



# The political economy of timber taxation: The case of Ghana

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## ABSTRACT

We analyze the political economy of timber taxation in Ghana. Our results show that politicians maintain control over allocation of timber rights, that taxation constitutes an insignificant share of the value of the timber resource, and that the distribution of timber revenues hardly contributes towards the official forest policy justifications. Our analysis suggests that politicians wield control over rent-seeking opportunities that are exchanged for political support through patron–client networks. This speaks to a larger literature on why governments waste resources and constitutes an argument for increased attention to the political economy underlying natural resource policies.

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## 1. Introduction

More than 80% of the forest area in tropical developing countries is under central government administration (FAO, 2006). For forests with timber production, this is typically organized under a concession regime, i.e. a contract between the government and another party, typically a private company, permitting the harvest of specified resources from a given area in return for fees and taxes. Yet, studies of timber taxation in developing countries have consistently revealed a low level of taxes relative to the value of the harvest under such regimes. This results in scarceness of revenues available for financing of forest management and conservation, and few contributions from the forest sector towards broader societal objectives such as poverty reduction and economic growth (Oksanen, 2004). Further, low pricing induces inefficiencies in resource use by concessionaires and wood processing firms leading to further deforestation (Richards, 1995; Karsenty, 2000). Timber fiscal reforms have been pursued, frequently with donor support, but scholars have consistently portrayed a low tax take relative to the value of the resource (Repetto and Gillis, 1988; Vincent, 1990; Grut et al., 1991; Gray, 2002; FAO, 2002; Barbone and Zalduendo, 2000; Kim et al., 2006; Oksanen, 2004; Colchester et al., 2006; Krelove and Melhado, 2010; Palmer and Bulkan, 2010).

This apparent paradox invokes a larger literature that focuses on why governments waste natural resources. Various explanations for this conundrum have been put forward. In some cases, low official forest rent capture has been attributed to war and civil unrest, e.g. in the case of Liberia (Renner, 2005; Schwidrowski and Thomas, 2005). In other cases,

it is attributed to ignorance, lack of information or irrational behavior of politicians and centrally located bureaucrats (Ross, 1999; Grut et al., 1991; Gray, 2002; Hardner and Rice, 1999). It accords with neo-classical economic theory, which assumes that actors in markets are rational, while those in political arenas are not. Yet, such differentiation is theoretically problematic and generally not supported empirically (Bates, 1983; Ross, 1999). Or, as formulated by William Ascher: “When we focus on the most important natural resources, involving millions or even billions of dollars of resource rent, it is rarely plausible that top government officials would not devote sufficient attention and expertise to understanding the implications of natural-resource policy options” (Ascher, 1999: 28). Yet again other scholars attribute low official forest rent capture to lack of administrative capacity, i.e. inability to implement and enforce legislation (Merry and Amacher, 2005; Contreras-Hermosilla and Peter, 2005; Richards et al., 2003; Amacher, 2006; Tacconi, 2007). These two explanations appear to provide the rationale for most efforts of bilateral and international donor agencies to reform forest fiscal regimes<sup>1</sup> (Oksanen, 2004).

Other scholars explain inefficient taxation regimes, and indeed other forest policies, as choices made in response to organized political pressure, notably by the timber industry. Board (1995) suggests that in Indonesia a few large timber conglomerates have captured the policy making process, which has resulted in low fees,

<sup>1</sup> Recommendations typically involve a shift from stumpage fees/royalties to area based fees set by competitive bidding or a combination of an area based fee with other taxation instruments (Hardner and Rice, 1999; Gray, 2002; Karsenty, 2000). Governments that are revenue constrained may choose strategies that enhance the harvest and reduce the taxation level (Merry and Amacher, 2005; Amacher, 1999). Governments faced with illegal logging and corruption may assign royalty rates at below the socially optimal level to reduce the incentives for evasion (Amacher et al., 2007).

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and that a major share of collected timber revenues are re-distributed to concessionaires as reforestation subsidies. Along similar lines Karsenty (2000) and Gray (2002) suggest that many governments in sub-Saharan Africa are confronted by multinational timber companies with considerable financial strength that prevent, or delay, the adjustment of fees.

This paper suggests an explanation that appears less well recognized in the timber taxation literature; that the taxation regime, and the way it is implemented, represents the interests of politicians. Politicians want to stay in power. The underlying motive may be ideology, personal aggrandizement, the interests of particular groups or a combination; the particular motive being less important. To maintain power they need political support, and they use natural resources, including timber, to curry such support. By exercising discretionary control over the timber resource and maintaining forest fees at a low level relative to the value of the resource, politicians control access to favorable rent-seeking opportunities that are exchanged for various forms of political support through patron–client relationships. What appears as a failure to tax or reform the taxation regime may in fact constitute a success from the point of view of the politicians in charge.

The paper supports this explanation through a case study of the political economy of timber taxation in post-independence Ghana with emphasis on the period after the adoption of the 1994 Forest and Wildlife Policy which called for fiscal reforms in order to capture the full resource rent for the benefit of all segments of the Ghanaian society (GoG, 1994). Specifically, the paper attempts to empirically substantiate the following three propositions: (i) politicians in Ghana have maintained *de facto* control over timber rights allocation, (ii) taxation policies and their *de facto* implementation have maintained a low taxation level, and (iii) timber revenues are distributed to beneficiaries with few requirements for documentation and use and the main share of revenues is *de facto* appropriated by the forestry administration.

Confirmation of propositions (i) and (ii) would indicate that politicians have favored policies that reproduce their discretion over the distribution of value accruing from timber exploitation, whereas confirmation of proposition (iii) would indicate that only a minor share of this value is directed towards uses that support the official forest policy justifications of forest conservation, economic development and equitable benefit sharing. To support these objectives, we would expect that the forest policies provide: (i) incentives to the logging and timber processing industry for efficiency in timber harvesting and processing by pricing the resource at a level that counters the costs to society of exploiting it; and (ii) incentives to forest fringe communities for conserving and managing forests and on-farm timber trees by assuring them a say over the fate of the trees and that they benefit from their exploitation.

The choice of case is justified on several grounds. First, the Ghana case offers a unique opportunity to analyze the taxation regime over a long time span, basically since Ghanaian independence in 1957, since its development is well documented. Second, Ghana has, at least since 1992, been stable and made important progress in terms of democratic institutions and forest fiscal reform efforts have thus not been impeded by war, coups or civil unrest. Finally, Ghana is frequently portrayed as among the developing countries that have made most significant progress in terms of sustainable forest management, and in terms of human and institutional capacity development (FAO, 2002; ITTO, 2006), thereby in many respects serving as a “best” case scenario in relation to the other explanations offered for inefficient forest taxation.

## 2. Background: exploitation and taxation of timber in Ghana

The ownership to forests and trees in Ghana rests with the Stools, the traditional and officially recognized land-owning communities

with the stool-holder, the Chief, acting as the custodian of the land (Kasanga and Kotey, 2001; Aryeetey et al., 2007; Boni, 2005). Yet, in 1962, the newly independent government passed the Concessions Act which vested “all rights with respect to timber or trees in the President in trust for the Stools concerned” (GoG, 1962: 16(4)). Since then a centralized timber governance regime has been implemented with the government in charge of allocation of timber rights to private firms, setting of fees and taxes, the rules that guide timber extraction, their monitoring, collection of revenues and revenue distribution.

