# TAX ME IF YOU CAN
## ETHNIC GEOGRAPHY, DEMOCRACY, AND THE TAXATION OF AGRICULTURE IN AFRICA

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## Abstract

It is typically assumed that African leaders enact policies that benefit their ethno-regional group using all types of patronage. Crop production and political power are geographically concentrated in many African countries and this paper exploits this overlap to cast doubt on this conventional wisdom. It shows, using data on 50 country-crop combinations, that cash crop farmer residing in the ruling coalition's home territory face *higher* taxes and additionally that democratic regimes impose lower taxes.

This paper shows that farmers who have few alternatives face higher taxes. African leaders have used local intermediaries to exert control over the countryside and to ensure that farmers do not support alternative candidates. It suggest that as leaders are better at selecting and monitoring these intermediaries in their home areas, they can extract more from the majority at home than abroad using taxes on cash crops, which are regionally but not individually targetable.

A widespread belief about politics in Africa is that people benefit from patronage when co-ethnics hold political power. African politicians seem to confirm this intuition when they stress their credentials as a "native son" of a place. Voters confirm it because they prefer to have a presidential candidate from their home area and because parties often receive the bulk of their support from one region and almost no support from other regions. This assumption is central to many theories of why ethnic identities become political. Most political scientists take seriously a constructivist account of ethnicity, in which identities are mobilized in the pursuit of state resources.[1] Scholars disagree on why ethnic identities, rather than any other social identity, should become the basis of competition for a piece of the national cake; however, on all accounts individuals support co-ethnics because they gain from doing so.[2] Even scholars who are critical of ethnic politics, viewing it as a means by which class competition is concealed and society inequality exacerbated, assume that individuals are better off if co-ethnics hold power than if they do not (Leys 1974, 206).

Case studies from a number of countries highlight instances in which African leaders have distributed goods to members of their own ethnic group or to their home area. For example, in Burundi the Fifth Burundian Five Year Plan allocated 98% of gross fixed capital formation to the areas surrounding the capital and to Bururi, the home province of the southern Tutsi elite, leaving 2% to the other 14 provinces of the country (Ngaruko and Nkurunziza 2000, 382). Joseph Desire Mobutu of Zaire turned his home village, Gbadolite, into an opulent city and the Ivorian president Felix Houphouët-Boigny even made his hometown the national capital.

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[1] Other explanations of why ethnic identities became salient in Africa stress colonial policies (both "indirect rule" and "divide and rule"), the influence of cultural brokers, and people's need to interpret and control rapidly changing societies (Vail 1989).

[2] There are three theories of why ethnic identities become the basis for competition over political goods instead of other identities. First, ethnic groups are more easily mobilized because of a common language or kinship ties. Second, that ethnic coalitions may form in competition for because the goods available from the state , such as roads and schools, which are generally restricted to a certain space (Bates 1983). Third, ethnic identities could be a good way of constructing coalitions to distribute resources because the ascriptive nature of ethnic identity naturally limits the size of coalitions formed on this basis (Fearon 1999). Fourth, where information about candidates' preferences is scarce, ethnic identities provide clues to voters trying to decide if a candidate shares their preferences (Chandra 2004).

Despite these dramatic examples of ethnic favoritism, it is worthwhile asking whether leaders reward co-ethnics with all kinds of patronage, which individuals are most likely to benefit, and how political institutions affect the propensity for politicians to reward their own. The answers to these questions are not obvious in part because it is surprisingly difficult to demonstrate that leaders always reward their ethno-regional base. Often all groups claim to receive less than their fair share of the national cake and it is difficult to construct a benchmark of what an unbiased allocation of resources would be.

It cannot be taken for granted that people benefit when co-ethnics hold political power for two reasons. First, both theoretical and empirical work on how incumbents allocate resources in order to ensure their political survival suggests that under certain conditions incumbents may not distribute resources to their core supporters.[3] Second, research on the allocation of resources within communities suggests that local level inequalities of wealth, education, and access to political power exert a powerful influence on who benefits from these resources (Platteau 2004; Bardhan and Mookherjee 2000). Although ethnic groups provide a useful shorthand for describing interest groups in many developing countries, viewing groups as corporate actors glosses over important internal divisions that may influence the allocation of resources across groups.

This paper examines how the ethnic identification of cash crop farmers affects how heavily governments tax them. Agricultural policy is extremely important because farmers form a majority in many sub-Saharan African countries, and high levels of agricultural taxation have contributed to massive declines in this vital sector. Farmers in the government's home area are assumed to benefit from better prices for their crops. Bates (1989, 147) argues that once Daniel arap Moi gained political power in Kenya he extracted revenue from coffee growers, who were

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[3] Work in this research area includes formal treatments of the problem (e.g. Cox and McCubbins 1986; Lindbeck and Weibull 1995; Dixit and Londregan 1996) and empirical tests in specific countries (e.g. Dahlberg and Johansson 2002; Diaz-Cayeros, Magaloni, and Estévez 2003; Khemani 2003; Miguel and Zaidi 2003). Other political scientists have examined the effect that the location of industries has on tariffs (Hiscox 2002; McGillivray 2000).

largely affiliated with his predecessor and used these resources to benefit grain growers in the Rift Valley, his home region. Similar observations have been made concerning farmers in other countries including Benin and Cameroon (van de Walle 1989; Decalo 1995).

This paper takes advantage of the fact that both crop production and ethnic groups are geographically concentrated. By matching the location of crops to the governing coalition's ethno-regional base for 50 country-crop combinations, this paper investigates whether cash crop farmers benefit from having co-ethnics in power.[4] In addition, this paper provides the first large-N test of whether regime type affects the degree to which farmers are taxed.

It establishes that, contrary to the above assumption, farmers in the government's home area face *higher* tax rates than those outside of it. I argue that citizens who have fewer alternatives pay higher taxes. The dominant means by which rulers have secured support in the countryside has been by co-opting intermediaries. Rulers are better able to select and monitor influential local allies at home than they are abroad, therefore alternative candidates are less likely to emerge in a government's home region. So rulers can avoid having to enact policies that benefit all the farmers in any given area and it is easier for them to tax their own.

The claim that citizens with fewer alternatives pay more tax is also consistent with existing theories that maintain that policies in Africa tend to be biased against the rural majority because the option of using violence to threaten the state is less available to farmers (e.g. Bates 1981). Other findings presented here confirm this intuition. Taxes are lower in democracies because farmers can threaten to remove leaders. Where there is more political competition at the local level, the tendency for leaders to tax their core more heavily is reduced, because alternative candidates are more likely to emerge. Growers of perennials face higher tax rates because they are less likely to switch to other crops (McMillan 2001).

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[4] Table 1 shows which countries and crops are covered between 1966 and 1995.

**2. Ethnicity and Patronage**

*2.1 Ethnicity and Formal Theories of Distributive Politics*

The notion that politicians should reward co-ethnics is challenged by two simple insights that appear in the literature on distributive politics (Lindbeck and Weibull 1995; Cox and McCubbins 1986; Dixit and Londregan 1996; Groseclose and Snyder 1996). First, if voters receive what Chandra (2004) calls "psychic benefits" from seeing co-ethnics in office, politicians wishing to acquire power have to expend less money and effort in securing their support. This argument suggests that voters' intrinsic preferences for candidates may mean that they receive less material benefits. Second, politicians have better information about and contacts in their home areas and can secure the same level of political support at home for less effort than they would in other regions of the country.

The central question of this literature has been whether it is more advantageous for a candidate seeking to retain power to redistribute goods towards core or swing voters. In these models, candidates allocate goods across groups through taxation and transfers. Individuals care about receiving transfers but also have non-material preferences, which have been treated as analogous to ideology or partisanship, but can also be understood as a preference for co-ethnics.[5]

Groups are distinguished from each other by the degree to which they reward politicians' expenditure on them with votes. Politicians want to transfer resources to groups with high expected "rates of return." These different rates of return arise because groups are assumed to differ in a number of ways, two of which are discussed here.[6] First, groups differ from each other

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[5] Other authors have used a similar theoretical framework in order to look at questions other than distribution. Dickson and Scheve (2003) argue that strong identity effects mean that a candidate is freer to choose her policy position and may choose one that is "completely detached" from the preferences of her supporters. La Ferrara and Bates (2001, 168) argue that when a candidate is popular, he can provide lower quality services to his subjects.

[6] Groups can also differ from each other in the degree to which they are geographically concentrated, fanatical, or a risky investment (Dixit and Londregan 1996; Cox and McCubbins 1986; Diaz-Cayeros, Magaloni, and Estévez 2003).

in the distribution of their preferences for the non-distributive policies of candidates. Groups with greater numbers of moderates (or "swing voters") receive more *ceteris paribus* (Dixit and Londregan 1996). Second, groups differ because candidates can target their resources more efficiently in some areas than others: transfers are more effectively targeted and taxes are easier to collect.[7]

There are important limitations to application of the Dixit and Londregan (1996) model to the African context. For example, in this model groups cannot engage in armed insurrection and candidates do not have the option of stealing money. However, African rulers who govern diverse populations must also consider whether people in a locality are predisposed to support them and what technologies they have available for securing that support. People do appear to have preferences for candidates of their own ethnicity that have little to do with anticipating patronage. Although much of the ordinary language of ethnicity in Africa concerns how it affects who gains and who loses in acquiring jobs and state benefits, people also discuss ethnicity in non-instrumental terms and appear to value the success of co-ethnics in realms that do not directly benefit themselves – football, for example. To argue that these intrinsic preferences exist is not to argue that people suffer from a sort of ethnic "false consciousness" or to argue that ethnic voting is a purely expressive act; rather, in deciding which candidates they support, people are willing to trade off some other good in order to select a candidate who shares their ethnicity. In practice, however, it is difficult to assess how much these trade-offs matter because they tend to coincide with instrumental motives for supporting co-ethnics.

