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Political Structure as a Legacy of Indirect Colonial Rule: Bargaining between National Governments and Rural Elites in Africa*

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Abstract

Alliances between national governments and rural elites are observed in postcolonial Africa. Governments rely on rural elites to control rural regions, guaranteeing them a degree of authority and revenue in return. This paper provides a model to analyze the forging of such alliances. Without cooperation between the national government and rural elite, the power of the two competing authorities to compel farmers' obedience determines the revenue of the government extracted from cash crop production. Hence, with a powerful rural elite, the national government has a weak bargaining position and agrees to a large transfer to the rural elite. Furthermore, the government's capacity to compel rural residents' obedience is endogenously determined by the level of cash crop production and the power of rural elites. Because indirect colonial rule is a significant source of the elite control over residents in rural areas, cross-regional variations in colonial policies lead to various forms of postcolonial alliances between African national governments and rural elites.

JEL classification: H11; H20; N47; P16; Q13

Keywords: Africa; Colonialism; Politics; State Capacity

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1 Introduction

In post-colonial sub-Saharan Africa, many national governments forged alliances with rural elites living within their national territories (e.g., chiefs and religious leaders). In such alliances, national governments preserved the rural-elite authority formed during the colonial era and ceded their resources and prerogatives to these rural elites. A good example is the alliance between the postcolonial Senegalese government and religious leaders in the Sufi brotherhoods, whose influence and control over the population in the Groundnut Basin region were reinforced by the French colonial rule. To govern the region, the Leopold Senghor's regime gave preferential treatment to the religious leaders by providing direct transfers, ceding control over rural public institutions, and recognizing these leaders' control over land (Cruise O'Brien 1975:76-7, 101-9, 126-41; Boone 2003:chap. 3).

Similar alliances are also observed in countries such as Sierra Leone (Migdal 1988:129-34) and Nigeria (Miles 1987), but the degree to which African national governments provide a privileged status for rural elites varies both across and within countries. Miles (1987) argues that, while the Hausa chiefs in Nigeria held privileged positions during the postcolonial regime, the status of the Hausa chiefs in Niger was not as privileged. Boone (2003, chap. 3) argues that an alliance similar to the one observed in the Groundnut Basin region does not exist in the Lower Casamance region of Senegal.

This paper develops a game-theoretic model to discuss why and when national governments cede their resources and authority to rural elites. In the model, a national government decides whether to cooperate with a rural elite to secure revenue. If there is cooperation, the revenue that the two parties collect is shared according to an agreement. To clarify the two parties' bargaining power and the resulting agreement's features, the model attempts to explain what each party gains in the case of disagreement.

The argument here departs from the standard presumption that agents in a society obey the government's rules (or policies). As Jackson and Rosberg (1982:1) state, the capacity of national governments is weak in postcolonial Africa. In such countries, the national governments and rural elites are rivals in the competition for obedience of rural residents; i.e., both the governments and rural elites attempt to compel rural residents to obey their individual rules, and the residents must choose to obey one of the two authorities (Migdal 1988).

The model considers the situation in which both the national government and rural elite attempt to extract revenue from cash crop production. Since the colonial era, cash crops for export have been the primary products in Africa.[1] Thus, as Bates (1981:4, chap. 1) argues, the natural strategy of national gov-

[1] Furthermore, governments in developing countries cannot rely on a modern tax system due to the structure of economies and a weak fiscal capacity (Tanzi and Zee 2000).

ernments in postcolonial Africa is to collect revenue by extracting the surplus from cash crop production, i.e., by purchasing cash crops from farmers at prices lower than the price in the international market.[2] However, the rural sectors in many African countries were subject to the influence of rural elites since the colonial era, and it would also be natural for these elites to seek to purchase farmers' cash crops for revenue.[3] In fact, as we will see in the following, there were some cases where the rural elites controlled the marketing of cash crops before independence.

The model defines power as the ability of the national government and rural elite to impose sanctions on disobedient farmers, and analyzes the competition for farmer obedience and control over the marketing of cash crops. Both the national government and rural elite simultaneously announce their purchase prices of cash crops. Each authority imposes sanctions on farmers who do not sell their crops to the authority. Given the purchase prices and expected sanctions, farmers must choose the buyer for their crops. This situation represents tax competition between the two authorities, but it departs from the standard arguments of tax competition because the equilibrium revenue depends on the power to impose sanctions on disobedient farmers.[4] The model shows that the relative power of the two authorities determines the revenue of each authority and that government revenue decreases when the rural elite's power increases.

To analyze the alliance between the national government and rural elite, the model is extended to allow for the two authorities to bargain. If they reach an agreement, they jointly announce a single purchase price and divide the revenue according to the agreement. Since the revenue obtained by the national government when negotiations collapse depends negatively on the strength of the rural elite, the national government has a weak bargaining position when facing a powerful rural elite. Thus, the government is likely to agree to a transfer of large resources to a relatively stronger rural elite during negotiations.

The model also shows that high production in cash crop sectors and low costs for building state capacity incentivize the national government to increase its power (the capacity to control rural farmers). This increased government's capacity leads to a strong government bargaining position and low status of the rural elite in the agreement. Furthermore, while the government's capacity to

[2]See also Kasara (2007).

[3]Boone (2003:7) points out conflicting interests between national governments, whose "immediate goal was to consolidate the political dominance of the center, and to sustain or intensify the taxation of rural producers", and "established rural elites – chiefs, aristocratic families, religious authorities – who had a stake in defending and enhancing power already achieved."

[4]Comparing this model with the literature on tax competition, rather than the standard framework by Wilson (1986) and Zodrow and Mieszkowski (1986), the model structure is similar to that in Ferrett and Wooton (2010), in which two countries bid in terms of taxes and subsidies to attract industry.

control rural farmers is independent of rural elite's strength in the case where the two authorities forge alliances, the government's capacity is increasing in the strength of rural elite in the case of no alliance, in which the national government does not agree to a positive transfer to the rural elite. This is because the national government needs to build sufficient capacity to countervail the rural elite's control over residents in this case.

