) > 0.$$

The Lagrangian is concave in (P,B) because its Hessian matrix is negative definite. Therefore, $(h(B^*,d),B^*)$ is the unique solution to this optimization problem under constraint. Furthermore, since the left-hand side of this equation is positive when B=0, the result of favored allocation B^* must be positive **(QED)**.

Proof of Proposition 2: (a) The partial differentiation with respect to r from equation (2) yields:

$$\pi''_{BB}(B^*,\lambda)B^{*'}_r + \sigma''_{BB}(B^*,\lambda)B^{*'}_r =$$
$$[g''_{PP}(P^*,r)h'_B(B^*,d)B^{*'}_r + g''_{Pr}(P^*,r)]h'_B(B^*,d) + g'_P(P^*,r)h''_{BB}(B^*,d)B^{*'}_r$$
$$\Leftrightarrow \{\pi''_{BB}(B^*,\lambda) + \sigma''_{BB}(B^*,\lambda) - g''_{PP}(P^*,r)[h'_B(B^*,d)]^2 - g'_P(P^*,r)h''_{BB}(B^*,d)\}B^{*'}_r$$
$$= g''_{Pr}(P^*,r)h'_B(B^*,d).$$

The expression in the bracket on the left-hand side is negative while the right-hand side is positive as $g''_{Pr}(P^*,r) < 0$ based on the proposition's assumption. Therefore, $B^*{}_r$ must be positive, indicating that the solution B^* is increasing in r **(QED).**

(b) The partial differentiation with respect to d from equation (2) yields:

$$\pi''_{BB}(B^*,\lambda)B^*{}_d + \sigma''_{BB}(B^*,\lambda)B^*{}_d =$$

$$g''_{PP}(P^*,r)[h'_B(B^*,d)B^*{}_d + h'_d(B^*,d)]h'_B(B^*,d) + g'_P(P^*,r)[h''_{BB}(B^*,d)B^*{}_d + h''_{Bd}(B^*,d)]$$

$$\Leftrightarrow \{\pi''_{BB}(B^*,\lambda) + \sigma''_{BB}(B^*,\lambda) - g''_{PP}(P^*,r)[h'_B(B^*,d)]^2 - g'_P(P^*,r)h''_{BB}(B^*,d)\}B^*{}_d$$

$$=$$

$$g''_{PP}(P^*,r)h'_d(B^*,d)h'_B(B^*,d) + g'_P(P^*,r)h''_{Bd}(B^*,d).$$

The expression in the bracket on the left-hand side is negative while the right-hand side is positive as $h''_{Bd}(B^*,d) > 0$ based on the proposition's assumption. Therefore, $B^*{}_d$ must be negative, indicating that the solution B^* is decreasing in d **(QED.)**

Proof of Proposition 3: Suppose the marginal benefits are decreasing in λ, as in the case where social preferences outweigh political supports (the opposite case is proven analogously.) Let $\lambda_1 < \lambda_2$, so $\sigma'_B(B,\lambda_1) + \pi'_B(B,\lambda_1) \geq \sigma'_B(B,\lambda_2) + \pi'_B(B,\lambda_2)$ for every B, and B_1^* and B_2^* be the corresponding solutions. We now need to show that $B_1^* \geq B_2^*$.

Recall from equation (2) that : $\sigma'_B(B,\lambda) + \pi'_B(B,\lambda) = g'_P(h(B,d),r)h'_B(B,d)$. Denote this expression as M(B). $\sigma'_B(B,\lambda) + \pi'_B(B,\lambda)$ is decreasing in B as $\sigma+\pi$ is concave in B, while M(B) is increasing in B as g and h are convex.

Assume that $B_1^* < B_2^*$, then $M(B_1^*) = \sigma'_B(B_1^*,\lambda_1) + \pi'_B(B_1^*,\lambda_1) \geq \sigma'_B(B_1^*,\lambda_2) + \pi'_B(B_1^*,\lambda_2) \geq \sigma'_B(B_2^*,\lambda_2) + \pi'_B(B_2^*,\lambda_2) = M(B_2^*)$, contradictory to M(B)'s increasing in B. Therefore, $B_1^* \geq B_2^*$ **(QED)**.