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[7] In the Dixit and Londregan (1996, 143) model, if candidates are able to spend resources on one group (their "core") more efficiently and are at a large disadvantage in taxing non-core groups, it is possible that a candidate will tax his core supporters heavily and use the proceeds to subsidize swing groups. However, they suggest that this outcome is unlikely because "differential sensitivity" to taxes between groups is less likely than differential sensitivity to transfers.

*2.2 Ethnicity and Patronage in Africa: Intermediaries and the problem of governing the periphery.*

Governing the periphery has been a major challenge for rulers in Africa.[8] Leaders' capacity for generating political support, or even order, can vary greatly across regions. Poverty, low population densities, poor infrastructure, and ethnic diversity combine to create a situation in which controlling the rural majority is difficult. Colonial governments had to develop strategies for administering and extracting revenue from these areas with a relatively small number of European personnel; a form of rule Berry (1993) has described as "hegemony on a shoestring." Post-colonial governments have attempted to integrate ethnically diverse populations in states with arbitrarily defined borders.

A common solution to the problem of governing the countryside has been the use of intermediaries through some variant of "indirect rule" (e.g. Boone 2003). Mamdani (1996, 102-103) argues that colonial governments relied upon a form of "decentralized despotism" in which sections of the traditional leadership "hitched themselves to the colonial wagon." He suggests that conservative African regimes in the post-independence period continued this mode of governance. The need for local allies exists even where rulers resort to rule by force because coercion is more effective if leaders can acquire better information about threats (Fearon and Laitin 2003, 80). Where there are elections, case studies highlight the importance of local knowledge and contacts in ensuring support for a candidate and suggest that some individuals may be able to act as brokers, delivering the support of larger blocs (Lemarchand 1972). For example, Alila's (1986, 28) study of local politics in Bondo, a constituency in Kenya, observes that candidates who tap into local networks do better than candidates who rely upon indiscriminately distributing goods to the public as a whole.

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[8] Herbst (2001) claims that these obstacles to the consolidation of state power are so serious that rulers have less able to extend the state to the periphery than is generally assumed. Van de Walle (2001) examines how low state capacity has affected economic policy.

It may be possible for governments to acquire clients with local knowledge and influence outside their home areas, but they cannot be sure that these individuals are not false brokers. For example, Azam (2001, 10) argues that in Mali, Gen. Moussa Traoré "purchased the quietness of the Tuaregs by distributing some advantages to the member of the traditional Tuareg chieftaincy, with very little fallout to the rest of the people." He argues that as a result of this policy, the insurrection of the early 1990s was as much directed against these traditional rulers as it was against other ethnic groups in Mali.

The role of political intermediaries is worth examining because it is often difficult to know whether the benefits politicians suggest they have given co-ethnics spread beyond a small group of relatives and cronies. Politicians often find ingenious ways expropriate resources from projects designed to benefit whole communities. Local authorities often have discretion over which citizens can gain access to scarce public services (Chandra 2004). A significant amount of the money spent on these goods pays the salaries of staff whose appointment may be politicized. In addition, funds allocated by the central government for expenditure on local public goods may be captured by elites (Platteau 2004). In Uganda, Renikka and Svensson (2001, 8-9) find that primary schools received on average only 13% of central government spending for one education program and that most schools received nothing. Most of the money was "captured" by local officials at the district level and they note that "…on the day funds actually arrived in the district, well-connected citizens and local politicians got together with the district officials to decide how these should be used."

This is a realistic account of how patronage politics occurs in Africa. The capacity of rulers to co-opt rural intermediaries is part of Bates' explanation of why governments are able to impose high taxes on *all* farmers. Governments have used their capacity to discriminate between farmers in delivering access to credit and other agricultural inputs to generate political support (Bates 1981, 109).  In the Senegalese groundnut basin, Leopold Senghor's government formed alliances with chiefs and marabouts – leaders of an Islamic sect. In exchange for securing the

political support of their clients, these local notables were given access to credit and subsidized inputs. In particular, they were placed in charge of groundnut cooperatives which purchased all crops on behalf of the marketing board and which dispensed credit and subsidized inputs to farmers (Cruise O'Brien 1975).  In Kenya, for example, Kanyinga (1994, 101-102) argues that Gatundu, President Kenyatta's home area, was underdeveloped relative to the rest of Kiambu. He writes "Kenyatta's own personal dominance [in Gatundu] inhibited the rise of other patrons with an interest in attracting resources to the area, which was instead principally characterized by the appropriation of state resources for personal enrichment by his close relatives."

Because African rulers have relied on intermediaries to secure support in regions, areas that dominate the governing coalition are more likely to be underserved in the "local public goods" communities desire, like schools, roads, and hospitals, if the benefits of these goods cannot be captured by politically connected individuals.

## 3. The Taxation of Agriculture in Africa

African governments rely on the taxation of agricultural exports for two very practical reasons: cash crops are often their largest source of foreign exchange, and goods that leave the country by a port are relatively easy for the government to monitor. African governments have imposed taxes on agricultural exports in three ways.  First, governments have levied direct taxes on exports. Second, overvalued exchange rates have acted as an indirect tax on agriculture. Third, governments have set the prices paid to farmers. Farmers are effectively being taxed when farm gate prices are lower than the border price even after accounting for the costs of marketing (transportation, storage, distribution, etc.).  This study explains variation in pricing policy and controls for exchange rate overvaluation.

In almost all African countries, governments have been heavily involved in the marketing of both food and cash crops. Governments have held a direct monopsony on the purchase of agricultural exports, issued trading licenses to intermediaries, or owned processing facilities. Marketing boards (or *caisses de stabilisation*) varied in their structure and remit and most

countries inherited their marketing institutions from former colonial powers.[9] These systems were characterized by a lack of competition at the farm gate. Few marketing boards were physically involved in trade and most relied upon intermediaries, either licensed buying agents (*traitants*) or cooperatives to which smallholders were required to belong.  In these cases, the government set the prices that these intermediaries could offer farmers.

Throughout much of the post-independence period  most economists and policy makers believed government intervention was warranted because agricultural markets were inefficient and dependence on agriculture was an impediment to development. In addition, it was accepted that farmers needed insurance against volatile prices, access to credit in order to purchase agricultural inputs, and protection from exploitative middlemen. Many marketing boards supplied agricultural inputs to farmers on credit and most African governments intervened in markets for fertilizer. Although these marketing arrangements were designed to solve important problems, they often raised considerable revenue that was expropriated by governments and corrupt officials.  The World Bank and IMF began making export crop liberalization a condition of loans in the early 1980s, but significant steps towards liberalization only occurred in the early 1990s (Shepherd and Farolfi 1999, 7-8).

Because crop production is spatially concentrated, certain agricultural policies can be treated as local public goods, the benefits of which accrue primarily to one region of the country.[10] Even if not all people residing in a region grow a crop, they benefit from the positive spillovers associated with growth in agriculture. For example, according to Azam and Djimtoingar (2002, 18-19), the cotton sector in southern Chad "provides incentives for the maintenance of the road network in the South, with positive spillover effects on the local economy. Earth roads are regularly maintained there, unlike the rest of the country." Therefore,

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[9] These systems were instituted by colonists in order to extract revenue from farmers and secure monopolies for European-owned export firms (Williams 1985; van der Laan 1987).

[10] This view of pricing policies is different to that of Widner (1994, 139 & 143 ) who treats producer prices for coffee in Côte d'Ivoire and Kenya as national policies and contrasts them to local public goods such as schools.

because both political preferences and crop production are geographically concentrated in sub-Saharan Africa, the ethnic geography should affect how much governments tax crops in different areas.

## 4. Other Determinants of Taxes on Agriculture in Africa

The most prevalent explanation for why governments extract revenue from agriculture is that taxes on exports in Africa are often part of a wider pattern of redistribution of resources from rural to urban areas (Lipton 1977; Bates 1981; Lofchie 1989). This urban bias persists because the costs of collective action are lower for urban dwellers and, although they may not contribute more votes, they can more easily bring down the government. By contrast, farmers cannot organize collectively because they are often uninformed, widely dispersed, or only able to engage in political action during slow seasons (Binswanger and Deininger 1997).[11] However, the variation in the degree to which governments tax farmers across African countries requires further explanation. The existing literature suggests three additional determinants of the degree to governments extract revenue from farmers: regime type, leaders' expectations of tenure, and crop-specific characteristics. These data provide an opportunity to examine how these other variables affect taxation.