The model implies that variations in colonial policies generate cross-regional variations in the form of alliances forged between African national governments and rural elites. Because indirect colonial rule is a significant source of rural-elite power,[5] the experience of intensive indirect colonial rule is associated with rural elites enjoying a privileged status under postcolonial regimes.

Based on the existing case studies, this paper also discusses how well the presented model can describe the observed phenomena. Comparison between Hausa chiefs in Nigeria and Niger (Miles 1987) and comparison between the Groundnut Basin region and the Lower Casamance region of Senegal (Boone 2003) support the relationship between the strength of the rural elite (degree of indirect rule) and the postcolonial rural elite's status. Furthermore, comparative research on the Asante region of Ghana and southern Côte d'Ivoire (Boone 2003) also supports the relationship between the strength of rural elites and the government's capacity to control rural regions.

The remainder of this paper is organized as follows. Section 2 relates this paper to existing literature. Section 3 provides a brief description of indirect rule, the formation of rural elites during colonial rule, and the relationships of these rural elites with postcolonial national governments. Section 4 provides a model of competition for farmer obedience between the national government and rural elite. Section 5 extends the model to analyze bargaining between the two authorities. Section 6 provides case studies. Section 7 concludes the paper.

2 Related Literature

The work most related to this paper is Boone (2003), who pursues the same research question. Although a formal model is not provided, Boone (2003) also argues that rural-elite control over residents affects the elite's bargaining position vis à vis the national government. However, this paper reaches a different conclusion. Boone (2003) argues that national governments devolve their authority to rural elites who cannot extract a surplus from rural sectors without cooperating with national governments. In contrast, this paper argues that national governments devolve their authority to rural elites who are strong rivals

[5]Under indirect rule, colonial empires designated rural elites to administer rural areas and control rural residents. As Migdal (1988:110) argues, this colonial policy exponentially increased the rural elites' power.

in the competition for revenue extraction.[6] Furthermore, while Boone (2003) argues that the strength of rural elites positively affects the scale of government's rural governing institutions, this paper argues that its effects depend on whether the national government forges alliances with the rural elites.

The argument of this paper is also in contrast with that of Acemoglu et al. (2014a), who study why the chiefs in some countries retain their status after independence whereas some in other countries do not. They argue that postcolonial national governments in Uganda and Ghana chose to abolish chiefs' power because, due to the existence of strong precolonial political institutions, their power was so strong that the governments could not control it. In contrast, this paper argues that powerful rural elites are more likely to retain their status.

Baldwin (2014) empirically analyzes the devolution between African national governments and rural elites, arguing that African national leaders transfer power to win elections.[7] In this paper, the motivation of national governments to give preferential treatment to rural elites is not due to electoral competition, but rather to avoid competition for the obedience of rural residents. While electoral motives are important, they cannot be considered all-encompassing because even military regimes devolve authority to rural elites.[8]

This paper analyzes the circumstances in which national governments intensively invest in state capacity in rural regions and is related to the recent literature on the formation of state capacity (Acemoglu 2005; Besley and Persson 2009, 2010; Acemoglu et al. 2010; Acemoglu et al. 2013; Acemoglu et al. 2014b).[9] This paper regards state capacity as the ability of a government (here focusing on national governments) to compel obedience from residents, and the novel feature of this paper is that the level of state capacity depends on the capacity of the rural elites to control rural residents, which in turn depends on colonial policies of indirect rule.

This paper is also related to the literature on the roles of rural authorities in African societies (Gennaioli and Rainer 2007; Kasara 2007; Goldstein and Udry 2008; Platteau 2009; Glennerster et al. 2013; Logan 2013; Aldashev et al. 2012; Acemoglu et al. 2014c; Baldwin 2013; Fergusson 2013; Michalopoulos and

[6] Furthermore, in this paper, the rural-elite control over residents determines the rural elites' capacity to extract revenue without cooperating with national governments.

[7] Keefer and Vlaicu (2008) provide a model of electoral competition, where political parties can commit credibly to providing transfers for voters using the intermediary of influential local figures. Robinson and Verdier (2013) also develop a model of clientelism.

[8] See the case of Nigeria (Miles 1987).

[9] Acemoglu (2005) analyzes the consequence of weak and strong state capacity. Besley and Persson (2009, 2010) provide models in which a government invests in fiscal and legal state capacity. Acemoglu et al. (2010) and Acemoglu et al. (2013) regard a strong state as one that achieves a monopoly of violence, and analyze when national states attain this scenario. Acemoglu et al. (2014b) analyze the situation where the welfare of local municipalities depends not only on their own local government's state capacity but also on the capacity of other municipalities as well as that of the national government.

Papaioannou 2013). Among these works, the model proposed in this paper is closely related to that of legal dualism (formal vs customary courts) developed in Aldashev et al. (2012), which analyzes how customary law responds to a change in statutory law. While this paper resembles Aldashev et al. (2012) in the sense that formal and rural authorities overlap, they do not analyze how the structure of rural authority affects alliances between the two authorities.

This paper also belongs to the literature on legacies of colonialism (Engerman and Sokoloff 1997; La Porta et al. 1997, 1998; Acemoglu et al. 2001).[10] In particular, Lange (2004) and Iyel (2010) empirically analyze the effects of indirect rule on development. Mizuno and Okazawa (2009) present a model showing how indirect colonial rule affects postcolonial development in Africa, but their focus excludes its effects on the alliances between national governments and rural elites.

Finally, there are influential studies examining how strong rural elites formed by indirect colonial rule play significant roles in political development after independence (Migdal 1988; Mamdani 1996). In particular, the perspective of this paper is based on Migdal (1988) in that national governments and rural elites compete for the obedience of rural residents.[11] This paper formalizes Migdal's argument into a game-theoretic model in the context of taxation on cash crop sectors, which serves as a basis to understand the features of alliances between national governments and rural elites.