The 1994 Forest and Wildlife Policy, which was facilitated by international and bilateral donors, called for competitive bidding of all timber rights in order to capture the full value of the resource (GoG, 1994). Yet, the 1997 Timber Resources Management Act did not introduce competitive bidding, but a set of technical criteria and a Timber Rights Evaluation Committee. It further established Timber Utilization Contracts (TUCs) as the only valid timber right, and dictated the conversion of all earlier timber rights to TUCs within a period of six months after the coming in force of the act (TRMA, 1997: s. 19). It was only in 2003, after further donor pressure, that competitive bidding for logging rights was enacted (TRMAR, 2003).

The current fiscal regime consists of seven fees/taxes (Table 1). There are three fees charged in the forest (“upstream” fees), the concession rent, the stumpage fee and a timber rights fee, and three export (“downstream”) charges, the 2% and 1% export levies and a levy charged on exports of air-dried lumber. Moreover, timber firms pay corporate tax. Revenues from the concession rent and the stumpage fee are considered as stool land revenue and shared with 10% to Office of the Administrator of Stool Lands (OASL), and the remaining part between District Assemblies (55%), Stools (25%) and Traditional Councils (20%) (GoG, 1992).

In the period 1890–1940, the timber harvest in Ghana did not exceed 100,000 m<sup>3</sup> p.a. (Amanor, 1999). Large scale commercial timber exploitation commenced only after World War II and the export harvest quickly soared to 1.5–2.0 million m<sup>3</sup> p.a. (Amanor, 1999; Asante, 2005). Since 1960, from when statistics are available, the recorded timber harvest has fluctuated between 0.5 and 2.0 million m<sup>3</sup> p.a. (Fig. 1). The harvest drops drastically in the late 1970s and early 1980s, as a result of the international and domestic economic recession, but rises again from 1983 in response to measures under the Structural Adjustment Programme (Hansen et al., 2009). Since 1995 the recorded harvest, especially the off-reserve harvest, has gradually declined. Yet, there is considerable illegal (unrecorded) logging. For the period 1996–2005, the actual harvest is conservatively estimated at 3.3–3.7 million m<sup>3</sup> p.a., i.e. more than three times the recorded harvest (Hansen and Treue, 2008).

## 3. Methods and data

### 3.1. Timber right allocations

To substantiate the proposition of politicians' discretionary control over timber rights allocation, we gather data on allocated timber rights and the process of allocation. Due to the shortcomings of the available statistics, this is done by synthesizing statistics from various sources on the areas allocated under different types of exploitation rights for the year 2005, which we will use as an exemplary reference year.

Some information on allocation of exploitation rights is readily available from the website of the Forestry Commission, but an initial comparison with secondary information (Danso and Opoku, 2004) suggests this information to be incomplete and largely outdated. Attempts have been made to obtain such data through letters and personal approach to leading staff of the Ghana Forestry Commission, but apparently no such central overview exists. Consequently, other methods have been applied. This included a review of secondary sources (reports), various materials (letters, minutes, tables)

**Table 1**  
Overview of the timber fiscal regime in Ghana.

Fee/tax	Basis	Revision of fee/tax	Current fee/tax rate	Collection and beneficiaries
Concession rent	Annual fee charged per hectare of concession area	By Legislative Instrument. Latest revision in 1998	Forest reserves: € 1,200 per ha per year (USD 0.13) Off-reserves: € 1,000 per ha per year (USD 0.11)	Revenue is collected by the Forestry Commission and shared with 10% to Office of the Administrator of Stool Lands. Remaining part shared between District Assemblies (55%), Stools (25%) and Traditional Councils (20%)
Stumpage fee	Species-specific volume fee charged after felling	By administrative order. Fee rates pegged to FOB export prices for air-dried lumber. Latest revision in 2003	Between € 24,000 and € 508,000 per m <sup>3</sup> (USD 2.6 – 56), depending on species	Revenue is collected by the Forestry Commission, which deducts 60% (reserves) and 40% (off-reserves) as payment for its management services. Remaining part shared as described above for the concession rent
Timber rights fee	Annual lump-sum fee for the entire concession area	A revision formula adjusts the fee annually for inflation	Fee is set through competitive bidding	Revenue is collected by the Forestry Commission. Distribution is unsolved
2% and 1% export levy	Levy charged on declared FOB value of export consignment	By law	<i>Ad valorem</i> charge	Revenue is collected by the Forestry Commission, which retains the full revenue
Air-dried lumber levy	Fee charged on all export consignments of air-dried lumber. Applies to 9 species	By law	<i>Ad valorem</i> charge; 10–30% of declared FOB export price of consignment, depending on species	Revenue is collected by the Forestry Commission and goes into the Forest Plantation Development Fund, administered by the Forestry Commission
Corporate tax	Tax charged on company turn-over after deduction of all outgoings and expenses incurred in the production of income.	By law	30% of company turn-over. Firms granted free zone status are exempted for corporate tax in 10 years, and pay a reduced rate of 8% hereafter. This rate is also paid by companies producing “non-traditional” products	Revenue is collected by Ministry of Finance and Economic Planning and goes into the Government of Ghana’ Consolidated Fund

Notes:

1. An additional levy, the national reconstruction export levy, was charged between 2001 and 2005 on lumber (7%), plywood and veneer (3%).
2. All figures in Ghanaian cedis (€) are in old cedis. 1 USD = 9077 € (June 2005).

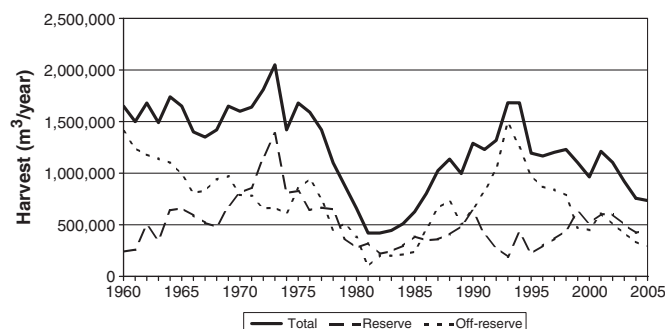
prepared by the Ghana Timber Rights Evaluation Committee, and various datasheets (in electronic and hardcopy format) supplied by staff of the Forestry Commission in the course of the research. These sources were used to construct a database of existing timber rights as of 2005. The database holds information for each timber right on the location, extent, type (allocation method) of exploitation right, beneficiary and the time period. This database was subsequently used to prepare simple queries and cross-tabulations.