### 4.1 Democracy

In countries in which there are contested elections for national office and a rural majority, farmers can more easily punish governments for policies that harm agriculture. The prediction that taxes should be lower in democracies follows directly from existing theory about why farmers in Africa face such high taxes but it is not uncontroversial and the evidence from existing studies is contradictory. Varshney (1995) argues that democracy in India increased allowed rural producers to demand higher prices for their crops, but Widner (1994) argues, comparing Kenya and Côte d'Ivoire, that elections matter less than whether or not political elites have personally

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[11] Collective action should be particularly difficult for smallholders. I do not include a measure for the degree to which smallholders produce crops. These data are difficult to find for a cross-section of countries over time. However, the dataset excludes crops such as sugar and tea, which are generally grown on estates

invested in agriculture. It may be that democracies are able to extract more revenue from farmers because they are more willing to comply (Levi 1988).[12] Further, the impact of competitive elections, may be contingent upon other factors. Competitive elections may make affect the ability of rulers to discriminate among ethnic groups because group size and votes become more important.

*4.2 Tenure*

The literature on the political economy of taxation suggests that leaders who expect to be in office longer implement less extractive policies (Olson 1993). Leaders are aware that high taxes act as a disincentive to production and care about their future revenue stream. Leaders may who are concerned about their immediate political survival may impose higher taxes on farmers. McMillan (2001) finds that leaders who do not expect to be in office long choose more extractive policies.

*4.3 Crop-Specific Characteristics*

The biological characteristics of crops affect how much farmers are taxed. Some crops, perennials in particular, require high initial fixed investments. Growers of perennials, such as coffee and cocoa, face higher taxes because once farmers have invested in these crops the government is able to exploit their investment by levying higher taxes (see Table 2) (Besley 1997, 57). McMillan (2001) finds that taxes are higher where crops have a high ratio of sunk costs to total costs.

Other features of crops affect whether farmers can evade taxes. Farmers are more likely smuggle some crops across borders than others. It is more profitable to smuggle crops with a high value-to-weight ratio). For example, coffee's value-to-weight ratio is three times higher than that of groundnuts (see Table 2). Some crops, such as coffee beans, are more easily stored and transported than others (Akiyama et al. 2003, 18).

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[12] Cheibub (1998) finds, using a cross-national sample, that democracies and dictatorships have similar capacities to extract taxes as a percent of GDP.

Agro-ecologic conditions determine whether there are profitable alternative crops farmers can switch to in order to avoid taxation. The technology required to process a crop may also affect the bargaining power of farmers. For example, the cotton ginning process requires high initial investments, making government intervention necessary at an earlier stage. This may create a natural monopsony, putting cotton farmers at a disadvantage relative to other cash crop farmers (Baffes 2001, 170). On the other hand, Bingen (1998, 275-76) suggests that cotton farmers may have more bargaining power because the "industrial-type discipline" required to grow high quality cotton, like factory work, facilitates worker consciousness and the formation of cotton-growers unions.[13]

An ideal measure would rank crops by the ease with which growers are able to evade taxes. It seems likely that the greatest differences on this dimension are between perennial and annual crops, but there is no good way of constructing such a ranking *a priori*. Therefore, the analysis below controls for crop-specific characteristics by using fixed effects, introducing dummies for each country-crop combination.

## 5. Data and Measures

*5.1 Measuring Taxation*

Farmers are effectively taxed when governments generate revenue by offering them low prices for their crops. Most commonly used measures of the effect of government policy on agricultural incentives compare the prices farmers would receive with and without government intervention (Table 1).[14] Tax rates (*TaxN*) are defined as one minus the Nominal Protection Coefficient (NPC) which is the ratio of the producer price to the border price adjusted for marketing and transportation costs. The adjustment for marketing and transportation costs is necessary because farmers would have had to bear these costs if they marketed their goods

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[13] There are also significant differences in the international market for each of the crops in this study, however, these differences have an unclear crop-specific impact on individual farmers decisions to grow the crop.

[14] I thank Margaret McMillan for giving me the Jaeger (1992) estimates of the NPC. A full description of the variables used, sources, and summary statistics is in Table 3.

without the state.[15] Farmers are taxed if the NPC is less than one. As Jaeger (1992) shows, these taxes have a significant negative effect on agricultural output. The median value of *TaxN* for each country-crop is shown in Table 1 and the value of median *TaxN* by crop and over time is shown in Figure 1.

*TaxN* is the main dependent variable used in the analysis but data are only available from 1970 to 1987.  A cruder measure *TaxR* covers 1966 to 1995. This measure is one minus the producer price divided by the world price. This measure does not adjust for marketing and transportation costs that are specific to each case, therefore *TaxR* gives consistently higher estimates of the tax rate than *TaxN*. African governments throughout this period extracted revenue from farmers by maintaining overvalued official exchange rates.[16] Therefore, even where there were no price differentials between countries farmers could potentially gain by trading their crops at black market exchange rates.[17]

*5.2 Matching Ethnic Geography to Crop Areas*

I capture the way in which ethno-regional politics may bias taxes on crops in two ways. Crops are coded as having an *Executive Match* when the president comes from a crop-growing region and as having a *Coalition Match* when the governing coalition is drawn from the crop-growing region.[18] If ethno-regional politics affects taxes in the way suggested by the conventional wisdom, we should expect a negative coefficient on both variables because association with the governing elite should lower taxes imposed on farmers.

The *Coalition Match* variable more closely mirrors the reality of ethno-regional politics in Africa because presidents vary in the degree to which they accommodate the interests of other

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[15]Estimates of the border price are obtained by subtracting freight charges specific to each country and crop from the world price. These adjustments are common practice.  See Jaeger (1992) and Krueger, Schiff, and Valdes (1991).

[16] Overvalued exchange rates rarely benefited cash crop farmers who tend not to be consumers of imported goods.

[17]Other authors such as Krueger (1991)  who are interested in how government policy distorts the agricultural sector in general try to control for other aspects of policy including exchange rate overvalution, including distortions in the non-agricultural sector.

[18] For example, Ghanaian cocoa is as not having a coalition match  during the tenure of Jerry Rawlings,  but it has an executive match because a small amount of cocoa is produced in the Volta Region.

ethnic groups, and occasionally lead coalitions that are not composed of their co-ethnics. However, *Executive Match* has the advantage of simpler coding rules and reduces the need to make judgments about which ethno-regional group dominated the governing coalition. These alternative coding rules lead to different outcomes in a few cases however *Coalition Match* and *Executive Match* are highly correlated.[19]

The coding rules for *Executive Match* are as follows. *Executive Match* takes on a value of one when the president's ethnic group comes from a major crop-growing region, and equals zero if it does not. *Executive Match* also equals zero when the crop is dispersed throughout the country, or if there is an executive with multiple members of different ethnicities.[20] The median tax rate and number of observations are shown for dispersed crops and crops with and without an executive match are shown in Table 4. See Appendix 1 for an example.

*Coalition Match* takes on a value of one if the crop is grown in the region that dominates the governing coalition. It equals zero if the region in which the crop is produced is different from the region that dominates the governing coalition, if the crop is dispersed, or if no region dominates the governing coalition. Because good prices for crops benefit all people living in an area, *Coalition Match* takes into account a crop's region of origin rather than the ethnicity of its growers. For example, in Ethiopia under Emperor Haile Selassie, Amhara and Tigre landlords (migrants from the north of the country) owned the land in the South on which their tenants (the Oromo) cultivated coffee (Keller 1981, 537). In this case, I consider coffee as belonging in the Oromo region despite the Amhara ethnicity of the landowners.

In order to code these variables, I consulted a wide range of sources to determine the ethnicity of the head of state, what the major ethno-regional cleavages in the country were, and which groups were believed to be disproportionately represented in government. In most cases,

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[19] *Executive Match* and *Coalition Match* have a correlation coefficient of 0.85.
[20] Crops are considered dispersed when they cross a major ethno-regional cleavage between the executive's ethnic group and another groups. In the way the variable is coded crops without a match are treated as equivalent to dispersed crops.

sources made unambiguous statements about which groups dominated the governing coalition that were consistent across sources. Where possible, I determined where crops were grown using data on crop production by region, obtained from agricultural censuses, reports issued by marketing boards, sector analyses by agricultural economists, and international commodities organizations. Data on production by region was not available in all instances. In those cases I relied on statements about the location of the major crop-growing region in the sources.[21] The lack of production data by region is less of a problem for countries in which rainfall and topography limit where crops can be grown, such as the Sahelian countries.

*5.3 Measuring Democracy*

As competitiveness enables voters to sanction their representatives by selecting alternative candidates, this study codes for whether or not there are competitive multi-candidate elections for the legislature using a variable on legislative competition from Ferree and Singh (2002) (see Table 3). The variable (*Contest*) indicates whether or not legislative elections are competitive, whether or not several parties can contest elections. It takes on a value of one if there are competitive elections for the legislature and zero if there are no elections. Other measures such as Polity scores, the democracy variable used by Przeworski et al (2000), and the Ferree and Singh legislative competitiveness scale was also used.