3 Indirect Colonial Rule and Formation of Rural Elites

Indirect rule is a form of governance in which colonial empires govern their colonies' rural regions using the authority of rural indigenous elites and rural institutions. Autonomous power is granted to the rural elites who lead these rural institutions (Crowder 1964; Cruise O'Brien 1975; Miles 1987; Migdal 1988; Mamdani 1996; Boone 2003; Lange 2009). Since the rural institutions are quite different from those at the center of a colony, indirect rule draws a sharp contrast between the center and the periphery: the former is ruled by "bureaucratic le-

[10] See also, among others, the empirical studies by Bertocchi and Canova (2002), Lange (2004), Feyrer and Sacerdote (2009), Huillery (2009), Iyel (2010), and Lee and Schultz (2012), and the theoretical studies by Congdon Fors and Olsson (2007), Nunn (2007), and Mizuno and Okazawa (2009).

[11] Migdal (1988:25) contends that government agencies operate alongside various social organizations and that these "organizations—all the clans, clubs, and communities—have used a variety of sanctions, rewards, and symbols to induce people to behave in their interactions according to certain rules or norms". Migdal (1988:24-33) further argues that residents must choose between obeying the government or these social organizations as both attempt to impose their own rules.

galism" and the latter is ruled by "customary patrimonialism" (Lange 2009:28).

Indirect rule enhanced the rural-elite power. Examining British colonial rule in Sierra Leone, Migdal (1988:110) argues that the British largely restructured indigenous authorities and significantly increased the chief's power: "the local leaders' power grew immensely through the British formalization of chiefs' duties and privileges and through the resources the British lent to that process." Granted authority to extract revenue from their subjects, the rural elites abused this authority for their own interests. Acemoglu et al. (2014c:327) argue that land laws established by colonial rule in Sierra Leone vested the chiefs with authority over land that enabled them to tax agricultural production and trade. Lange (2004:907) argues that chiefs could shape customary law to serve their own interests and that "Customary law also endowed chiefs with control over communal lands and chiefdom police, both of which could be coercively employed to dominate local inhabitants."

Colonial empires in Africa generally adopted indirect rule (Mamdani 1996:72-90), but forms and intensity of indirect rule varied across regions. Crowder (1964) argues that the power of chiefs under French colonial rule was restricted and less autonomous compared to that under British rule. This argument is consistent with the case of Hausa chiefs in Nigeria and Niger presented by Miles (1987). However, the French delegated extensive and autonomous authority to the religious leaders in the Sufi brotherhoods in Senegal (Cruise O'Brien 1975:101-9; Boone 2003:54-60). The degree of indirect rule also varied across British colonies. Based on data from former British colonies, Lange (2004) constructs an objective measure of the degree of indirect rule, which is defined as the percentage of customary court cases to total court cases in 1955. According to this measure, the degree of indirect rule varied across the British African colonies: while the degree of indirect rule was high in Malawi (81.8), Nigeria (93.4), Sierra Leone (80.8), and Uganda (79.6), it was low in Botswana (42.5), Gambia (37.3), and Zimbabwe (39.7).

In postcolonial Africa, national governments often backed the rural-elite authority. Acemoglu et al. (2014c:327) note that the land laws, on which the chiefs' control over land is based, remain in force in Sierra Leone. Migdal (1988:132) writes that:

> "With social control of the population largely vested in the chiefs' organizations, Margai [the first prime minister of Sierra Leone] "bought" social stability and security of his own tenure by refusing to attack the prerogatives of the chiefs. . . . the array of rewards and sanctions in the hands of the chiefs to maintain their social control remained very impressive."

Herbst (2000:174-6) argues that African national government leaders had "ambivalence toward traditional leaders": although some distrusted the chiefs, the national governments had to accommodate them to control the rural areas. Herbst (2000:176-7) further notes that:

> "As a result, postindependence African states were often schizophrenic in their approach to chiefs. . . . in Mauritania, Niger, and Chad, states abolished or marginalized chiefs after independence only to invite them back a few years later in the face of extraordinary difficulties in governing the rural areas."

As previously mentioned, similar alliances between national governments and rural elites can also be found in Nigeria and Senegal. However, the status of rural elites varies both across and within countries, and in some cases national governments provided no privileged status for rural elites, as we will see in Section 6.

4 A Model of Revenue Extraction with Two Competitive Authorities

As a result of colonial rule, rural residents in former African colonies faced two distinct authorities after independence: rural elites, who were obeyed by the rural residents during the colonial era, and postcolonial national governments.

Many African national governments attempted to extract revenue from cash crop farmers after independence. However, some rural elites also sought to extract surplus from cash crop production and were important competitors to the national governments. For example, rural elites in southern Ghana had formed enormous capacity to extract surplus from rural cash crop production during the colonial era. Boone (2003:156) states that

> "the indigenous political-economic elite in southern Ghana occupied powerful positions as cocoa producers and in the export-marketing circuit. . . . the cocoa elite could confront the state (and the European merchant houses) directly in struggles to expand the planter-chiefs' share of the wealth produced by the multitudes of small farmers growing cocoa in southern Ghana."

The rural elites in the Groundnut Basin of Senegal, who obtained substantial revenue from cash crop production during colonial rule, also sought to maintain their economic gain from cash crops. Cruise O'Brien (1975:127) states that, during the transition to the independence of Senegal, "there had been a brief efflorescence of privately constituted marketing cooperatives", which purchased crops from the rural elites' clients and served rural elites' private gain.

The model introduced in this section describes how a powerful rural elite impede a national government from collecting revenue.

4.1 Environment

Consider a dynamic game of complete information with three players: a national government, a rural elite, and rural farmers (treated here as a single entity). The rural farmers, who are occasionally called rural residents in the following, can grow y units of cash crops. For simplicity, we assume that the payoff obtained by the rural farmers by leaving cash crop production is sufficiently small and that they always engage in cash crop production.