### 3.2. Taxation level

To substantiate the proposition of a low taxation level, we undertake a detailed study of timber taxation as it unfolded in 2005, and subsequently relate it to the entire post-independence period. Our approach is simply to relate the 2005 timber tax revenues to the stumpage value of the harvest in that year. Stumpage value is defined

as the maximum amount that the most efficient logging company would be willing to pay the forest owner for the right to harvest a tree; assuming “first-best conditions”, i.e. prices of timber are set in a freely operating market and a large number of firms are in competition (Day, 1998). The stumpage value thus expresses the value of the resource when put to its best use. Because there is no market for standing timber in Ghana, the stumpage value must be calculated as the price of a tree log when ready for export (called the Free On Board (FOB) price) less the costs of getting it ready for export, i.e. those of harvesting and transport (Gray, 1983). Alternatively, forest product prices less costs of harvesting, transporting, and processing could have been applied. Yet, the former method is preferred here, since it involves fewer variables (Gray, 2002).

The required data thus involves: i) data on harvesting and transport costs; ii) log price information; and iii) data on timber revenues. First, harvesting and transport costs were estimated from data obtained from 20 timber firms in Ghana, including large, medium and small firms. Second, in relation to log prices, those observed in the domestic market are not set in a competitive market and therefore, do not reflect the value of the resource. A ban on log exports has granted wood processing firms control over the price-setting leading to depressed log prices (Richards, 1995; Birikorang et al., 2001; Treue, 2001). This is illustrated in Fig. 2, which depicts domestic log prices against West African and Cameroonian log prices, respectively, for four key timber species, which together constitutes half of the Ghanaian harvest. For this reason, we apply reported log export prices from Cameroon in the stumpage calculation (MEF, 2005).<sup>2</sup> For harvest volumes, we apply data on the recorded 2005 harvest (RMSC, 2006), and estimates of the much larger actual total harvest (i.e. including unrecorded harvest) from Hansen and Treue (2008). Third, data on timber revenues were compiled on the basis of various national level reports, including the Forestry Commission (Forestry Commission

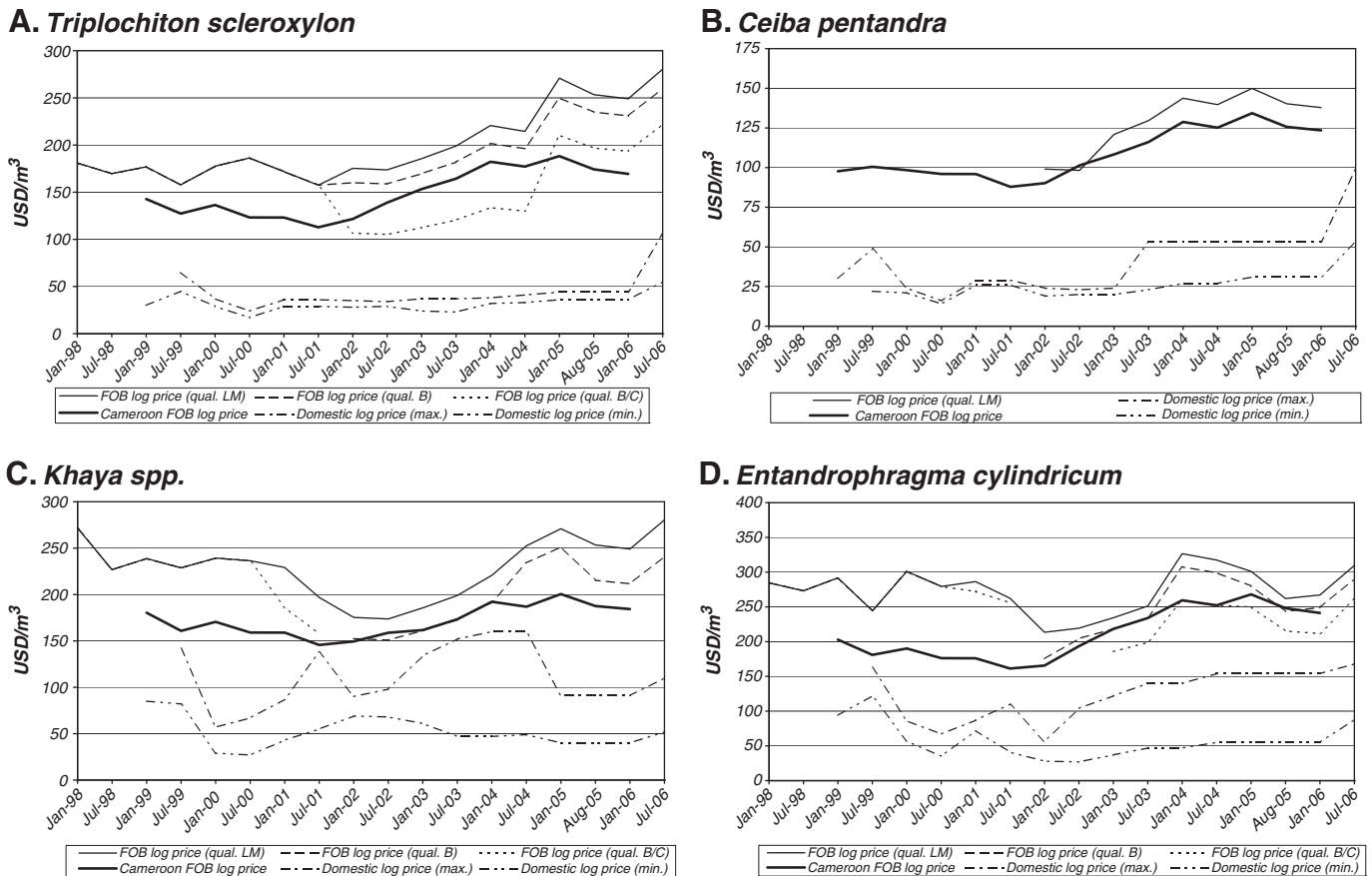


**Fig. 1.** Recorded timber harvest in Ghana, 1960–2005.

Note: The annual harvest is presented in log volume.

1960–72: FD Annual reports, as reported by FIMP (1995); 1973–1985: FD Annual reports, as reported by ILED (1993), 1986–2005: Annual reports published by Forest Products Inspection Board/Timber Industries Development Division (TIDD, 1986–2005a)

<sup>2</sup> Cameroonian export log prices are available for the majority of timber species harvested in Ghana. Cameroon monitors FOB log export prices and issues bi-annually lists of species-specific FOB log export prices as basis for taxation (Mbanyor et al., 2004).



**Fig. 2.** Nominal log prices 1998–2006 for four key timber species as reported for West Africa, Cameroon and Ghana.

FOB log prices (LM, B and B/C) are West African averages as published by ITTO (1998–2006). Cameroon FOB log prices as published by MEF (1998–2006). Domestic log prices are Ghanaian log prices at mill gate as published by ITTO (1998–2006)

Annual reports cum financial status), the stumpage distribution reports published jointly by the Forestry Commission and the OASL, the annual reports of the OASL and from the Ghana Internal Revenue Service (corporate tax).

Finally, in order to reference the 2005 situation to previous years, data was collected on royalty rates and FOB log and lumber export prices from 1976 to 2005.