The *Contest* variable excludes a number of concepts, such as civil liberties, that we generally associate with democracy. However, off-the-shelf assessments of the degree of democracy in a country are difficult to disaggregate into their component parts, not all of which are relevant to the theory of why political competitiveness should reduce taxes on farmers. In countries with competitive elections for the legislature, such as Zambia and Kenya, members of

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[21]  A region counted as the main crop-growing region if over 60% of the crop produced in a country was grown in that area. Where a significant amount of production (20%) crossed a major ethno-regional cleavage the crop was coded as dispersed (e.g. Cotton and Tobacco in Zambia). In most cases crop production was more concentrated than this, and these thresholds were chosen in order to ensure that countries and crops for which there were production statistics were judged by the same standards as those for which there were none.

parliament were expected to expected to bring development to their communities and could be removed for failing to do (Barkan 1976). Agricultural pricing policy was an important local issue concerning farmers and their representatives. For example, Lofchie argues that competitive elections for the legislature under a single party partly explain more farmer-friendly agricultural policies in Kenya than in Tanzania (Lofchie 1994, 154-55) Further, political competition at the local level has been shown to affect outcomes other than agricultural taxation. Bratton and van de Walle (1997) argue that plebiscitary democracies, which have elections for the legislature, are more likely to transition to multi-party politics in the future.

**6. Findings**

In order to determine how the ethnic identification of farmers and political competition affect how much crops are taxed, I use fixed effects for each country and crop combination and robust standard errors. This estimation technique presents a particularly hard test because it controls for time-invariant effects specific to each country and crop and relies on changes within each country-crop to estimate the effect of the explanatory variables on taxes. I also present findings using first-differences to demonstrate that changes in the regional base of the government correlate with changes in tax rates. Finally, I use random-effects to demonstrate some interesting time-invariant determinants of the taxation of these crops, such as the distance of the crop-growing region from the capital, the type of crop, and colonial legacy. Unless stated otherwise, the dependent variable is *TaxN*; the tax rate accounting for marketing and transportation costs.

*6.1 Ethnic Geography and Taxation*

When a president comes from a crop-growing region, farmers face taxes that are *higher* by about 22 points. Substantively this means that regions with an executive match face taxes that are higher by 76% of the median tax rate and 54% of one standard deviation in the tax rate (Table 5). This finding does not depend upon the inclusion of a particular country-crop.[22]

Changing our proxy for the ethnic identification of farmers slightly lowers the substantive size of the bias, but does not alter the basic finding that farmers associated with the current regime face higher taxes. When the governing coalition is drawn from the crop-growing region (*Coalition Match*), taxes on crops are higher by 20 points. Second, although *Executive Match* treats "in" and "dispersed" crops as identical, neither including a trichotomous variable that differentiates between "in," "out," and "dispersed" crops nor dropping all dispersed crops from the basic model alters the finding that farmers in the governing coalition face higher taxes.[23]

Altering the dependent variable used to measure tax rates from *TaxN* to *TaxR* reduces the bias against ethnically matched crops (Model 5). Estimating the model using *TaxR* as the dependent variable on all observations for which there are values for *TaxN* gives results close to those obtained when using *TaxR* on the full sample. This suggests that using *TaxR* as the dependent variable gives different results because of the way in which taxes are measured and not because *TaxR* covers a different set of cases.

Crops grown in ethnically matched regions remain more heavily taxed when the estimation method is changed. Using first-differences the coefficient on *Executive Match* remains positive and significant at conventional levels (Table 7). A change from a region with a match to one without reduces *TaxN* by 20 points (Model 9). Very few variables can predict changes in the taxation, including changes in the world price of a crop.

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[22] Dropping each of the 50 country-crop combinations from Model 1 alters the size of the coefficient on *Executive Match* by at most 4 points either way and it remains significant at the 1% level. Tables available upon request.
[23] Tables available upon request.

*6.2 Regime Type*

Political competitiveness reduces taxes on farmers. In countries with competitive elections for the legislature, taxes are lower than in those without these elections (Table 5). However, changing the method of estimation to first differences reduces both the magnitude and the significance the coefficient on competitiveness (Table 6). Changing the measure of democracy to a Polity score or the measure used by Przeworski et al (2000) does not reproduce this result. This is probably due to the way in which these measures are distributed in this sample. Of the country-crop-years included in the analysis 97% are coded as non-democracies by Przeworski's measure and 80% have a polity score of -5 or less (the polity score ranges from 10 to -10). However, when Ferree and Singh's measure of legislative competition is included instead of the *Contest* variable, the results show that increasing legislative competition reduces taxes.[24]

One concern is that this relationship between competitiveness and tax rates exists only because the taxation of agriculture declined and the number of competitive regimes rose in Africa after the 1980s because of economic crises and political changes demanded by international donors. Including a variable that indicates whether a country is under an IMF agreement in a given year taken from Vreeland (2003), demonstrates that countries under IMF agreements impose do not impose lower taxes on cash crop farmers and the coefficient on Contest remains negative and statistically significant at conventional levels. (Model 7).

The data show that regime type affects how much leaders discriminate amongst farmers. The positive coefficient on the interaction term between the *Executive Match* and *Contest* suggests that leaders in competitive regimes bias taxation less against their home regions (Model 3). The effect of moving from a region with an executive match to one without lowers the tax rate by 36 points if there are competitive elections and by 18 points if there are none. That is, competitive elections reduce a leader's bias against crops grown in his home area by about a half.

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[24] Tables available upon request.

The interaction between *Executive Match* and *Contest* remains positive when first differences are used but it is not significantly different from zero.

*6.3 Controls*

These data provide an opportunity to analyze a number of other determinants of taxes on cash crops. This section examines the effect of GDP per capita, the black market premium on exchange rates, leaders' expectations about the length of their tenure, distance from the capital, type of crop, the importance of the crop to the economy as a whole, and colonial legacy (See Table 3 for descriptions). Many of these findings are consistent with the conventional wisdom on the taxation of agriculture in Africa.

GDP per capita is negatively correlated with taxes on agriculture. A 1% increase in GDP per capita reduces the tax rate between 20 and 30 points (Table 5). This is consistent with the view that more developed countries impose lower taxes on agriculture (Burgess and Stern 1993). However, we cannot rule out the possibility that low taxes on agriculture increase GDP because they increase agricultural production. Using first-differences, changes in GDP per capita are negatively associated with tax rates but not significantly different from zero (Table 6).

The coefficient on the black market premium on exchange rates is negative, suggesting that countries with overvalued exchange rates already extract revenue from farmers in this way rather than through pricing policy. Although all models control for the degree of overvaluation it is worthwhile establishing that rulers do not tend to use exchange rate overvaluation when they come from a crop-growing region and taxation when they do not. If leaders behaved in this way we would observe low taxes and high official exchange rates where there is a match and high taxes and lower official exchange rates where there is no match. Two pieces of evidence suggest that this is not the case. First, the incidence of an *Executive Match* is not related to the degree of exchange rate overvaluation.[25] Second, countries in outside the CFA Franc Zone had discretion

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[25] Regressing *Executive Match* on the black market premium with country-crop fixed effects demonstrates that Executive Match is unrelated to the black market premium.

over their exchange rates and those inside the zone did not. If governments choice of official exchange rates was dependant on the ethnic identification of farmers, we would expect to see that countries in the CFA Franc Zone discriminate between crops with and without an executive match to a greater extent. However, the interaction term between *Executive Match* and the CFA Franc Zone dummy is not significant at conventional levels.

The evidence weakly supports the theory that leaders who expect to be in power longer implement less extractive policies (Olson 1993; McMillan 2001). Leaders expectations about the length of their tenure are measured by the average duration of leaders in power, which is calculated on a rolling basis. Increasing the average tenure of leaders by one year reduces the tax rate by about 1 point. This effect is small and its significance depends upon the other variables included in the model (Models 3 and 11).

The distance of crop-growing regions from the capital may account for why crops grown in regions associated the governing coalition face higher taxes. Proximity to the capital could make it easier for governments to extract resources from growers.[26] Crops grown in regions associated with the governing coalition are closer to the capital than those that are not. The average distance from the capital for crops coded as having a coalition match is 132 km and for those without one is 219 km.[27] However, including a measure of the distance of the crop-growing region from the capital does not affect the size and significance of regional politics variable (Model 13).

McMillan (2001) suggests that crops with a high ratio of sunk costs to total costs, specifically perennials, are taxed at higher rates and Figure 1 shows that there are differences in taxes by crop. However, the analysis here suggests that only cocoa, a perennial, is taxed at significantly higher rates than the other crops (Table 6).

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[26] However, Lofchie (1994)makes the opposite point and argues that the proximity of coffee farmers to the capital in Kenya and their great distance from it in Tanzania is one explanation for why the Tanzanian government extracts more from coffee growers.
[27] This excludes crops that are dispersed throughout the country which are coded as being zero kilometers from the capital.

If creating an infrastructure to intervene in the marketing of a crop is costly, the less important the crop is to a country's economy, the less likely it is that the government will intervene. Although governments care about the marginal benefits of taxing a crop, developing a marketing infrastructure for a crop that represents a tiny percent of all agricultural production may not be worthwhile. The importance of the crop is measured using the percentage of total agricultural land in the country that is devoted to growing the crop (*Pcagri*) and the crop's the share of the value of total exports (*Pcexport*). The coefficients on both variables are positive, but only the coefficient on the percent of total exports is statistically significant and both their substantive effects are small (Model 3).