The rural farmers sell their crops to either the national government or the rural elite. The national government and the rural elite announce their respective purchase prices, denoted by $p \geq 0$ and $\tilde{p} \geq 0$, respectively. The authority that has purchased the cash crops sells them at the international price normalized to one. Selling cash crops in the international market is costly. The cost incurred by the national government is normalized to zero. When the rural elite sell y units of cash crops in the international market, they incur costs of $\tilde{d}y$. Thus, the national government has no incentive to purchase the crops at prices higher than one, and the rural elite have no incentive to purchase the crops at prices higher than $1 - \tilde{d}$. If $\tilde{d} > 1$, the rural elite never have incentives to purchase the cash crops. Thus, to focus on interesting cases, we assume that $\tilde{d} \in (0, 1)$. The national government obtains $(1 - p)y$ if the rural farmers sell their crops to the national government. Similarly, the rural elite obtain $(1 - \tilde{p} - \tilde{d})y$ if the rural farmers sell their crops to the rural elite. The model assumes that the farmers cannot directly access the international market. The authority that cannot purchase the crops obtains nothing.

Rural farmers who sell their crops to the national government face sanctions from the rural elite and lose $\tilde{b}y$, where $\tilde{b} \in [0, 1)$.[12] Exogenous parameter $\tilde{b}$ represents the strength of the rural elite, for whom strong power grants the ability to impose high sanctions on residents. Sanctions by the rural elite include a ban on the use of land controlled by the rural elite and sentences based on customary law. Because indirect colonial rule largely enhanced the power of rural elites, $\tilde{b}$ can be interpreted as the degree of indirect rule.

Similarly, the national government imposes sanctions on rural farmers that sell their crops to the rural elite. To gather information on rural farmers that violate official orders, the national government needs to locate its agencies in rural regions. As the government expands its local agencies, it can detect offenders with a higher probability. Sanctions by the national government can be, for example, the withdrawal of government assistance such as farm subsidies. As the government assistance becomes more effective, a ban on access to such assistance will have increasingly severe repercussions for farmers. To implement such effective agricultural assistance, the national government needs to increase its bureaucratic capacity. Let q denote the probability that the national govern-

[12] We briefly discuss the case of $\tilde{b} \geq 1$ at footnote 16.

ment detects a farmer that sells the crops to the rural elite and let By denote the level of sanctions imposed on the offender. The farmers' expected loss from government sanctions is, therefore, $by \equiv qBy$. The variable b, which is assumed to be nonnegative, represents the national government's capacity to control rural residents, hereinafter called "coercive capacity". The level of coercive capacity is exogenously given in this section, and is endogenously determined by the national government's investment in the next section.

Preferences of all agents in the model are linear. As mentioned above, the payoff to the national government and the payoff to the rural elite are their net revenue. The payoff to the rural farmers is $(p - \tilde{b})y$, if they sell their crops to the national government, and $(\tilde{p} - b)y$, if they sell their crops to the rural elite.

The timeline of events within the model is as follows:

1. The national government and rural elite simultaneously announce their purchase prices of cash crops.
2. The rural farmers choose who will buy their cash crops.
3. The national government and rural elite impose individual sanctions on disobedient farmers.

4.2 Equilibrium

4.2.1 Farmers' Choice

The following analysis focuses on pure strategy subgame-perfect equilibria, and the game is solved by backwards induction. Given the purchase prices and sanctions, the rural farmers choose who will buy their cash crops. If they sell them to the national government, the farmers receive py and lose $\tilde{b}y$, through sanctions by the rural elite. Conversely, selling to the rural elite means receiving $\tilde{p}y$ and losing by, through sanctions by the national government. Accordingly, the rural farmers sell to the national government only if

$$(p - \tilde{b})y \geq (\tilde{p} - b)y. \tag{1}$$

In this model, both the national government and rural elite sanction a rural farmer if and only if the farmer violates their respective orders. Since either party can impose sanctions without incurring any costs, this action is weakly optimal. Even if sanctioning entails costs, reputation effects will compel them to sanction rural farmers that disobey.[13]

[13] Consider that some farmers cannot observe the cost of the imposed sanctions. In this case, the authorities might sanction a farmer to convince others that their cost of sanctioning is low. By doing so, the authorities can compel obedience.

4.2.2 Competition between the National Government and Rural Elite

Anticipating the farmers' choices, the national government and the rural elite announce their purchase prices simultaneously. From (1), the national government can purchase the farmers' cash crops only if $p \geq \tilde{p} - (b - \tilde{b})$. Similarly, the rural elite can purchase the crops only if $\tilde{p} \geq p - (\tilde{b} - b)$. The price competition between the national government and rural elite is similar to that in the Bertrand model.

Equilibrium purchase prices depend on b and $\tilde{b}$. First consider the case where $b \geq \tilde{b}$. In this case, the national government can purchase the crops at lower purchase prices than that of the rural elite as long as p is higher than $\tilde{p} - (b - \tilde{b})$. If $b \geq 1 - \tilde{d} + \tilde{b}$ $(1 - \tilde{d} - (b - \tilde{b}) \leq 0)$, the national government can purchase the crops at $p = 0$ even if the rural elite offer $\tilde{p} = 1 - \tilde{d}$, which is the highest purchase price that the rural elite can offer. Thus, in this case, $p^* = 0$ and $\tilde{p}^* \in [0, 1 - \tilde{d}]$ are the equilibrium purchase prices of the national government and rural elite, respectively. In equilibrium, the rural farmers sell their crops to the national government, and the national government obtains net revenue y.[14]

In the case where $\tilde{b} \leq b < 1 - \tilde{d} + \tilde{b}$, if the national government announces $p = 0$, the rural elite can purchase the crops and obtain a positive payoff by offering prices slightly higher than $b - \tilde{b}$. As long as $b < 1 - \tilde{d} + \tilde{b}$, the equilibrium prices p^* and $\tilde{p}^*$ must satisfy $p^* = \tilde{p}^* - (b - \tilde{b})$ and be high enough that one of the two authorities cannot raise its purchase price. Otherwise, either the national government or the rural elite will have an incentive to change the purchase price. Thus, in equilibrium, the national government and rural elite announce $p^* = 1 - \tilde{d} - (b - \tilde{b})$ and $\tilde{p}^* = 1 - \tilde{d}$, respectively, the rural farmers sell their crops to the national government, and the national government obtains net revenue $[\tilde{d} + (b - \tilde{b})]y \in (0, y)$. Note that, in equilibrium, the rural farmers must obey the national government even though the farmers' payoff is identical regardless of whether the farmers obey the national government or the rural elite. Otherwise, the national government has an incentive to raise the price.