IV. Semi-parametric method used for Figure 1

We modify the benchmark empirical regression in section IV.B to model the heterogeneous effect of officials' promotions on infrastructure improvements as a function $\beta(.)$ of a baseline variable x_c:

$$Infras3yr_{ct} = \beta(x_c)PowerCapital_{c,t-1} + \gamma(x_c)\boldsymbol{X}_{ct} + \delta_t(x_c) + \mu_c(x_c) + \varepsilon_{ct}$$

Figure 2 plots the estimated function $\beta(x_c)$ for three different baseline variables, namely the percentiles of family value measure, income per capita, and local governance quality. The function $\beta(x_c)$ is estimated from semi-parametric local linear regressions of the outcome variable $Infras3yr_{ct}$ at each value of x_c, weighted by a Gaussian kernel with a bandwidth of 25% of the total range of x_c, on the treatment variable $PowerCapital_{c,t-1}$, including controls and fixed effects as in the benchmark regression. The observed pattern is much similar across a wide range of cross-validated bandwidths (see Li and Racine 2006, ch. 2.) To provide an example, in Figure 2's first plot we divide the range of the family value measure into a 100-point grid, run a local linear regression with Gaussian kernel weight at each of these points, using all controls and fixed effects in the benchmark regression in Table 2A, and then report the estimated coefficient of $PowerCapital_{c,t-1}$ as a point on the graph.

V. Inference based on Monte Carlo simulations

To further verify the statistical inference of our benchmark results, we show in Figure A2 results from 1,000 Monte Carlo simulations in which each commune's power capital is drawn randomly from the baseline-sample power capital distribution. We then estimate the effect of this "random" power capital on real commune infrastructures using the same baseline specification as in column 1 of Table 2 in each simulation. As expected, the distribution of the resulting estimates centers around zero, confirming that power capital should not have any impact on

commune infrastructures when there is no real linkage between the two. On the other hand, our baseline estimated effect of 0.227 is at the 99.9[th] percentile of this distribution, indicating that the impact we find is unlikely to be spurious but reflects a causal relationship between native official promotions and home commune infrastructure.

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Table A1. Increased commune's power capital improves infrastructures

	(1)	(2)	(3)	(4)
Specification	OLS in level equation	Conditional logit model	Negative binomial model	OLS in level equation
Dependent variable	Aggregation of z-scores of infrastructures within 3 years	Change in total infrastructures	Change in total infrastructures	Total infrastructures within 1 year
Power capital	**0.608** [0.199]***			
Change in power capital		**0.333** [0.170]*	**0.201** [0.0749]***	
New power $t+1$				-0.00858 [0.147]
New power t				-0.0604 [0.125]
New power t-1				0.147 [0.151]
New power t-2				0.319 [0.220]
Power capital t-3				0.243 [0.167]
Commune controls	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Province & Year	Province & Year	Commune & Year
Cluster	Commune	Commune	Commune	Commune
Observations	1,237	722	728	941
R-squared				0.757

Note: This table relates native officials' promotion to a home commune's new infrastructure. Each observation is a connected commune in a year. Controls include commune's log average income per capita, log population, and geographical zone. Column (1) follows Table 2's column (1), using Kling et al.'s (2007) aggregation of z-scores as the outcome variable (footnote 22 in the main text). Columns (2) and (3) respectively report the conditional logit model and the negative binomial model (footnotes 18 and 19 in the main text). Column (4) reports the regression that produces Figure 1. Robust standard errors in brackets are clustered at commune level. Statistical significance is denoted by *** ($p < 1\%$), ** ($p < 5\%$), and * ($p < 10\%$).