## 7. Alternative Explanations

Although there are good reasons why a leader might expend fewer resources to secure the support of co-ethnics, the evidence presented in this paper can confirm only that they are worse off on one indicator – their crops are taxed at higher rates. I have argued that taxes on farmers in a governments home area are higher because leaders are better at selecting and monitoring vital intermediaries in their home areas. Because of this, they can extract more from the majority at home than abroad using taxes on cash crops, which are regionally but not individually targetable. Below I demonstrate that four alternative explanations, which may appear to be consistent with this finding, do not fully account for why leaders tax their home areas more heavily.

First, it may be the case that farmers in a leaders home region can be taxed more heavily because they are more likely to benefit from other transfers – such as jobs, contracts, and trading licenses – than are farmers elsewhere. Although is unlikely that other transfers from the government fully compensate farmers for the revenue extracted from them by offering them low prices for their crops, it may be the case that farmers in a governments home region benefit from these more than farmers elsewhere.

Missing transfers present a problem for all empirical studies of distributive politics that examine one policy instrument (Dahlberg and Johansson 2002; Diaz-Cayeros, Magaloni, and

Estévez 2003; Khemani 2003). Authors of these studies generally argue that the particular transfer they have analyzed is uniquely discretionary or targetable and is, therefore, ideally suited to reveal the political motives behind distributive policies. However, each one of these transfers is part of a wider scheme of taxes on and transfers to localities. Unexamined transfers may compensate communities for discrimination in the transfer analyzed.

Unless we have much better data than are currently available, we cannot say very much about the full set of benefits given and costs imposed on localities by governments. One, albeit highly imperfect, test is to look at how public investment on infrastructure affects how much farmers are taxed. If we assume that the bulk of public investment goes to a ruler's home area, it ought to be the case that where public investment is higher there is greater bias against farmers in a government's home region. However, there is no empirical support for this claim and an interaction term between public investment as a percent of GDP and *Executive Match* is not statistically significant at conventional levels (Model 2).

Furthermore, even if we believe that a leader's co-ethnics are better off in the aggregate, we need to know why co-ethnic farmers do worse on this *particular* indicator. This question is an important one because these policies affect large numbers of farmers. I argue that the answer lies in the fact that rulers can offer a few favored clients more narrowly targeted benefits. Because rulers are better at finding and managing these clients at home, they can afford to impose greater costs on the majority in their home areas by taxing their crops.

Second, it may be the case that co-ethnics can be taxed more heavily because they view the leadership as somehow more legitimate or because they view having co-ethnics in power as intrinsically valuable. As stated above, it is difficult to separate these "psychic benefits" from instrumental reasons for supporting co-ethnics. However, the fact that the degree of bias against a leader's home region is lower in more democratic regimes, suggests that material concerns play an important role in explaining why governments can tax co-ethnic farmers more heavily (Model 2).

Third, this result may arise because taxes on crops are less observable than whether governments deliver schools or cabinet positions to co-ethnics. Although agricultural policy is central to the livelihoods of many African farmers and agricultural policy can be highly politically salient, farmers may not know how much governments extract from them. However, this explanation is unsatisfactory because it relies on the assumption that farmers in a government's home area, who are equally, if not more, likely to know how much they are being taxed than farmers abroad, are taxed more heavily. Further, it is not obvious that fairness about prices is less observable than fairness in other allocations because individuals may not know if their leaders are exerting as much effort as they can to provide services. People who are likely to be uninformed about whether prices are fair are also likely to be uninformed about whether the government is doing the best it can to deliver public services.

Finally, it may be the case that, for historical reasons, most cash crop farmers are ethnically identified with the current regime and, as a result, form the core of the tax base. However, the data do not suggest that this is the case. These crops are not the only exports that could be taxed, the median percent of exports comprised by the 50 country-crop combinations in the sample is 20%. Further, changes in *Executive Match* and *Coalition Match* for each country-crop affect taxes (Table 7). Finally, the sample contains similar numbers of crops with and without an executive match (Table 4).

## 8. Conclusion

This paper has tested the theory that people benefit when co-ethnics hold political power. Using agricultural taxes, the costs of which are spatially concentrated, it showed that governments tax farmers at home more heavily than farmers abroad and that more democratic regimes tax farmers at lower rates. Although these findings may appear counterintuitive, they support the intuitive idea that rulers extract the most from those who cannot evade their grasp. Therefore, farmers in democracies face lower tax rates and growers of perennials face higher tax rates.

Farmers in a government's home region are less likely to support alternative candidates for two reasons. First, lacking the capacity to govern disparate populations across often difficult terrain, colonial and post-colonial leaders have secured support in the countryside through the co-optation of intermediaries with local knowledge. Second, rulers are better at selecting and monitoring these local allies in their home region than in other regions. Therefore, farmers in a government's home region are less likely to support alternative candidates and benefit less from forms of patronage, such as agricultural taxation, which can be used to benefit the majority of people in an area but which can not be targeted towards individuals.

The findings presented here suggest two future avenues for research. First, a natural extension of this project would be to examine whether ethno-regional politics affected the implementation of the agricultural market reforms of the 1980s and 1990s. For example, Akiyama et al suggest that ethnic politics has been an obstacle to the reform of pan-territorial pricing policies for cereal markets in Africa because of regional variation in the quality of cereals (Akiyama et al. 2001, 16). Second, these results show that in examining the way in which ethno-regional politics affects the distribution of patronage we should consider not only the degree to which goods can be targeted but also the means by which rulers at the center secure support in localities. This paper has begun that process.

**Appendix 1: Coding The Regional Politics Variable - Congo-Brazzaville, 1966-1995**

The two crops in this study from Congo-Brazzaville are cocoa and coffee. The majority of cocoa is grown in the North. In 1989, 96% of Congolese cocoa was grown in the Sangha region in the Northwest. Coffee is grown in the South. Sixty-eight percent of coffee is produced in three southern provinces Kouliou, Niari, Lekoumou, and Bouenza (Republique Populaire du Congo. Direction de la Statistique Agricole 1990, 75 Table 2-08).[28]

Congolese cocoa is coded as having an executive match for the whole period except for 1966 to 1968 and 1992 to 1995. Coffee has an executive match in 1966-68 and 1992-95. *Coalition Match* and *Executive Match* take on the same values for both crops.

In the late 1950s while Congo was still a French colony, three main parties emerged which each represented an ethno-regional group. The three ethno-regional groups were the North and Center (the Mbochi-Kouyou and Bateke ethnic groups), the Southeast (the Lari a Bakongo sub-group based in Brazzaville), and the Southwest (the Villi a Bakongo sub-group). Fulbert Youlou, a Lari, united the Bakongo vote in the Union for the Defense of African Interests (UDDIA) was Congo's president upon independence in 1960. Youlou consistently favored the Lari in the allocation of posts and "showed his disdain for Northerners" (Decalo, Thompson, and Adloff 1996, 8). Youlou's government fell in a military coup in 1963 and Alphonse Massamba-Debat (a Bakongo) succeeded him.

In 1968 Marien Ngouabi, a Kouyou, came to power after armed conflict between the governing party's youth wing and the northern-dominated regular army.[29] This coup marked a fundamental change in Congolese politics and was widely regarded as the assumption of power by the North (Clark 1994; Amphas 2000). Gen. Joachim Yhomby Opango (a Kouyou) replaced Ngouabi after members of his own army assassinated him in 1977. During this period divisions

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[28] Another 12% of coffee is produced in the Cuvette in central Congo. See Nguyen(1987) for data on 1972/73.

[29] There is a brief period from August until December 1968 during which Ngouabi was not the nominal president of the Congo. He was, however, chairman of the National Revolutionary Council.

emerged between the Mbochi and the Kouyou. In 1979 Denis Sassou Nguesso (a Mbochi) unseated Yhomby Opango in a bloodless coup.

After the transition to democracy three political parties, each with an ethno-regional base and its own presidential candidate, contested the 1992 elections. The three main parties mirrored the cleavages of the late 1950s. Sassou's party represented the Mbochi, Pascal Lissouba's stronghold was in the non-Lari southwest (the Nibolek areas), and the Lari supported Bernard Kolelas.

Lissouba won the elections and formed a short-lived coalition government with Sassou's party. The coalition broke apart and new legislative elections were called in 1993. Conflict over these elections started a civil war between these three factions and their militias. Southern politicians brokered a ceasefire in 1994 and formed a government of national unity in 1995.

**Works Cited**

Akiyama, Takamasa, John  Baffes, Donald F.  Larson, and Panes Varangis. 2003. Commodity Market Reform in Africa: Some Recent Experience. *World Bank Policy Research Working Paper* Paper 2995.

Akiyama, Takamasa, John Baffes, Donald F. Larson, and Panos Varangis. 2001. Market Reforms: Lessons from Country and Commodity Experiences. In *Commodity Market Reforms. Lessons of Two Decades*, edited by T. Akiyama, J. Baffes, D. F. Larson and P. Varangis. Washington, D.C.: World Bank.