Next, consider the case where $b < \tilde{b}$. In this case, in order for the national government to purchase the crops, p must be greater than or equal to $\tilde{p} + (\tilde{b} - b)$. When $b > \tilde{b} - \tilde{d}$ $(1 - \tilde{d} + \tilde{b} - b < 1)$, the rural elite cannot purchase the crops if the national government offers $p \in (1 - \tilde{d} + (\tilde{b} - b), 1)$. Hence, in equilibrium, the national government and rural elite announce $p^* = 1 - \tilde{d} + (\tilde{b} - b)$ and $\tilde{p}^* = 1 - \tilde{d}$, respectively, the rural farmers sell their crops to the national government, and the national government obtains $[\tilde{d} - (\tilde{b} - b)]y \in (0, y)$.

[14] In the case of $1 - \tilde{d} - (b - \tilde{b}) = 0$, we assume that the rural farmers sell their crops to the national government when the rural farmers' payoffs are identical regardless of whether they obey the national government or the rural elite. Otherwise, $\tilde{p}^* = 1 - \tilde{d}$ cannot be the equilibrium price in this case.

When $b < \tilde{b}-\tilde{d}$ $(1-(\tilde{b}-b) < 1-\tilde{d})$, the national government cannot purchase the crops if the rural elite offer $\tilde{p} \in (1-(\tilde{b}-b), 1-\tilde{d})$. In this case, the national government and rural elite announce $p^* = 1$ and $\tilde{p}^* = 1-(\tilde{b}-b)$, respectively, the rural farmers sell their crops to the rural elite, and the rural elite obtain $[(\tilde{b}-b)-\tilde{d}]y \in (0, y)$.[15]

When $b = \tilde{b}-\tilde{d}$, the national government and the rural elite announce $p^* = 1$ and $\tilde{p}^* = 1-(\tilde{b}-b) = 1-\tilde{d}$, respectively. In this case, both the national government and the rural elite can be the equilibrium buyers of cash crops. In either equilibrium, each of the two authorities receives zero net revenue. In this scenario, we consider the equilibrium where the rural farmers sell their crops to the rural elite. This assumption does not affect the main results.[16]

Summarizing the above results, the following proposition is obtained.

Proposition 1. *In the subgame perfect equilibrium:*

- *When* $b \geq 1-\tilde{d}+\tilde{b}$, $p^* = 0$, $\tilde{p}^* \in [0, 1-\tilde{d}]$, *and the rural farmers sell their crops to the national government.*
- *When* $\tilde{b}-\tilde{d} < b < 1-\tilde{d}+\tilde{b}$, $p^* = 1-\tilde{d}-(b-\tilde{b})$, $\tilde{p}^* = 1-\tilde{d}$, *and the rural farmers sell their crops to the national government.*
- *When* $b \leq \tilde{b}-\tilde{d}$, $p^* = 1$, $\tilde{p}^* = 1-(\tilde{b}-b)$, *and the rural farmers sell their crops to the rural elite.*

The equilibrium net revenue of the national government and rural elite, which are denoted by R_G *and* R_E *respectively, are given by*

$$R_G = \begin{cases} y & b \geq 1-\tilde{d}+\tilde{b}, \\ [\tilde{d}+(b-\tilde{b})]y & \tilde{b}-\tilde{d} < b < 1-\tilde{d}+\tilde{b}, \\ 0 & b \leq \tilde{b}-\tilde{d}, \end{cases} \tag{2}$$

and

$$R_E = \begin{cases} 0 & b \geq 1-\tilde{d}+\tilde{b}, \\ 0 & \tilde{b}-\tilde{d} < b < 1-\tilde{d}+\tilde{b}, \\ [(\tilde{b}-b)-\tilde{d}]y & b \leq \tilde{b}-\tilde{d}. \end{cases} \tag{3}$$

The net revenue of the national government is nondecreasing in b and $\tilde{d}$ and nonincreasing in $\tilde{b}$. When b is small or $\tilde{b}$ is large, the rural farmers have great

[15] As discussed above, in equilibrium, the rural farmers' payoff is identical, regardless of whether they obey the national government or rural elite. However the rural farmers must obey the authority who can obtain positive payoff even if it offers slightly higher prices.

[16] If $\tilde{b} \geq 1$ and $b \leq \tilde{b}-1$, in equilibrium, the national government and the rural elite announce $p^* \in [0, 1]$ and $\tilde{p}^* = 0$, respectively, and the rural elite obtain net revenue $(1-\tilde{d})y$. For simplicity, we exclude this extreme case by assuming that $\tilde{b} < 1$.

incentives to obey the rural elite, and it is difficult for the national government to compel the farmers' obedience. When $\tilde{d}$ is small, the rural elite are strong rivals to the national government in the competition to purchase cash crops because the rural elite can offer high purchase prices to the rural farmers. In these situations, the national government cannot extract revenue from cash crop production in rural regions.

5 Bargaining between the National Government and Rural Elite

As argued in Section 3, the national government and rural elite might form an interdependent relationship: the former relies on the latter to control the rural areas and, in return, guarantees the latter a degree of authority and revenue. This section extends the model of previous section to allow for negotiation between the national government and rural elite. If they reach an agreement, they jointly announce a purchase price. In this case, the national government can control the marketing of cash crops exclusively in cooperation with the rural elite.

In fact, public monopsony prevails in the domestic cash crop markets of postcolonial Africa. Bates (1981:12) notes that:

> "In Africa, public agencies are by law sanctioned to serve as sole buyers of major agricultural exports. These agencies, bequeathed to the governments of the independent states by their colonial predecessors, purchase cash crops for export at administratively determined domestic prices, and then sell them at the prevailing world market prices. By using their market power to keep the price paid to the farmer below the price set by the world market, they accumulate funds from the agricultural sector."