Table A2. Increased commune power capital does not affect infrastructures in neighboring communes

|	(1)	(2)	(3)	(4)	(5)
Sample	Non-connected communes in home district			All other communes in home district	Home district
Dependent variable	Total infrastructures within 3 years			Total infrastructures within 3 years	Per-commune average total infrastructures within 3 years
Source of power capital	All positions	Executive branch	Middle-ranking	All positions	All positions
Home commune's power capital	0.00553 [0.00563]	-0.00882 [0.00603]	-0.000501 [0.00733]	0.00804 [0.00493]	
Home district's power capital					0.0202 [0.0214]
Observation unit	Commune x Year	Commune x Year	Commune x Year	Commune x Year	District x Year
Commune/district controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	Commune & Year	Commune & Year	Commune & Year	Commune & Year	District & Year
Cluster	Commune	Commune	Commune	Commune	District
Observations	16,539	16,539	16,539	21,165	1,521
R-squared	0.759	0.759	0.759	0.756	0.815

Note: This table extends Table 6 on the effect of native officials' promotions on infrastructure construction in home district. Controls include commune's or district's log average income per capita, log population, and geographical zone, with commune and year fixed effects. All columns report OLS regressions in level, with infrastructure outcomes measured within 3 years and power capital measured as total positions accumulated by native officials. Columns (1) to (3) consider non-connected rural communes in the same home district. Column (4) uses all other communes in home district (including other connected communes), and column (5) uses the measure of average total infrastructures per commune in the home district. Commune or district and year fixed-effects are included. Robust standard errors in brackets are clustered at commune or district level as indicated. Statistical significance is denoted by *** ($p < 1\%$), ** ($p < 5\%$), and * ($p < 10\%$).

Figure A1. Commune total infrastructures and power capital distributions
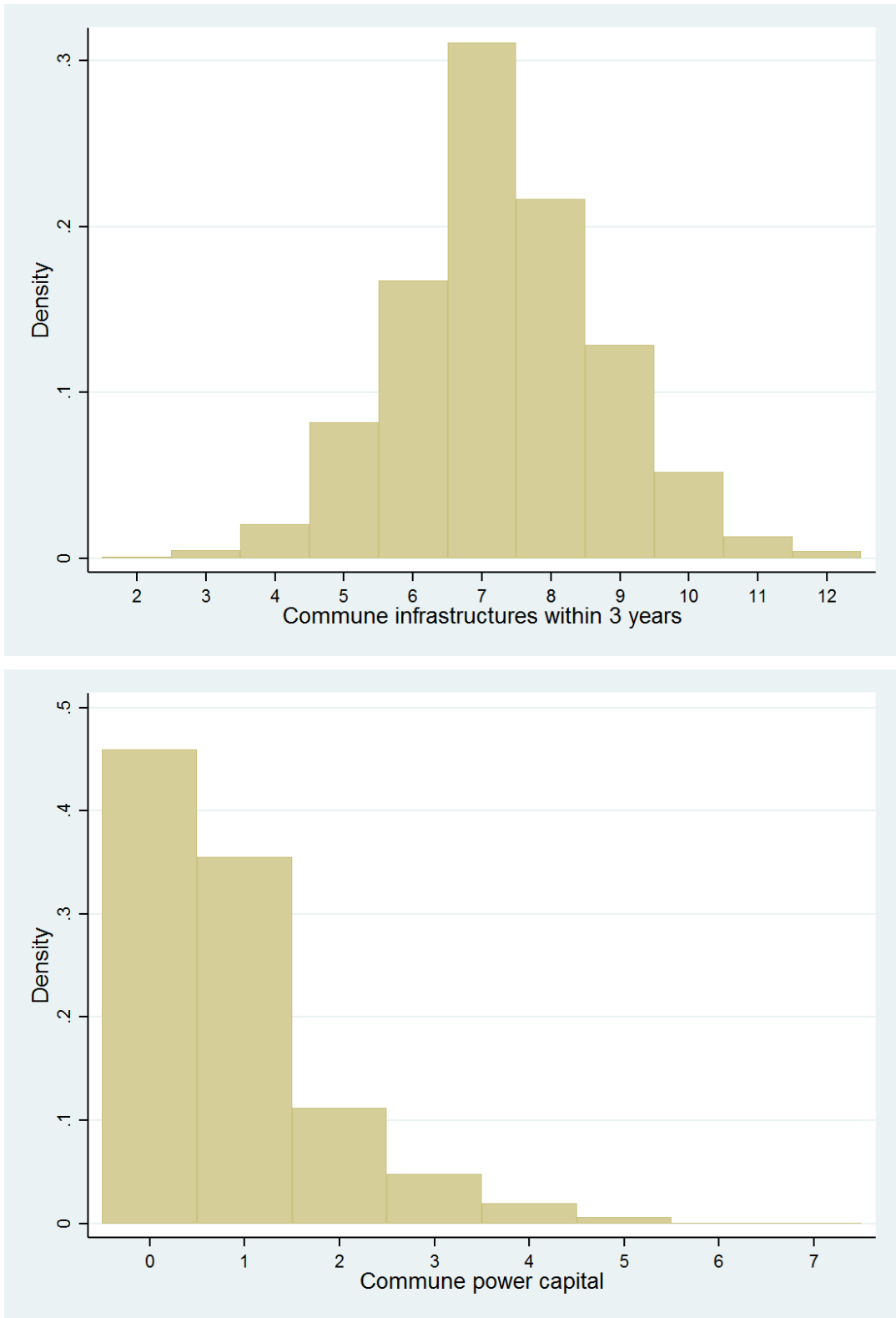
Note: Distributions of number of categories of infrastructures by commune, and of accumulated number of native officials from the commune.