Alila, Patrick O. 1986. *Kenya's Parliamentary Elections : Ethnic politics in two rural constituencies in Nyanza*. Nairobi, Kenya: Institute for Development Studies, University of Nairobi.

Amphas, Mbow M. 2000. *Political Transformation of the Congo*. Edinburgh: The Pentland Press.

Azam, Jean-Paul. 2001. The Redistributive State and Conflicts in Africa. *Working Paper. Center for the Study of African Economies* WPS/2001.3.

Azam, Jean-Paul , and Najiounom Djimtoingar. 2002. Cotton, War and Growth in Chad (1960-2000). *Working Paper AERC "Explaining Economic Growth Experience" Project*.

Baffes, John. 2001. Policy Reform Experience in Cotton Markets. In *Commodity Market Reforms. Lessons of Two Decades*, edited by T. Akiyama, J. Baffes, D. F. Larson and P. Varangis. Washington, D.C.: World Bank.

Barkan, Joel D. 1976. A Reassessment  of the Conventional Wisdom About the Informed Public: Comment:  Further Reassessment of "Conventional Wisdom:" Political Knowledge and Voting Behavior in Rural Kenya. *American Political Science Review* 70 (2):452-455.

Bates, Robert H. 1981. *Markets and States in Tropical Africa: The political basis of agricultural policies*. Berkeley: University of California Press.

———. 1983. Modernization, Ethnic Competition and the Rationality of Politics. In *State versus Ethnic Claims: African Policy Dilemmas*, edited by D. Rothchild and V. A. Olunsorola. Boulder, CO: Westview Press.

———. 1989. *Beyond the Miracle of the Market: The Political Economy of Agrarian Development in Kenya*. New York: Cambridge U. Pr.

Berry, Sara. 1993. *No Condition is Permanent. The Social Dynamics of Agrarian Change in Sub-Saharan Africa*. Madison: University of Wisconsin Press.

Besley, Timothy. 1997. Monopsony and Time-Consistency: Sustainable Pricing Policies for Perennial Crops. *Review of Development Economics* 1 (1):57-70.

Bingen, James R. 1998. Cotton, Democracy and Development in Mali. *Journal of Modern African Studies* 36 (2):265-285.

Binswanger, Hans P. , and Klaus Deininger. 1997. Explaining Agricultural and Agrarian Policies in Developing Countries. *Journal of Economic Literature* 35 (4):1958-2005.

Bratton, Michael, and Nicholas Van de Walle. 1997. *Democratic Experiments in Africa: Regime Transitions in Comparative Perspective*. Cambridge: Cambridge University Press.

Burgess, Robin, and Nicholas Stern. 1993. Taxation and Development. *Journal of Economic Literature* 1993 (31):2.

Chandra, Kanchan. 2004. *Why Ethnic Parties Succeed: Patronage and Ethnic Headcounts in India*. Cambridge: Cambridge University Press.

Cheibub, José Antonio. 1998. Political Regimes and the Extractive Capacity of Governments: Taxation in Democracies and Dictatorships. *World Politics* 50 (3):349-376.

Clark, John F. 1994. Elections, Leadership, and Democracy in Congo. *Africa Today* 41 (3):41-61.

Cox, Gary, and Matthew D. McCubbins. 1986. Electoral Politics as a Redistributive Game. *Journal of Politics* 48:370-389.

Cruise O'Brien, Donal B. 1975. *Saints and Politicians. Essays in the organization of a Senegalese peasant society*. London: Cambridge University Press.

Dahlberg, Matz, and Eva Johansson. 2002. On the Vote-Purchasing Behavior of Incumbent Governments. *American Political Science Review* 96 (1):27-40.

Decalo, Samuel, Virginia Thompson, and Richard Adloff. 1996. *Historical Dictionary of Congo*. Rev. ed. Lanham, MD: Scarecrow Press.

Diaz-Cayeros, Alberto , Beatriz Magaloni, and Federico Estévez. 2003. Electoral Risk and Redistributive Politics in Mexico and The United States. *Working Paper.* Stanford University.

Dixit, Avinash, and John Londregan. 1996. The Determinants of Success of Special Interests in Redistributive Politics. *The Journal of Politics* 58 (4):1132-1155.

Fearon, James D. 1999. Why Ethnic Politics and "Pork" Tend to go Together. *Working Paper. Stanford University*.

Fearon, James D., and David D. Laitin. 2003. Ethnicity, Insurgency, and Civil War. *American Political Science Review* 97 (1):75-90.

Ferree, Karen, and Smita Singh. 2002. Political Institutions and Economic Growth in Africa: 1970-1995. In *Coping with Globalization: Cross-National Patterns in Domestic Governance and Policy*, edited by S. Chan and J. Scarritt. Boulder, CA: Frank Cass.

Groseclose, Tim, and James M. Jr. Snyder. 1996. Buying Supermajorities. *American Political Science Review* 90 (2):303-315.

Hiscox, Michael J. 2002. Commerce, Coalitions, and Factor Mobility: Evidence from Congressional Votes on Trade Legislation. *American Political Science Review* 96 (3):1-16.

Jaeger, William K. 1992. The Effects of Economic Policies on African Agriculture. *World Bank Discussion Paper* 147.

Kanyinga, Karuti. 1994. Ethnicity, Patronage and Class in a Local Arena: "High" and "Low" Politics in Kiambu, Kenya 1982-92. In *The New Local-Level Politics in East Africa. Studies on Uganda, Tanzania, and Kenya*, edited by P. Gibbon. Uppsala: Nordiska AFrikainstitutet.

Keller, Edmond J. 1981. Ethiopia: Revolution, Class, and the National Question. *African Affairs* 80 (321):519-549.

Khemani, Stuti. 2003. Partisan Politics and Intergovernmental Transfers in India. *Working Paper. World Bank*.

Krueger, Anne O., Maurice Schiff, and Alberto Valdés, eds. 1991. *The Political Economy of Agricultural Pricing Policy. Vol. 4 A Synthesis of the Economics in Developing Countries*. Baltimore: Published for the World Bank [by] Johns Hopkins University Press.

Lemarchand, René. 1972. Political Clientelism and Ethnicity in Tropical Africa: Competing Solidarities in Nation-Building. *American Political Science Review* 66 (1):68-90.

Levi, Margaret. 1988. *Of Rule and Revenue*. Berkeley, CA: University of California Press.

Leys, Colin. 1974. *Underdevelopment in Kenya. The Political Economy of Neo-Colonialism, 1964-1971*. Berkeley: University of California Press.

Lindbeck, Assar, and Jorgen Weibull. 1995. Balanced Budget Redistribution as the outcome of Political Competition. *Public Choice* 52 (3):273-297.

Lipton, Michael. 1977. *Why Poor People Stay Poor: Urban Bias in World Development*. Cambridge, MA: Harvard University Press.

Lofchie, Michael F. 1989. *The Policy Factor: Agricultural Performance in Kenya and Tanzania*. Boulder, CO: Lynne Rienner.

———. 1994. The Politics of Agricultural Policy. In *Beyond Capitalism vs. Socialism in Kenya & Tanzania*, edited by J. D. Barkan. Boulder, CO: Lynne Rienner Publishers Inc.

Mamdani, Mahmood. 1996. *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*. Princeton, N.J.: Princeton University Press.

McGillivray, Fiona. 2000. Comparative Political Geography and Redistributive Politics. *Working Paper.* Yale University.

McMillan, Margaret. 2001. Why Kill the Golden Goose? A Political Economy of Model of Export Taxation. *Review of Economics and Statistics* 83 (1):170-184.

Ngaruko, Floribert, and Janvier D. Nkurunziza. 2000. An Economic Interpretation of Conflict in Burundi. *Journal of African Economies* 9 (3):370-409.

Nguyen, Gregory Tien Hung. 1987. *Agriculture and rural development in the People's Republic of the Congo*. Boulder: Westview Press.

Olson, Mancur. 1993. Dictatorship, Democracy, and Development. *American Political Science Review* 87 (3):567-576.

Platteau, Jean-Phillipe. 2004. Monitoring Elite Capture in Community-Driven Development. *Development and Change* 35 (2):223-46.

Przeworski, Adam, Michael Alvarez, Jose Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development. Political Institutions and Well-Being in the World, 1950-1990*: Cambridge University Press.

Rabushka, Alvin, and Kenneth Shepsle. 1972. *Politics in Plural Societies*. Columbus, OH: Charles E. Merrill Publishing Company.

Reinikka, Ritva, and Jakob Svensson. 2001. Explaining Leakage of Public Funds. *Working Paper*.

Republique Populaire du Congo. Direction de la Statistique Agricole. 1990. *Annuair des Statistiques Agricoles et Alimentaires 1989*. Yaounde: Republique Populaire du Congo.

Shepherd, Andrew W., and Stefano Farolfi. 1999. *Export Crop Liberalization in Africa: A Review*. Vol. 135, *FAO Agricultural Services Bulletin*. Rome: FAO.