### 3.3. Distribution and use of timber revenues

In order to illustrate how timber revenues are distributed between beneficiaries we make use of the various national level reports mentioned above. Further, to obtain information on use of the revenue, interviews were conducted with the constitutional beneficiaries of timber revenues. A total of 13 District Assemblies (District Chief Executive or District Coordinating Director), 13 Traditional Councils (Paramount Chief and Registrar) and 15 Chiefs were interviewed. They were selected at random from a database on revenue distribution 2002–2006 compiled from the stumpage distribution reports which holds data for 1441 entities (Stools/Traditional Councils/District Assemblies). Only entities which more or less consistently had received timber revenues over the period were eligible for interview. In four of the District Assemblies and Traditional Councils, more detailed studies were carried out on the use of timber revenues, involving the collection of account data and financial reports. In addition, interviews were carried out with three senior staff members of the Forestry Commission, two officials of the Ministry of Finance and Economic Planning, the Head of the OASL, the heads of three regional OASL offices, a senior staff of the Ministry of Local Governance and Environment, and the Directors of three

Regional Coordinating Councils to learn more about the involvement, role and oversight of these institutions in the collection, distribution and use of timber revenues.

## 4. Results

### 4.1. Timber right allocations

The collected data on timber rights with reference year 2005 reveals a total area of 3.2 million ha of forest under various forms of timber rights. 1.8 million ha are under long-term contracts (typically between 40 and 99 years) and 1.4 million ha under short-term (typically 5 year) contracts.

There are 254 long-term contracts divided upon 106 different firms. 78 contracts are TUCs, while the remaining 176 contracts are other types of contracts. In relation to the TUCs, the date 23 April 2003 is important, since it marks the date when competitive bidding was enacted. 50 Timber Utilization Contracts have been allocated at dates later than this. Yet, only six hereof have been allocated through competitive bidding, and it even remains uncertain whether these six timber rights have been continued beyond the first year, since it cannot be firmly established whether the grantee firms have actually paid but the first year of the annual Timber Rights Fee. The other 44 timber rights have been allocated administratively, i.e. not through competitive bidding. The last 28 TUCs have been granted administratively between 1997 and 2003, i.e. prior to the legal requirement of competitive bidding.

The 1.4 million ha of short-term timber rights are allocated in the form of Timber Utilization Permits (TUPs) and Salvage Felling Permits (SFPs) under the 1998 Timber Resources Management Regulations

**Table 2**  
2005 harvest in Ghana and volume-weighted mean stumpage value.

Species	2005 recorded harvest Ghana m <sup>3</sup>	2005 FOB log price Cameroon USD/m <sup>3</sup>	2005 Stumpage fee rate Ghana USD/m <sup>3</sup>	2005 stumpage value USD/m <sup>3</sup>
Scarlet stars	378,680	188	13.54	133
Red stars	386,637	124	6.63	69
Pink stars	169,569	114	4.79	59
All	934,886	148	9.10	93

Notes:

1. A table with stumpage calculation at individual species level (N = 60) is available on request from the first author.
2. For species (N = 12) where no FOB price is available for Cameroon, the minimum FOB price of USD 92 per m<sup>3</sup> has been applied.

which authorize the Chief Executive of the Forestry Commission to issue TUPs for a specified (smaller) number of trees to district assemblies, town committees, rural community groups and NGOs for social and community purposes (TRMR, 1998: s. 35) and SFPs for salvage of timber trees from smaller areas undergoing development, e.g. road construction. Yet, our database shows that all TUPs, 124 in total, have been granted to timber firms, not community groups, and moreover that rights are granted to fairly large tracts of forest, not a specified number of trees; the average area of the allocated TUPs being 31.7 km<sup>2</sup>. Likewise, the database gives evidence of 448 SFPs, again all allocated to firms, and of an average extent of 22.9 km<sup>2</sup>.

#### 4.2. Level of timber taxation

The stumpage value of the 2005 timber harvest is estimated at USD 307 million. The figure is the product of the average stumpage value per m<sup>3</sup> and the total harvested amount of timber in m<sup>3</sup>. The average stumpage value is estimated as the average volume-weighted FOB log price for Ghana of USD 148 per m<sup>3</sup> (Table 2) less the average costs of logging, hauling, transport and port handling charges of USD 55 per m<sup>3</sup> (Table 3). The total harvested amount of timber is estimated as the sum of the officially recorded harvest of approximately 0.9 million m<sup>3</sup> (RMSC, 2006) and an unrecorded harvest of approximately 2.4 million m<sup>3</sup> (Hansen and Treue, 2008).

The total 2005 timber revenues are estimated at USD 19.9 million (€ 181 billion), more or less equally divided between “upstream” charges, i.e. revenues from the stumpage fee and concession rent, and “downstream” charges, i.e. revenues from export levies and corporate taxes<sup>3</sup> (Table 4). Thus, timber fees and taxes constitute approximately 6% of the stumpage value based on the total harvest and 23% of the stumpage value if based on the recorded harvest.

Next, Fig. 3 depicts the ratio between the volume weighted royalty rate and the FOB export price of logs and lumber, respectively, for the period 1976–2005. The timber taxation has remained at a low level throughout the observed period; the royalty-log price ratio does not exceed 4% in any year, except for 1994 and 1995. Yet, these years should be considered as “outliers”, since Ghana at this time experienced a log export boom of low valued species, c.f. Fig. 1. The boom was partly triggered by a log export ban in Indonesia, and it prompted a complete log export ban in Ghana from 1995 (Treue, 2001). That 1994 and 1995 are outliers are further supported by the lumber price ratio, which does not depict a similar increase as the log price ratio. Note also that the ratio on log prices is overestimated from 1979 onwards because the higher value species have gradually been banned from log export, and therefore not included in the log price.

<sup>3</sup> Most of the wood processing firms have been granted free zone status and therefore pay a reduced corporate tax, c.f. Table 1. This status is granted discretionarily by the Free Zone Board, c.f. GPC (1995).

**Table 3**  
Average logging, hauling and transport costs based on interviews with 20 timber firms in Ghana.

Item	Cost	
	USD/m <sup>3</sup>	€/m <sup>3</sup>
Logging and hauling costs <sup>a</sup>	19.17	174,000
Normal profit on capital <sup>b</sup>	3.83	34,800
Transport cost <sup>c</sup>	22.03	200,000
Port handling charges (5.25% of FOB) <sup>d</sup>	7.59	52,496
Documentation/bank charges (1.75% of FOB) <sup>e</sup>	2.53	22,967
Total costs	55.16	484,263

<sup>a</sup> The figure is based on data obtained from 20 operators in 2007. 7 operators were unable or unwilling to provide data. The average logging and haulage costs (N = 13) is € 174,000 per m<sup>3</sup> with a range between €60,000 and €400,000 and a standard deviation of €89,000. Most of the cost figures apply to off-reserve operations, and include depreciation of equipment, administrative (overhead) costs and compensation payments, but not stumpage fee payments.

<sup>b</sup> The normal profit represents the rate of return that the operator could earn on alternative investments elsewhere, i.e. an opportunity cost for the operator. There is a large variation among the firms in relation to capital costs; some have own hauling and transport equipment while others rely exclusively on rented haulage and transport equipment. With reference to Richards (1995), it is here estimated as 20% of the average logging and hauling costs.