In the Groundnut Basin region of Senegal, the national government devolves control of the government's marketing institutions to the rural elite and thereby transfers resources extracted from the rural sectors to the rural elite (Cruise O'Brien 1975:126-41; Boone 2003:70-2).

Since the model states that the rural farmers always engage in cash crop production, the national government and rural elite can set the purchase price at zero, if they cooperate. During negotiations, they bargain over the allocation of the joint revenue y. If the negotiations collapse, they announce individual purchase prices and the events indicated in the model of previous section occur. The bargaining outcome is determined by the Nash bargaining solution (Nash 1950).

Furthermore, the level of coercive capacity of the national government is endogenously determined in this section. The national government chooses the level of coercive capacity. The cost of building coercive capacity is given by $cb^2/2$, where $c > 0$ is a cost parameter. A low population density will lead to a high cost of building state capacity because it will lead to a large cost of monitoring rural resident behavior.[17] If the region was ruled directly by colonial powers, an inherited bureaucracy that is both centralized and well trained would decrease the cost of building state capacity.[18]

The timing of events is as follows:

1. The national government invests in coercive capacity b.
2. The national government and the rural elite bargain.
3. Upon reaching an agreement, they jointly set the purchase price at zero and divide the resulting revenue y as per the agreement. If negotiations collapse, events 1, 2, and 3 in the model of previous section follow.

5.1 Equilibrium

5.1.1 Bargaining Outcomes

If the national government and rural elite reach an agreement, they monopolize the purchase of cash crops and collect revenue equal to y. The national government and rural elite bargain to divide this revenue. The agreement point is denoted by $(y - x, x)$, where $y - x$ is the national government's revenue and x is the rural elite's revenue.

First consider the case of $b \geq 1 - \tilde{d} + \tilde{b}$. In this case, from the results of Proposition 1, the national government can obtain y even though the negotiations collapse, and hence the national government does not agree to a positive transfer to the rural elite. Thus, in the bargaining solution, the national government and the rural elite obtain y and 0, respectively. We can interpret this case as the case of no alliance because the national government provides no transfer to the rural elite.

Next, consider the case of $b \in (\tilde{b} - \tilde{d}, 1 - \tilde{d} + \tilde{b})$. In this case, if the parties involved cannot agree, the national government and the rural elite obtain $[\tilde{d} + (b - \tilde{b})]y$ and 0, respectively. Thus, the Nash bargaining solution x^* solves

$$\max_x [y - x - [\tilde{d} + (b - \tilde{b})]y]x. \tag{4}$$

The solution is $x^* = (1 - \tilde{d} + \tilde{b} - b)y/2$, and the national government receives $(1 + \tilde{d} - \tilde{b} + b)y/2$. When an agreement is reached, the total wealth extracted

[17] See Herbst (2000).
[18] See Kohli (1994).

from the rural farmers increases by $y - [\tilde{d} + (b - \tilde{b})]y$. In the Nash solution, the authorities equally divide this surplus. The power of the two authorities affects the bargaining outcome through the payoff they receive when they reach no agreement. The revenue obtained by the national government after the negotiations fail is decreasing in the strength of rural elite $\tilde{b}$ and increasing in its coercive capacity b. Accordingly, a large $\tilde{b}$ and a small b lead the national government to have a weak bargaining position and result in the agreement making a large transfer to the rural elite. Similarly, large value of $\tilde{d}$ leads the national government to have a strong bargaining position and decreases the agreement's level of transfer to the rural elite.

Finally, consider the case of $b \leq \tilde{b} - \tilde{d}$. If no agreement is reached, the national government and the rural elite obtain 0 and $[(\tilde{b} - b) - \tilde{d}]y$, respectively. Thus, the Nash bargaining solution x^* solves

$$\max_x [y - x][x - [(\tilde{b} - b) - \tilde{d}]y]. \tag{5}$$

The solution is $x^* = (1 - \tilde{d} + \tilde{b} - b)y/2$, and the national government receives $(1 + \tilde{d} - \tilde{b} + b)y/2$. As with the previous case, the rural elite's share in the agreement increases in $\tilde{b}$ and decreases in b and $\tilde{d}$.

Summarizing the results, the revenues of the national government and rural elite are given by

$$R_G = \begin{cases} y & \text{if} \quad b \geq 1 - \tilde{d} + \tilde{b}, \\ \frac{1+\tilde{d}-\tilde{b}+b}{2} y & \text{if} \quad b \in [0, 1 - \tilde{d} + \tilde{b}), \end{cases} \tag{6}$$

and

$$R_E = \begin{cases} 0 & \text{if} \quad b \geq 1 - \tilde{d} + \tilde{b}, \\ \frac{1-\tilde{d}+\tilde{b}-b}{2} y & \text{if} \quad b \in [0, 1 - \tilde{d} + \tilde{b}). \end{cases} \tag{7}$$

5.1.2 Optimal National Government Investment

From (6), the national government has no incentive to choose the level of coercive capacity greater than $1 - \tilde{d} + \tilde{b}$. Hence, the national government chooses the level of coercive capacity by solving the following problem

$$\max_{b \geq 0} \frac{1 + \tilde{d} - \tilde{b} + b}{2} y - \frac{c}{2} b^2, \quad \text{subject to} \quad b \leq 1 - \tilde{d} + \tilde{b}. \tag{8}$$

From the first order conditions, the equilibrium coercive capacity b^* satisfies

$$\frac{y}{2} - cb^* \geq 0, \quad \text{with equality when } b^* < 1 - \tilde{d} + \tilde{b}. \tag{9}$$

Thus, the equilibrium coercive capacity is given by

$$b^* = \begin{cases} 1 - \tilde{d} + \tilde{b} & \text{if} \quad y/2c \geq 1 - \tilde{d} + \tilde{b}, \\ y/2c & \text{if} \quad y/2c \in [0, 1 - \tilde{d} + \tilde{b}). \end{cases} \tag{10}$$

The equilibrium revenues of the national government and rural elite are given by

$$R_G^* = \begin{cases} y & \text{if} \quad y/2c \geq 1 - \tilde{d} + \tilde{b}, \\ \frac{1+\tilde{d}-\tilde{b}+y/2c}{2} y & \text{if} \quad y/2c \in [0, 1 - \tilde{d} + \tilde{b}), \end{cases} \tag{11}$$

and

$$R_E^* = \begin{cases} 0 & \text{if} \quad y/2c \geq 1 - \tilde{d} + \tilde{b}, \\ \frac{1-\tilde{d}+\tilde{b}-y/2c}{2} y & \text{if} \quad y/2c \in [0, 1 - \tilde{d} + \tilde{b}). \end{cases} \tag{12}$$

The following proposition summarizes the above results.