Vail, Leroy, ed. 1989. *The Creation of Tribalism in Southern Africa*. Berkeley: University of California Press.

van der Laan, H. Laurens. 1987. Marketing West Africa's Export Crops: Modern Boards and Colonial Trading Companies. *Journal of Modern African Studies* 25 (1):1-24.

Varshney, Ashutosh. 1995. *Democracy, development, and the countryside : urban-rural struggles in India*. Cambridge & New York: Cambridge University Press.

Vreeland, James. 2003. *The IMF and Economic Development*. Cambridge: Cambridge University Press.

Widner, Jennifer. 1994. Single Party Systems and Agricultural Policies: The Cases of Ivory Coast and Kenya. *Comparative Politics* 26 (2):127-147.

Williams, Gavin. 1985. Marketing Without and with Marketing Boards: the Origins of State Marketing Boards in Nigeria. *Review of African Political Economy* 12 (34):4-15.

*Table 1: Median TaxN for Countries and Crops Covered.*

| Country | Cocoa | Coffee | Cotton | Groundnuts | Tobacco |
|---|---|---|---|---|---|
| **Benin** | | | 0.39 | | |
| **Burkina Faso** | | | 0.41 | 0.32 | |
| **Burundi** | | 0.42 | | | |
| **Cameroon** | 0.51 | -0.13 | 0.32 | | |
| **CAR** | | 0.61 | 0.38 | | |
| **Chad** | | | 0.37 | | |
| **Congo** | 0.68 | 0.40 | | | |
| **Côte d'Ivoire** | 0.46 | -0.07 | | | |
| **Ethiopia** | | 0.29 | | | |
| **Gambia** | | | 0.32 | 0.11 | |
| **Ghana** | 0.64 | | | | |
| **Guinea** | | -0.64 | | -0.53 | |
| **Kenya** | | 0.12 | | | |
| **Liberia** | 0.32 | -0.28 | | | |
| **Madagascar** | | 0.27 | | | |
| **Malawi** | | | 0.26 | 0.24 | -0.12 |
| **Mali** | | | 0.45 | 0.41 | |
| **Mozambique** | | | 0.39 | | |
| **Niger** | | | | 0.19 | |
| **Nigeria** | 0.17 | | | | |
| **Rwanda** | | 0.37 | | | |
| **Senegal** | | | 0.41 | 0.27 | |
| **Sierra Leone** | 0.45 | -0.08 | | | |
| **Sudan** | | | -0.45 | | |
| **Tanzania** | | 0.44 | 0.22 | | |
| **Togo** | 0.62 | 0.36 | 0.44 | | |
| **Uganda** | | 0.60 | 0.15 | | |
| **Zaire** | | 0.46 | | | |
| **Zambia** | | | -0.19 | | -0.08 |
| **Zimbabwe** | | | -0.32 | | 0.04 |
| **All Countries** | 0.53 | 0.24 | 0.31 | 0.20 | -0.04 |
| Source: Jaeger(1992) | | | | | |

**Table 2: Crop Characteristics**

| Crop | Perennial/ Annual | Time until Productive [30] | Dollars per Metric Ton[31] | Average Annual Rainfall in Growing Regions (tenths of a mm) |
|------|-------------------|----------------------------|-----------------------------|-------------------------------------------------------------|
| Cocoa | Perennial | 4 to 5 years | 1622 | 1542 |
| Coffee | Perennial | 3 to 5 years | 2008 | 1476 |
| Cotton | Annual[32] | 135 to 180 days | 1396 | 836 |
| Groundnuts | Annual | 120 to 150 days | 694 | 803 |
| Tobacco | Annual | 70 to 130 days | 2272 | 821 |
| Sources: Encyclopedia Britannica Online, Food and Agricultural Organization (2001), IMF (various years), WeatherDisc Associates (2003) | | | | |

**Figure 1: Median TaxN by Crop over Time**



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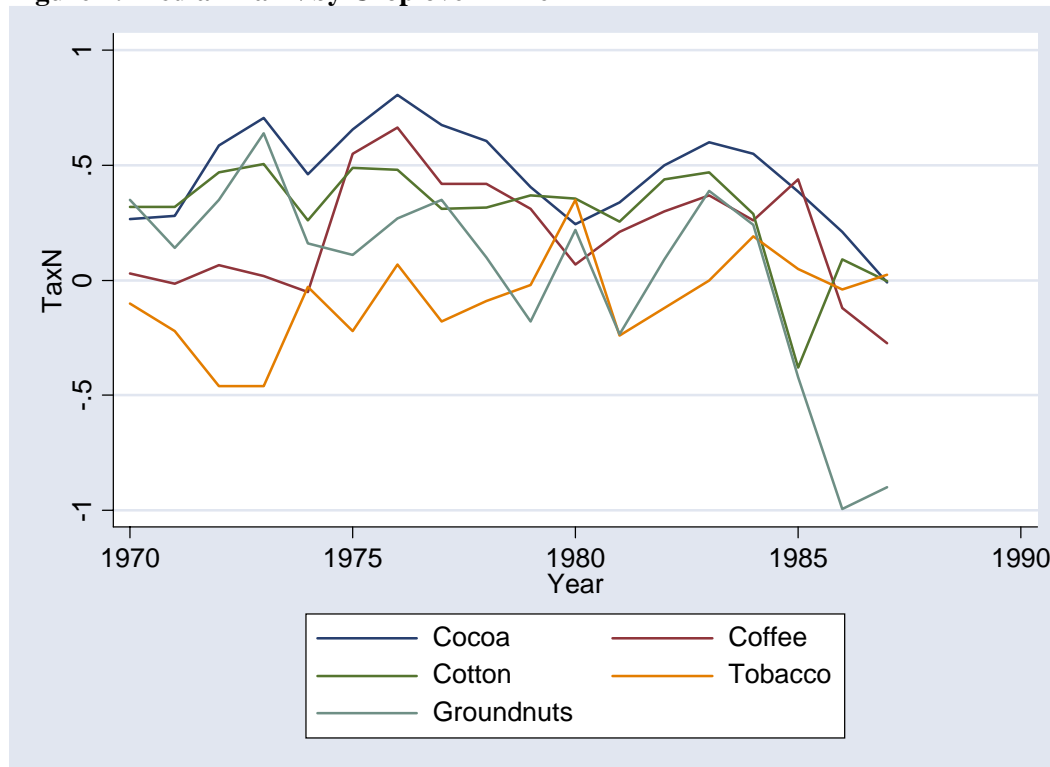
[30] Encyclopædia Britannica. 2004.  Encyclopædia Britannica Online. 12 April 2003  <**http://www.eb.com**>.

[31] The estimates for coffee use the price of Robusta rather than Arabica.

[32] Cotton is grown as a perennial in some areas.

**Table 3: Variables and Summary Statistics**

| Variable | Definition | Source | Units | Mean | Min | Max | Obs |
|---|---|---|---|---|---|---|---|
| TaxN | 1-Nominal Protection Coefficient (NPC) The NPC is the ratio of the producer price to the border price adjusted for marketing costs. Outliers were deleted in calculating summary statistics for *TaxN* and *TaxR*. | Jaeger (1992) and McMillan (1991) | . | 0.82 | 0.15 | 2.47 | 811 |
| TaxR | 1- Ratio. Ratio is the farm gate price divided by the world price. A cotton ginning outturn ratio of 1/3 was used to convert cottonseed to lint cotton. | Food and Agricultural Organization (FAOSTAT), and IMF, International Financial Statistics | . | 0.39 | 0 | 4.71 | 1476 |
| Regout | *Regout* equals 1 if the main region in which the crop is produced is different from the region that dominates the governing coalition and 0 otherwise. | Various Sources | Dummy | 0.51 | 0 | 1 | 1478 |
| Reg | Equals -1 if the region of the country in which the crop is produced is the same as the region that dominates the governing coalition, equals 1 if the region is different, and equals 0 otherwise. | Various Sources | Dummy | 0.07 | -1 | 1 | 1476 |
| Execout | Equals 1 if the president does *not* come from a region in which the crop is produced and equals 0 otherwise. | Various Sources | Dummy | 0.47 | 0 | 1 | 1478 |
| Sleg2b | Takes on six values: 1. No Executive/legislature; 2. Unelected Executive and legislature; 3. Selected, one candidate; 4. One party, multiple candidates; 5. Multiple parties are legal, but only one won seats (because other parties did not exist, compete or win seats); 6. Multiple parties competed and won seats (but one party won 75 percent or more of the seats); 7. The largest party received less than 75 percent of the seats. | Africa Research Program, Harvard University (ARP) and Ferree and Singh | Dummy | 3.07 | 1 | 6 | 1487 |