Figure A2. Actual versus simulated beta coefficients
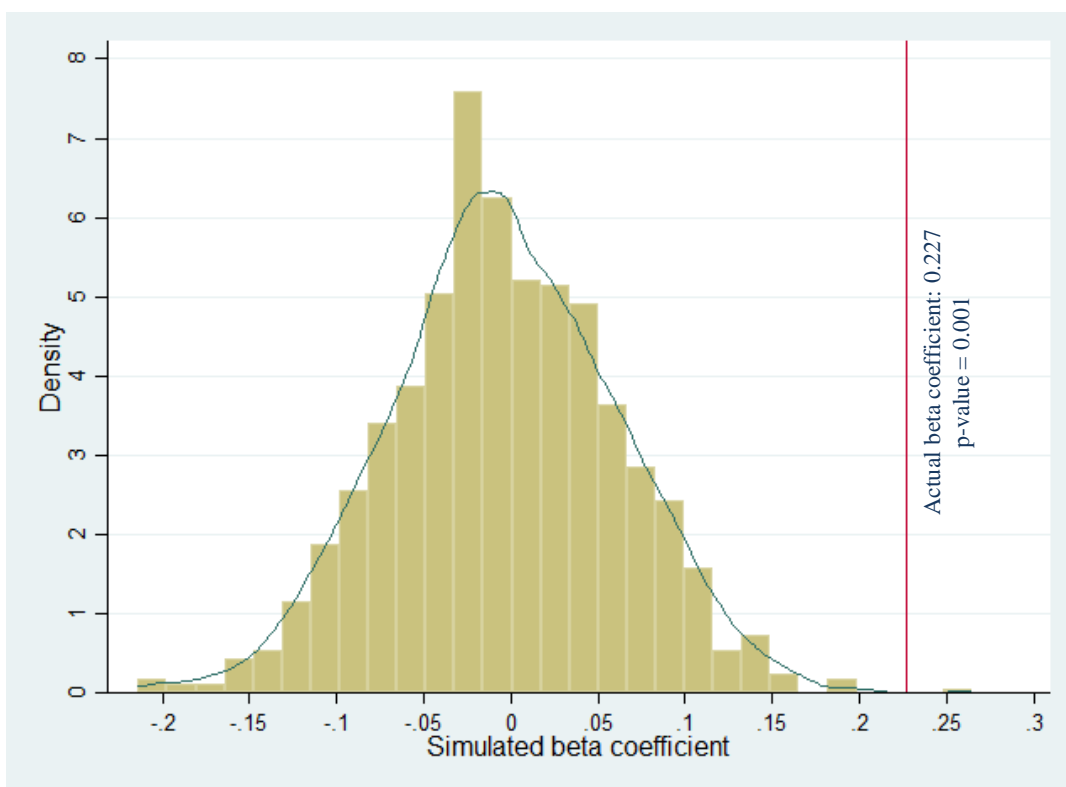
Note: Monte Carlo simulated beta coefficients of the effect of power capital on hometown infrastructures, where each simulation every commune's power capital is sampled randomly from the baseline power capital distribution. The red line marks the actual beta coefficient, and its p-value with respect to the simulated distribution.

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