<sup>c</sup> The figure is based on quoted transport rate (lorry hire) from main logging areas to Takoradi port, €5,000,000 per truck load of approximately 25 m<sup>3</sup> of logs.

<sup>d</sup> Based on Treue and Armstrong-Mensah (1995).

<sup>e</sup> Based on Richards (1995).

Since royalty rates were not revised between 1959 and 1976, and since royalties/stumpage fees throughout the period have constituted the key forest taxation instrument, Fig. 3 in essence illustrates the taxation level in the entire post-independence period. The implemented royalty rate increases in 1976, 1983, 1986, 1989, 1994, 1999 and 2003, respectively, are easily discerned, yet none of them augments the taxation level above the 4% threshold, and, importantly, the royalty increases are quickly eroded by the combined effect of depreciation of the Ghanaian cedi and raising international prices.

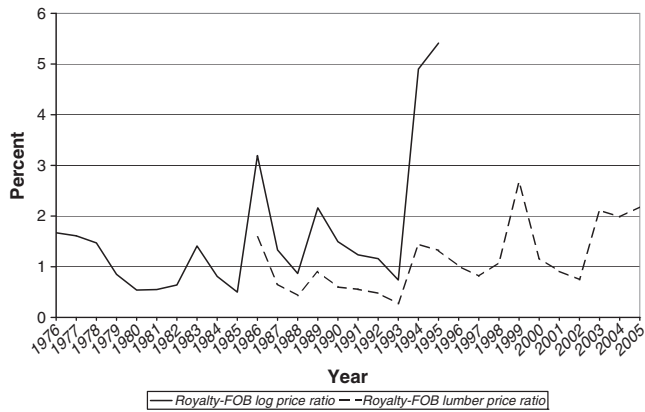
#### 4.3. Timber revenue distribution and use

Table 5 illustrates the approximate distribution of 2005 timber revenues assuming a 100% collection rate and immediate collection and distribution. The Forestry Commission appropriates approximately half of the total revenues through its share of the stumpage fee revenue and all revenues from export levies. 26%, that is the corporate tax revenue, go to the government's Consolidated Fund. The constitutional beneficiaries (District Assemblies, Stools and Traditional Councils) receive USD 3.6 million, equal to 18% of total revenues, but comprising a mere 1% and 4% of the stumpage value of the total and recorded harvests, respectively.

**Table 4**  
Approximate 2005 revenues from timber fees and taxes in Ghana.

Fee/tax	Total revenue		Share of total timber tax revenue
	Billion €	Million USD	
Stumpage fee and concession rent	80.4	8.9	45
1% and 2% export levies	50.2	5.5	28
Air-dried export lumber levy	2.8	0.3	1
Corporate tax	47.6	5.2	26
Total	181.0	19.9	100

Stumpage fee and concession rent: Calculated from current fee rates and recorded 2005 harvest assuming a 100% collection rate; export levies: FC (2006); air-dried export lumber levy: Revenue calculated from 2005 export statistics (TIDD, 1986–2005a) assuming a 100% collection rate; Corporate tax: Information obtained from Ghana Internal Revenue Service (unpublished). Amount is the actually collected.



**Fig. 3.** Volume weighed royalty rate/stumpage fee rate as percentage of weighed FOB log export price and weighed FOB lumber export price in Ghana, 1976–2005.

Notes:

1. Ratios 1976–1985 are based on arithmetic mean royalty rates and FOB export log prices from Treue (2001, appendix 11).
2. Royalty rates per tree 1986–1993 have been converted to per m<sup>3</sup> rates using tree-volume conversion factors (FC, 1998).
3. FOB export lumber prices are volume-weighted means of air-dried, kiln-dried and overland lumber export prices.

Sources: Treue (2001, appendix 11); TIDD (1986a–2005a); TIDD (1986b–2005b).

Yet, neither collection, nor distribution, appears to be full or immediate, in particular for the stumpage fee, which is our key interest here because it is the single most important fee revenue-wise and because this revenue, together with the revenue from the concession rent fee, is subject to sharing with the constitutional beneficiaries (Table 6). There are significant differences between what has actually been reported as invoiced and disbursed and what can be calculated as potentially available for invoice and disbursement from official harvest records and fees rates. Moreover, there are considerable differences between the figures reported by different sources. These observed differences are believed to be the combined result of delays in invoicing and collection, including arrays from preceding years, delays in distribution and inconsistencies in the reporting. With regard to the latter, the OASL reports and FC annual reports apparently include revenues from plantation timber, while this is not the case for the FC/OASL stumpage distribution reports. In sum, estimates of the invoiced, collected and disbursed amounts are associated with considerable uncertainty.

We now turn to how the different beneficiaries use the timber revenues.

#### 4.3.1. Forestry Commission

The Forestry Commission appropriates the full revenue from the export levies and a share of the stumpage fee revenue, since the

**Table 5**

Approximate 2005 distribution of revenues from timber fees and taxes in Ghana.

Beneficiary	Distribution of invoiced revenues		
	Billion €	Million USD	Percent
Forestry Commission	94.3	10.4	52
Office of Administrator of Stool Lands	3.6	0.4	2
District Assemblies	18.0	2.0	10
Stools	8.2	0.9	5
Traditional Councils	6.5	0.7	4
Consolidated Fund	47.6	5.2	26
Forest Plantation Development Fund	2.8	0.3	1
Total	181.0	19.9	100

Note: Distribution under the assumption of immediate and 100% collection rate of invoiced fees, and immediate distribution.

**Table 6**

Information on invoiced and distributed timber revenues (stumpage and concession fees).

Source	Year					
	2002	2003	2004	2005	2006	Total
Amount (Billion €)						
<i>A. Reported invoiced</i>						
FC/OASL Stumpage Distribution Report	–	96.6	68.5	79.4	85.4	–
FC Annual Report	32.5	63.9	75.3	87.3	–	–
Potential amount <sup>a</sup>	32.8	72.3	72.5	80.4	73.9	331.9
<i>B. Reported collected</i>						
FC/OASL Stumpage Distribution Report	34.8	78.9	73.9	76.4	95.2	359.2
<i>C. Reported disbursed to beneficiaries<sup>b</sup></i>						
FC/OASL Stumpage Distribution Report	13.3	23.1	36.0	36.2	37.3	145.9
FC Annual Report <sup>c</sup>	23.9	20.3	31.1	44.3	–	–
OASL Annual Report	23.2	19.2	32.8	22.5	42.0	139.7
Distribution of potential amount	17.0	34.8	34.2	37.1	34.4	157.5

<sup>a</sup> The potential amount is calculated from the annual reported harvest, total concession area and relevant species-specific stumpage fees.

<sup>b</sup> Office of the Administrator of Stool Lands, District Assemblies, Traditional Councils and Stools.

<sup>c</sup> Value shown is stakeholder liabilities as of 1 January added amounts payable to stakeholders in year minus stakeholder liabilities as of 31 December of the respective year.