Proposition 2. *When the national government and rural elite bargain, the following results hold:*

- *When $y/2c \in [0, 1 - \tilde{d} + \tilde{b})$, $b^* = y/2c$ and the revenue of each authority is given by $R_G^* = (1 + \tilde{d} - \tilde{b} + y/2c)y/2$ and $R_E^* = (1 - \tilde{d} + \tilde{b} - y/2c)y/2$.*[19]
- *When $y/2c \geq 1 - \tilde{d} + \tilde{b}$, $b^* = 1 - \tilde{d} + \tilde{b}$, and no alliance exists between the national government and the rural elite. The national government obtains all surplus arising from the cash crop sector and the rural elite obtain nothing.*

The degree to which the national government gives preferential treatment to the rural elite is represented by the rural elite's revenue as a share of total production, R_E^*/y, which is nondecreasing in $\tilde{b}$ and c, and nonincreasing in $\tilde{d}$ and y. When $\tilde{b}$ is large or $\tilde{d}$ is small, the rural elite is a strong competitor for the national government. When y is small or c is large, the national government has few incentives to build a large level of coercive capacity. In these situations, it is difficult for the national government to gain revenue if negotiations fail, its bargaining position is weak, and the rural elite receive preferential treatment from the national government.

Corollary 1. *The rural elite's revenue as a share of total production R_E^*/y, which represents the status of rural elite, is high in the following situations:*

- *The strength of rural elite (degree of indirect colonial rule) $\tilde{b}$ is large.*

[19] The negative relationship between the government's capacity to control rural regions b^* and the cost of building state capacity c is consistent with the argument by Herbst (2000).

- *The rural elite can easily sell cash crops in the international market ($\tilde{d}$ is small).*
- *The production of cash crops y is low.*
- *The cost of building coercive capacity c is large.*

When the national government does not forge alliances, that is, when $y/2c \geq 1 - \tilde{d} + \tilde{b}$, its coercive capacity is increasing in $\tilde{b}$ and decreasing in $\tilde{d}$. Thus, the existence of a strong rural elite makes the national government build intensive coercive capacity in the rural regions. This is because the national government needs to build a sufficient capacity to countervail the rural elite's control over residents.

Corollary 2. *In the case of no alliance ($y/2c \geq 1 - \tilde{d} + \tilde{b}$), the national government intensively invests in coercive capacity in the following situations:*

- *The strength of rural elite (degree of indirect colonial rule) $\tilde{b}$ is large.*
- *The rural elite can easily sell cash crops in the international market ($\tilde{d}$ is small).*

Boone (2003:33-7) argues that, if rural-elite control over residents is strong in a cash-crop producing region, the national government intensively invests in governing institutions in this region regardless of whether the government devolves the authority to the rural elites. In contrast, this model states that the comparative statics on the equilibrium coercive capacity b^* depends on whether the national government forges alliances with the rural elite. Furthermore, in this model, the government's decision on whether to forge alliances with the rural elite depends on the level of cash crop production. If y is sufficiently high, the government chooses not to forge alliances with the rural elite, and the strength of rural elite positively affects the coercive capacity. On the other hand, if y is not sufficiently high, the government chooses to forge alliances with the rural elite, and an increase in the strength of rural elite does not affect the coercive capacity.

6 Case Studies

This section examines how the theoretical predictions obtained above fit with existing case studies in the literature. Section 6.1 focuses on Miles (1987), and Sections 6.2 and 6.3 are based on Boone (2003).

6.1 Hausa Chiefs in Nigeria and Niger

Miles (1987) studies how differences in colonial policies affected the status of Hausa chiefs in Nigeria and Niger after independence. The Hausa ethnic group resides in both Nigeria and Niger. While the Hausas in Nigeria were under British rule, those in Niger were ruled by the French.

Miles describes the contrasting rule by the two empires as follows. The British ruled the Hausas through the authority of Hausa chiefs, and this indirect rule enhanced the power of Hausa chiefs. The British colonial rule vested the chiefs with "hierarchical ranks and symbols of authority" and gave them positions to control rural governing institutions (Miles 1987:238). In contrast, the French placed the chiefs under their stringent control and restrained their autonomy and authority.

The gap in Hausa chiefs' status between the two countries persisted after independence. Miles (1987:250) argues that the Hausa chiefs in Niger occupied "an unambiguously subordinate position within the political hierarchy in contrast to the autonomy or collective assertiveness that their counterparts have managed, at least in part, to retain in Nigeria."

This case study supports the theoretical prediction in Corollary 1 that the experience of intensive indirect colonial rule enhances the postcolonial status of rural elites.

6.2 Senegal: Groundnut Basin vs. Lower Casamance

Boone (2003, chap. 3) also provides case studies that show that the rural-elite control over rural residents affects the elite's status under postcolonial regimes. She compares the Groundnut Basin region and the Lower Casamance region in Senegal as follows.