| Contest | Equals 1 if there is political competition at the local level and 0 otherwise (i.e. Sleg2b ≥ 3). | Constructed from legislative competition (sleg2b) ARP and various sources | Dummy | 0.61 | 0 | 1 | 1504 |
|---|---|---|---|---|---|---|---|
| Avdur | Average duration of the tenure of leaders in a country. This is calculated on a rolling basis. | Constructed from | . | 10.39 | 1 | 33 | 1521 |
| Avrain | Average rainfall in the region in which crop X is grown in year Y (sub national average of nearest weather stations). | World Weather Disc | . | 1113.5 | 0 | 4201 | 1133 |
| Blk | Variant of Black Market Premium (WB). log(BMPWB/100+1); This variation on BMP is constructed using BMPWB measure. BMPWB is 100*(Black Market XR-Official XR)/OfficialXR | ARP | . | 0.32 | -0.24 | 3.89 | 1318 |
| Cfa2 | Equals 1 if a country is a member of the CFA Franc zone in a given year and 0 otherwise | ARP | Dummy | 0.41 | 0 | 1 | 1530 |
| Gdpch | Real per capita PPP GDP chain index. Purchasing power parity gross domestic product calculated using chain international price index. | ARP | . | 860.8 | 290 | 2723 | 1329 |
| Imf | Equals 1 if a country was enrolled in an IMF program in that year. | Joyce (2003) | Dummy | 0.55 | 0 | 1 | 560 |
| Pcagri | Percent of total agricultural land area devoted to crop X in year Y. (Note: agricultural land area is defined as arable land, land devoted to permanent crops and land devoted to permanent pastures). | Food and Agricultural Organization (FAOSTAT) | . | 2.09 | 0 | 20 | 1530 |
| Pcexport | Percent of Total Value of Exports of Crop X in year Y. | World Trade Analyzer (Statistics Canada) & United Nations Handbook of Trade Statistics | . | 19.7 | 0 | 98.8 | 1320 |
| Lndistance | Is ln(dist+1) where dist is the distance from the administrative capital to a major town in the main crop-growing region. Equals zero if the region contains the capital. | Bang (1998) | . | 3.25 | 0 | 7.11 | 1530 |

**Table 4:  Median Tax Rates (TaxN) by Type of Region**[33]

|  | **Executive Match** | **Dispersed Crops** | **No Executive Match** | **All Crops** |
|---|---|---|---|---|
| **Cocoa** | 0.56 | — | 0.40 | 0.53 |
|  | *N= 113* | *N=0* | *N=125* | *N=240* |
| **Coffee** | 0.22 | 0.37 | 0.17 | 0.24 |
|  | *N=166* | *N=74* | *N=235* | *N=480* |
| **Cotton** | 0.22 | -0.41 | 0.35 | 0.31 |
|  | *N=203* | *N=36* | *N=218* | *N=480* |
| **Groundnuts** | 0.35 | 0.06 | 0.25 | 0.20 |
|  | *N=63* | *N=90* | *N=57* | *N=210* |
| **Tobacco** | -0.07 | — | — | -0.04 |
|  | *N=69* | *N=0* | *N=7* | *N=90* |
| **All Crops** | 0.28 | 0.29 | 0.31 | 0.29 |
|  | *N=614* | *N=200* | *N=642* | *N=1426* |

Note: A crop is coded as having an executive match if the executive comes from a crop-growing region and crop production is not dispersed throughout the country.

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[33] N is the number of observations in the data set, *Executive Match* is coded for 1456 out of 1500 observations in the data set.

**Table 5: Country-Crop Fixed Effects**

| | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] |
|---|---|---|---|---|---|---|---|---|
| Dependent Variable | *TaxN* | *TaxN* | *TaxN* | *TaxN* | *TaxR* | *TaxN* | *TaxN* | *TaxN* |
| Executive Match | 0.23*** | 0.30*** | 0.36**** | | 0.07*** | 0.23*** | 0.22*** | 0.24*** |
| | (0.05) | (0.07) | (0.07) | | (0.03) | (0.05) | (0.05) | (0.06) |
| Contest | -0.08* | -0.03 | 0.05 | -0.09** | -0.02 | -0.08* | -0.06* | -0.09** |
| | (0.04) | (0.05) | (0.05) | (0.04) | (0.01) | (0.04) | (0.04) | (0.04) |
| Black Market Premium | -0.19** | -0.19** | -0.10* | -0.19*** | -0.10** | -0.20*** | -0.18** | -0.21*** |
| | (0.07) | (0.07) | (0.05) | (0.07) | (0.04) | (0.07) | (0.07) | (0.07) |
| Log GDP per capita | -0.25*** | -0.25*** | -0.32*** | 0.25*** | -0.04 | -0.20*** | -0.27*** | -0.17* |
| | (0.09) | (0.09) | (0.10) | (0.09) | (0.04) | (0.07) | (0.09) | (0.10) |
| Executive Match *Contest | | -0.12* | -0.18** | | | | | |
| | | (0.07) | (0.07) | | | | | |
| Share of Agricultural Land (*Pcagri*) | | | 0.04** | | | | | |
| | | | (0.02) | | | | | |
| Percent of Total Exports (*Pcexport*) | | | 0.00* | | | | | |
| | | | (0.00) | | | | | |
| Average Tenure | | | 0.00 | | | | | |
| | | | (0.00) | | | | | |
| Coalition Match | | | | 0.20 | | | | |
| | | | | (0.06) | | | | |
| Log of World Price | | | | | | 1.76* | | |
| | | | | | | (0.59) | | |
| IMF Agreement | | | | | | | -0.04 | |
| | | | | | | | (0.03) | |
| Public Infrastructure | | | | | | | | -0.01* |
| | | | | | | | | (0.00) |
| Executive Match * Public Infrastructure | | | | | | | | -0.00 |
| | | | | | | | | (0.00) |
| Constant | 1.88*** | 1.83*** | 2.12*** | 1.86*** | 0.86*** | 1.76*** | 1.99*** | 1.40** |
| | (0.60) | (0.59) | (0.67) | (0.60) | (0.25) | (0.59) | (0.63) | (0.63) |
| *N* | 748 | 748 | 604 | 748 | 1163 | 748 | 748 | 707 |
| *Groups* | 50 | 50 | 49 | 50 | 50 | 50 | 50 | 47 |
| *Adj-R²* | 0.48 | 0.48 | 0.45 | 0.47 | 0.58 | 0.48 | 0.48 | 0.50 |

Note: Robust standard errors are in parentheses. *p<0.10 **p<0.05 ***p<0.01

**Table 7: First Differences (*TaxN*)**

|  | [9] | [10] |
|---|---|---|
| ΔExecutive Match | 0.20*** | 0.19** |
|  | (0.07) | (0.08) |
| ΔContest | 0.01 | 0.00 |
|  | (0.05) | (0.06) |
| Δ Black Market Premium | -0.05 | -0.05 |
|  | (0.05) | (0.05) |
| ΔLog GDP per capita | -0.01 | -0.01 |
|  | (0.15) | (0.15) |
| ΔExecutive Match*Contest |  | 0.01 |
|  |  | (0.09) |
| Constant | -0.02 | -0.02 |
|  | (0.01) | (0.01) |
| *N* | 688 | 688 |
| $R^2$ | 0.01 | 0.01 |

Note: Standard errors are in parentheses. *p<0.10 **p<0.05 ***p<0.01

**Table 6: Random Effects (*TaxN*)**

| | [11] | [12] | [13] | [14] |
|---|---|---|---|---|
| Executive Match | 0.16*** | 0.23*** | 0.24** | 0.19*** |
| | (0.04) | (0.06) | (0.06) | (0.05) |
| Contest | -0.09** | -0.04 | 0.03 | -0.08** |
| | (0.03) | (0.04) | (0.04) | (0.03) |
| Executive Match * Contest | | -0.11* | -0.15** | -0.24*** |
| | | (0.06) | (0.07) | (0.06) |
| Black Market Premium | -0.18*** | -0.19*** | -0.08* | -0.18*** |
| | (0.03) | (0.03) | (0.05) | (0.04) |
| Log GDP per capita | -0.24*** | -0.24*** | -0.26*** | 0.19*** |
| | (0.06) | (0.06) | (0.07) | (0.05) |
| Cocoa | 0.54*** | 0.52*** | 0.45*** | 0.54*** |
| | (0.12) | (0.12) | (0.11) | (0.12) |
| Coffee | 0.21** | 0.20** | 0.17** | 0.22** |
| | (0.10) | (0.10) | (0.10) | (0.10) |
| Cotton | 0.19* | 0.18* | 0.11 | 0.18* |
| | (0.10) | (0.10) | (0.10) | (0.10) |
| CFA Franc Zone | | | 0.08 | -0.07 |
| | | | (0.07) | (0.08) |
| Share of Agricultural Land (*Pcagri*) | | | 0.01 | |
| | | | (0.01) | |
| Average Tenure | | | 0.00 | |
| | | | (0.00) | |
| Log of Distance from the Capital | | | 0.03** | |
| | | | (0.01) | |
| CFA * Executive Match | | | | -0.08 |
| | | | | (0.08) |
| Constant | 1.65*** | 1.63*** | 1.61*** | 1.60*** |
| | (0.43) | (0.43) | (0.44) | (0.42) |
| *N* | 748 | 748 | 604 | 748 |
| Groups | 50 | 50 | 49 | 50 |
| $R^2$-Within | 0.07 | 0.07 | 0.07 | 0.07 |
| $R^2$-Between | 0.30 | 0.30 | 0.36 | 0.32 |
| $R^2$-Overall | 0.19 | 0.19 | 0.21 | 0.20 |
| Note: Standard errors are in parentheses. *p<0.10 **p<0.05 ***p<0.01 | | | | |