Forestry Commission currently administratively deducts 60% of the gross revenues from the stumpage fee collected in forest reserves and 40% from the off-reserves as payment for its forest management and administrative services. The deduction was initiated under colonial rule, yet its share has fluctuated over time (Hansen and Treue, 2008). The management fee is controversial (Danso and Opoku, 2004; Katako, 2005; Opoku, 2006). The revenue is considered by the Forestry Commission as internally generated funds (IGF), and is used to finance recurrent (running) and investment costs, the former constituting the largest share. The financial statements and annual reports of the Forestry Commission do not specify costs to specific areas or activity types, i.e. it is not possible, overall or for a specific area, to see whether the management fee deducted from the gross revenues is justified in terms of actual expenditures. Moreover, the annual reports are published with significant delay, typically more than two years.

#### 4.3.2. District Assemblies

The District Assemblies receive a share of the revenues from the stumpage fee and the concession rent. All 13 interviewed District Assemblies considered these revenues as IGF, and therefore did not account for them separately. For the four districts investigated in detail, the stool land revenue (of which timber forms the main part) constitutes between 23% and 48% of the internally generated funds in average for the period 2002–6 (Table 7). The share is higher in forest dependent areas (districts A, C and D) and considerably lower in districts less reliant on forestry resources and with larger urban centers with other taxation opportunities (district B). The maximum share in a single year (not shown) is 67%. The District Assemblies consistently report that they use the timber revenues primarily for recurrent expenditures. Capital projects' share of IGF varies between 2% and 40% for the four sample districts; while the other districts reported 20% as the typical share. The districts consistently report that since the majority of their revenues is in the form of grants tied to specific projects, notably those under the District Assemblies' Common Fund (DACF), they rely on IGF—and hence timber revenues—for their recurrent expenditures. The interviews, and a review of the administrative procedures, reveal that there is no explicit requirement for districts to apply the stool land revenues for projects,

**Table 7**

Cummulative revenues and expenditures of four District Assemblies, 2002–2006 in c.

Item	District Assembly			
	A	B	C	D
<i>Revenues</i>				
Rates	788,187,923	686,680,521	1,325,828,778	475,518,893
Lands	2,442,208,532	1,132,294,814	3,928,108,505	2,826,986,000
Fees and fines	708,121,800	757,186,450	1,537,659,450	1,272,626,425
Licenses	696,275,047	716,567,847	1,171,542,923	530,371,576
Rent	188,207,025	122,760,500	37,878,100	242,243,000
Grants	40,618,804,019	34,773,672,667	29,624,124,026	32,005,530,876
Investment	45,411,252	942,032,421	17,077,000	35,687,413
Miscellaneous	279,282,748	146,921,322	163,811,764	260,560,885
Total revenues	45,766,498,348	39,278,116,543	37,806,030,547	37,649,525,069
Internally generated funds (IGF)	5,147,694,328	4,504,443,875	8,181,906,520	5,643,994,193
Stool land revenue	2,204,728,332	1,041,000,414	3,164,460,000	2,725,000,000
Stool land revenue's share of IGF	42.8%	23.1%	38.7%	48.3%
<i>Expenditures</i>				
Personal emoluments	6,001,958,362	5,367,217,244	7,098,366,607	5,717,871,838
T&T expenditures	1,178,479,933	1,375,082,524	1,466,496,446	1,150,932,624
General expenditures	747,761,666	1,093,471,093	1,260,177,258	593,764,356
Maintenance and repairs	157,215,300	104,460,650	339,866,960	514,274,950
Miscellaneous	804,866,816	430,320,292	1,815,667,514	901,231,478
Capital expenditures				
a. District Assemblies Common Fund	21,493,527,637	18,078,166,863	23,034,270,105	24,074,322,977
b. Districts' own projects	960,463,771	72,990,900	2,088,571,935	2,253,843,252
c. Other projects	13,755,251,252	13,072,401,973	2,107,861,947	2,698,161,891
Total expenditures	45,099,524,739	39,594,111,540	39,211,278,773	37,904,403,368
District's own capital projects as share of IGF	18.7%	1.6%	25.5%	39.9%

but that such a requirement is under consideration by the Ministry of Local Governance and Environment. To the extent that timber revenues are used for capital projects, it is applied as additional funding to projects funded primarily from other sources, e.g. the DACF. Examples of concrete projects that have been implemented with timber revenues include school buildings, a court building, a police station, markets stalls and a truck. While districts get requests from Chiefs and communities for specific projects where timber extraction has taken place, the interviewed districts did not link timber revenues to specific projects in forest-fringe communities. The districts report the use of timber revenues in monthly and yearly balance sheets and financial statements to the Finance Committee of the District Assembly, the Regional Co-ordinating Council and the Ministry of Local Governance.

#### 4.3.3. Traditional Councils and Stools

Traditional Councils and Stools receive a share of the revenues of the stumpage fee and the concession rent. These revenues constitute approximately 90% of the total revenues of Traditional Councils (Table 8). They are used for recurrent expenditures, i.e. emoluments and allowances for Council members and staff, transport costs, running expenses and maintenance costs of palace and vehicles. "Miscellaneous" expenditures are also significant and encompass festivals, funerals and donations. Legal fees in connection with litigation/land disputes were also frequently mentioned as a significant cost in this relation. Capital expenditures are modest; varying from nil to 25% of the total expenditures in the four sample councils (Table 8), and were in all the interviewed councils exclusively related to palace construction and rehabilitation,<sup>4</sup> not projects in forest fringe communities. The accounts of the Traditional Councils are audited by the Auditor-General (Chieftaincy Act, 1971). Yet, 80% of Traditional

Councils have not submitted their accounts; many for over a decade (Auditor-General, 2004).

At the Stool level, revenues are frequently, in accordance with customary arrangements, shared with one-third to the Chief, one-third to the Stool (to be administered by the Stool Treasurer) and one-third to be shared between elders (Sub-chiefs and advisors to the Chief). However, in other cases the interviews suggest that the entire revenue is appropriated by the Chief with reference to the Constitution of Ghana which stipulates the revenues are for "the maintenance of the Stool in keeping with its status" (GoG, 1992: s. 267 (6)). As to the actual use of the revenues (Stools share), the

**Table 8**

Average revenues and expenditures of four Traditional Councils, 2002–2006 in c.

Item	Traditional Council			
	A	B	C	D
<i>Revenues</i>				
Stool land revenues	213,275,000	22,086,000	123,650,000	488,201,424
Grants in aid	9,400,000	1,318,750	9,100,000	7,881,250
Fees and fines	0	100,000	0	1,206,875
Investment	0	1,216,000	0	0
Other revenues	19,005,740	0	1,000,000	35,100,357
Total revenues	241,680,740	24,720,750	133,750,000	532,389,906
Stool land revenue's share of total revenues	88.2%	89.3%	92.4%	91.7%
<i>Expenditures</i>				
Personal emoluments	19,445,400	4,769,500	0	101,316,450
T&T expenditures	19,785,480	2,778,100	2,250,000	81,211,539
General expenditures	30,397,538	7,249,941	5,429,000	35,707,984
Maintenance and repairs	91,336,055	3,526,850	4,900,000	68,969,864
Miscellaneous	86,607,175	5,353,975	33,300,000	165,104,523
Capital expenditures	0	140,000	15,140,500	38,623,575
Total expenditures	247,571,649	23,818,366	61,019,500	490,933,934
Capital expenditures/total expenditures	0.0%	0.6%	24.8%	7.9%

Note: Note that the table depicts average, annual revenues and expenditures, not the total amounts for the five year period, since accounts could not be traced for all Traditional Councils for all five years.