The Groundnut Basin region serves as a case where strong rural elites exist and the national government cedes resources and prerogatives to these rural elites. This region is a major producer of cash crops for export. Since the mid-19th century, people in this region became adherents of Muslim leaders belonging to the Sufi brotherhoods, such as the Mouride and the Tidjane brotherhoods. Due to the massive expansion of Islam within the region and the hierarchic structure of the Sufi brotherhoods, the Muslim leaders gained significant influence over the population. During the colonial era, indirect rule by the French, which used the authority of Muslim leaders, provided resources and prerogatives for these Muslim leaders and reinforced their power over the population. After independence, Senegal's national government, led by Léopold Senghor, gave preferential treatment to these religious leaders as previously mentioned.

Senghor's governance strategy in the Lower Casamance region sharply contrasts with that used in the Groundnut Basin region. The national government did not devolve authority to rural elites, and the alliances observed in the Groundnut Basin region did not exist in this region.

Senghor's strategy reflected the social and political structure of the Lower Casamance. Since the precolonial era, no strong rural authority existed in this region, and colonial rule did not change this feature because the French authority adopted direct rule.

These cases fit well with the theoretical results of this paper. As Corollary 1 states, the status of rural elites positively depends on the strength of rural elites, and this result explains the difference in rural elite's status between the two regions.[20]

Boone (2003) also shows that the degree to which the national government invested in rural governing capacity also varies between the two regions. While Senghor's regime intensively built rural governing institutions in the Groundnut Basin region, such institutions barely existed in the Lower Casamance.

As Corollary 2 insists, in the case of no alliance, government investment in rural governing capacity is increasing in the strength of rural elite. Thus, the weak rural authority in the Lower Casamance leads to small coercive capacity of the national government.

6.3 The Case of No Alliance: Asante region of Ghana vs. Southern Côte d'Ivoire

The following comparison between the Asante region of Ghana and Southern Côte d'Ivoire provided by Boone (2003, chap. 4) also supports the results of Corollary 2. In both regions, postcolonial national governments did not forge alliances with rural elites. The difference between the two regions is the degree to which each national government invested in rural governing institutions. While the regime led by Kwame Nkrumah built intensive rural governing structure in the Asante region, the regime led by Félix Houphouet-Boigny built few rural institutions in southern Côte d'Ivoire. These different governing strategies reflect the strength of rural elites in these respective regions.

When Nkrumah chose a strategy to rule the Asante region, he faced economically and politically powerful rural elites. Asante had centralized states before colonial rule, and the indirect colonial rule by the British, who utilized the existing indigenous institutions, reinforced the rural elites' political authority. In addition, the rural elites formed powerful economic control over the rural residents as the elites went into cocoa production. In this region, debtors' land was controlled by creditors, thus the expansion of economic inequality led to

[20] In Boone (2003), the status of rural elites increases with rural-elite control over residents only when the rural elite cannot extract a surplus from rural sectors without cooperating with national governments.

the concentration of "control over land and persons in the hands of the chiefly Ghanaian planter-merchant elite" (Boone 2003:153). Concerning the power of the Ghanaian "cocoa elite", Boone (2003:156) states that

> "Not only did they control strategic positions in the internal commercial circuit – including distribution of credit to smallholders, transportation, and the building of storage depots – but as early as the 1910s a significant group also exported cocoa directly to Britain. . . . Over the course of the 1920s, 1930s, and 1940s, brokers repeatedly attempted to force up prices by refusing to sell cocoa to European trading houses."

After independence, Nkrumah attempted to control the marketing of cocoa produced in this region without forging alliances with these powerful rural elites. For this purpose, the national government intensively expanded the government's rural institutions, such as the official Cocoa Purchasing Company, to countervail the rural elites' power and eventually eliminated the rural elite.

In contrast with the case of the Asante region, Houphouet-Boigny did not confront the powerful rural elites in southern Côte d'Ivoire. Hence, he could control the marketing of cash crops without building rural government institutions. Trade in cash crops was largely left to private agents, but the national government could extract significant revenue from cash crop sectors, as Boone (2003:226) argues that

> "When the harvest was sold on the international market, private agents at all levels of the commercial circuit collected a state-mandated profit margin. The government of Côte d'Ivoire kept the rest, which added up to a very hefty margin of about 60 percent of the world market price in normal years between 1960 and 1974."

The theoretical results in Corollary 2 are consistent with these cases. The model shows that, in the case of no alliance, the existence of powerful rural elites causes the government to build a high level of coercive capacity in rural regions.

Note that the model does not assert that powerful rural elites always retain their status. Thus, the fact that Nkrumah did not forge alliances with the rural elites in the Asante region does not contradict the theoretical results. As shown in the previous section, national governments will choose to exclude powerful rural elites if cash crop production in the rural elites' territory is sufficiently high. This theoretical prediction is important for the case of the Asante region because the region was a major producer of cocoa.[21]

[21] Boone (2003) explains the case of the Asante region by arguing that national governments eliminate rural elites when the elites have stand-alone power to extract rural surplus. When

7 Conclusion

This paper presents a model of competition between a national government and a rural elite over revenue gained from cash crop production. The model shows that the national government's revenue is nonincreasing in the rural elite's power to impose sanctions on rural residents, nondecreasing in the rural elite's cost to access the international market, and nondecreasing in its own power.

Extending this baseline model to allow for bargaining between the two parties, this paper provides an explanation for when the national government cedes large resources to the rural elite. When the national government faces a rural elite with a strong capacity to compel resident obedience or easy access to the international market, it agrees to transfer a large amount of resources to the rural elite because its bargaining position is weak. High agricultural production and a low cost of building coercive capacity incentivize the national government to invest in coercive capacity, improve its bargaining position, and lead to a small rural-elite share in the agreement. Furthermore, in the case of no alliance, the national government's investment in coercive capacity increases as the economic and political power of rural elite grows. This is because the national government needs to build a sufficient capacity to countervail the rural elite's control over residents.

As many previous studies argue, indirect colonial rule is a significant source of rural-elite power. Thus, the result of the model implies that national governments will cede many resources and prerogatives to rural elites in regions where colonial powers intensively implemented indirect rule.

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rural elites have such a power, "They would be positioned for a fight with the center over the division of the rural surplus." (Boone 2003:29). This point is the major difference between this paper's argument and that in Boone (2003).

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