<sup>4</sup> Whether such palaces constitute a value for the citizens is essentially a normative judgment. Moreover, there appears to be a great variation as to the actual traditional and societal role of the palaces. Some appear to have an important social function in connection with ceremonies, festivals, meetings and venue for traditional courts, others less so.

interviewed Chiefs mention social functions, hospitality, donations, Stool regalia, litigation expenditures and maintenance of palace as the typical key items. A few of the interviewed Chiefs indicated that they from their revenues have contributed to projects, e.g. schools, but it appears to constitute a small share of the revenues. None of the interviewed Chiefs had any written account of the received timber revenues. In case that the revenues were shared as indicated above, the Chiefs discuss the use of the Stools share with elders and sub-chiefs. The interview results are consistent with the legislation which does not infer any formal reporting or accounting requirements on Chiefs.

## 5. Discussion

Here we first discuss the reliability and significance of the results presented in the previous section. Then we discuss possible explanations to the observed outcomes and the wider research and policy implications of the study.

### 5.1. Reliability and significance of results

#### 5.1.1. Timber rights allocation

We believe that the presented results on allocated TUCs are fairly accurate. TUCs are typically large areas and it thus appears unlikely that many such areas should have evaded our scrutiny. Moreover, the results appear consistent with other sources, e.g. Bird et al. (2006). Yet, anecdotal information suggests that there may be additional permits (TUPs/SFPs) than what we have presented. Our results, then, are likely to be a conservative estimate of the extent of discretionary timber rights allocation. Further, the sheer difficulty of creating a reliable overview indicates a lack of transparency that again underlines our notion of discretionary control over timber rights allocation. In sum, reforms of timber rights allocation stipulated in the 1994 Forest and Wildlife Policy, most notably competitive bidding, have not been *de facto* implemented, and discretionary allocation remains the dominating allocation mechanism.

#### 5.1.2. Taxation level

Our proposition of a low taxation level relies on the presented stumpage value calculation, which again relies on the estimation of operator's costs, log prices and the harvest level. We discuss each in turn.

First, operational costs obviously differ between operators, and many of the operators included in the survey had difficulties in estimating average costs, especially the fixed costs elements. Yet, we will argue that the calculation is unlikely to underestimate costs, since the average estimated costs at USD 55 per m<sup>3</sup> significantly exceeds the reported 2005 average domestic log price (mill gate) of USD 36 per m<sup>3</sup> (Birikorang et al., 2007). This also corresponds with domestic log prices reported by ITTO (1998–2006), c.f. Fig. 2, as well as anecdotal information on log prices obtained from small-scale loggers as part of the study.

Second, it could be argued that the application of export log prices (from Cameroon) induces an overestimation of the log price, since not all harvested logs (from Ghana) may attract export prices because of inferior quality and/or lower dimension. Yet, the applied Cameroonian prices have been reduced by 15% in consideration of this (Mbianyor et al., 2004). On the contrary, there are indications of underestimated log prices as a result of transfer pricing. The average 2005 CIF price (Cost, Insurance and Freight) for tropical logs imported into Europe is USD 357 per m<sup>3</sup> (UNECE, 2008). Based on information obtained from a leading European trader in tropical logs, the average 2005 transport, handling and insurance costs from West Africa to Europe are USD 76 per m<sup>3</sup>. Thus, the imputed FOB price is USD 281 per m<sup>3</sup>, i.e. almost twice the reported FOB price from Cameroon. While this difference may be explained by other factors, e.g. higher prices

and higher transport costs of logs from other regions, notably Asia and Latin America, the gap appears too large to rule out transfer pricing.

Third, the present study presents a much higher stumpage value (USD 307 million) compared to previous studies in Ghana, c.f. IIED (1993), Richards (1995), Birikorang et al. (2001) and Treue (2001), since it considers the stumpage value of the un-recorded harvest. Yet, irrespective of whether one considers the full stumpage value (USD 307 million) or that of the officially recorded harvest (USD 87 million) only, the gap between stumpage value and taxation revenue is considerable. In comparison, the total 2005 expenditures of the forest administration amounted to USD 24.8 million (FC, 2006) and the total donor support to the Ministry of Lands, Forests and Mines to USD 110 million (World Bank, 2006). Further, if the full stumpage value could be captured, this would constitute 11% of overall 2005 Ghanaian tax revenue (MOFEP, 2009).

In sum, we argue that the study illustrates the presence of a considerable untaxed stumpage value for 2005, as well as for previous years. Further, the study illustrates that efforts to reform the timber fiscal regime initiated with the 1994 Forest and Wildlife Policy have not significantly increased the capture of rent.

It should be stressed that the difference between the stumpage value and the tax revenue is not what is available for super-profits for actors in the sector. A large share of the stumpage value is dissipated through inefficiencies and price distortions. Assuming an international benchmark efficiency rate of 50%, against a domestic rate of 34% made up of a wood processing industry efficiency rate of 39% and 27% of chainsaw operators (Birikorang et al., 2001), inefficiencies result in a loss of raw wood in the order of 1.1 million m<sup>3</sup> annually in Ghana. At a rate of USD 93 per m<sup>3</sup>, this represents a stumpage value of USD 102 million, i.e. approximately a third of the stumpage value is dissipated through inefficiencies. Next, rent is dissipated through price distortions in the local market, where lumber attracts much lower prices than on international markets (Birikorang et al., 2007; Marfo et al., 2009). The average 2005 export air-dried lumber price is USD 405 per m<sup>3</sup> (TIDD, 2005b). Extracting port handling charges (5.25% of FOB), bank charges (1.75% of FOB) and export levies (3% of FOB), we arrive at an average border lumber price of USD 365 per m<sup>3</sup>. The 2005 volume weighed domestic lumber price (mill and chainsaw lumber) is USD 135 per m<sup>3</sup> (Birikorang et al., 2007), implying an average price difference between export and domestic lumber of USD 230 per m<sup>3</sup>. Assuming that 460,000 m<sup>3</sup> of chainsaw lumber is traded annually in the domestic market together with some 90,000 m<sup>3</sup> of lumber supplied by the wood processing firms (Birikorang et al., 2007), the stumpage value of the price distortion is USD 127 million. Since the domestic lumber is of lower grade than the export lumber, the calculation somewhat overestimates the price distortion, and the dissipation due to price distortion should be considered an indicative value only. By subtracting the tax revenue and values dissipated due to inefficiency and price distortion from the stumpage value, we arrive at a residual rent of USD 58 million. This is what minimally is available for super profits.

#### 5.1.3. Distribution and use of timber revenues

The present benefit sharing can hardly be considered in line with the Forest and Wildlife Policy's goal of "...optimum benefits to all segments of society" (GoG, 1994: 4.1). Very few, if any, benefits are directed towards forest fringe communities. This is because the major share of revenues is appropriated by the Forestry Commission and the lack of requirements for the use and accounting of timber revenues, in particular for the Traditional Councils and Chiefs. The main direct contribution from timber to rural livelihoods may thus come from Social Responsibility Agreements<sup>5</sup> and from informal payments from chainsaw operators (Hansen, 2011).

<sup>5</sup> The Timber Resources Management Act introduced requirements for the timber firms to enter into a Social Responsibility Agreement with affected communities and under this agreement provide services equal to 5% of the stumpage fee revenue.

The study reveals a considerable uncertainty as to what amounts have been invoiced, collected and distributed, and when. It is thus impossible to say something conclusive about the collection efficiency and timing. Furthermore, this hinders beneficiaries in checking the appropriateness of distribution figures, a fact also frequently referred to by the interviewed beneficiaries.

## 5.2. Interpretation/explanation

The presented results support the three suggested propositions. This section explores possible explanations for the observed outcomes with reference to the timber taxation literature, c.f. Section 1.

### 5.2.1. Ignorance and lack of capacity

First, in the Ghana case, we can reject explanations that emphasize ignorance, lack of information and irrational behavior of politicians and policy makers. This would be strongly offending to the cadres of intellectual brilliant politicians and civil service staff in Ghana. It makes little sense to assume that politicians and policy makers should not be aware of, and give appropriate attention to, the implications of taxation policies that have important consequences at national level for revenues, resource conservation and environmental services. There are problems of asymmetric information, i.e. determining operators' cost, and incomplete information on international pricing of logs and wood products, but these can hardly explain a taxation regime that over decades have maintained a taxation level way below the stumpage value. In particular, this perspective fails to account for why timber rights have been allocated discretionarily, notably the widespread use of the permit instrument and the allocation of TUCs in violation of the requirement of competitive bidding.

Second, low institutional and administrative capacity may indeed be part of the explanation. Without doubt, the Forestry Commission and other enforcement agencies face important challenges in implementing laws and regulations, e.g. controlling the harvest level and collecting the appropriate fees, partly as a result of widespread collusion between field staff and illegal operators (Hansen, 2011). Yet, this perspective cannot solely explain observed outcomes. It does for example not explain the apparent reluctance to raise forest fees, or the timber rights allocation demise.

### 5.2.2. A captured polity?

This explanation relates to the capture theory of regulation (Hackett, 2001; Grindle, 1989). It asserts that rational individuals are encouraged to cooperate when such cooperation results in a more optimal individual payoff than when acting alone. Such cooperation often involves lobbying the government in an attempt to gain access to benefits that cannot be acquired through a competitive market (Kruger, 1974; Bhagwati, 1982). It may be perfectly legal or may involve illegal practices, i.e. corrupt practices of politicians and/or various tiers of bureaucrats (Khan and Sundaram, 2005; Rose-Ackerman, 1999; Kolstad and Søreide, 2009; Kolstad and Wiig, 2009). The demand for regulation, i.e. extent of lobbying, depends on two features of the group of beneficiaries: Group size and whether the group has large stakes in the regulation (Olson, 1965; Buchanan and Tullock, 1962; Stigler, 1971). In relation to the former, large group size hampers successful organization because individuals have an incentive to free ride, i.e. enjoy the benefits of regulation without contributing to its maintenance.

In relation to taxation in Ghana, the wood processing firms, organized in the Ghana Timber Millers' Organization, would candidate as a strong lobby. The number of significant wood processing firms is relatively low (less than 50), and many of the firms are in fact under identical ownership and associated in larger business groups. Moreover, these firms have large stakes in the regulation as they have clearly benefited from the low forest fees, absence of competitive bidding, favorable corporate tax rebates and holidays offered to wood

processing firms. In accordance with this perspective, contemporary examples of lobbying by the Ghana Timber Millers' Organization, which have taken place in the public domain, include its argumentation against the 2001 National Reconstruction Export Levy, which was subsequently revoked in 2005, the challenge of the formula applied in the calculation of the stumpage fee, and most recently, the legal basis of the 1% and 2% export levies (GTMO, 2002; Acquah-Moses, 2004).

Yet, we find it odd if politicians should be "captured" to a degree where they allow policies that promote gross economic inefficiencies and violate the interests of other stakeholders. After all, the state has maintained substantive power over the resource and resource rents, which should insulate politicians from such demands, and the timber sector is not *that* important for the Ghanaian economy (Whiteman and Lebedys, 2006). Moreover, the capture perspective is generally less applicable to developing countries, where it cannot generally be assumed that the "rules of the game" are established, and if established, that they are subsequently implemented accordingly (Bates, 1983; Grindle, 1989). Hence, it makes little point for organized interests to influence policies; activities are more disaggregated, personalized and particularistic focusing on the "output" stage (Scott, 1972).

### 5.2.3. Interests of the political elite

A fourth perspective interprets (taxation) policies, and the way they are implemented, vis-à-vis the interests of politicians. One of the prominent proponents of this perspective, the state-centered perspective of new political economy, is Robert Bates (Bates, 1981, 1983, 1990). This perspective asserts that out of commitment for development, governments in Africa want to shift their economies away from agricultural commodities towards manufactured goods. To achieve this objective, politicians intervene in markets and implement policies that e.g. divert resources from rural to urban areas, and shelter nascent domestic industries from competition. It further asserts that politicians are motivated by a desire to maintain or increase their hold on power. Thus, politicians adopt policies that are expected to promote development through industrialization, while at the same time maximizing the chances of the same politicians of staying in power. Importantly, politicians are willing to sacrifice economic rationality in order to achieve the latter objective. What appears a policy failure from an economic point of view may therefore constitute a political success from the point of view of politicians. This perspective emphasizes political control over rent opportunities and discretionary allocation of these rent opportunities. Through these two mechanisms, politicians grant favors to particular agents and individuals in a system of political patronage, where those bestowed with special opportunities provide "pay-backs" in the form of votes or campaign contributions.

This perspective thus depicts a fundamental different process than that envisaged through lobbying; organization follows rather than precedes government intervention, and politicians are in the "driving seat" (Bates, 1990). The process that followed the 2000 elections in Ghana when the New Patriotic Party took office after the National Democratic Congress Party may support this view. The New Patriotic Party canceled timber rights allocated by the former government on the grounds of discretionary allocation, but soon followed suit with widespread allocations of TUPs and SFPs. A captured polity would not have been able to do so.

We thus believe that this perspective is fundamental in understanding the taxation regime in Ghana. The results presented above clearly demonstrate that the taxation regime creates rent-seeking opportunities. The discretionary allocation of logging rights implies that the central political and administrative elite can distribute patronage, in the shape of lucrative timber rights, to clients within and outside the timber sector in return for political support. As an example, the widespread allocation of TUPs and SFPs in Ghana since 2001 may suggest a special form of discretionary allocation where

timber rights are allocated as an ex-post reward for political support. These allocations are spread between hundreds of firms, many of which have no previous or subsequent track record in the timber sector, which together with their timing immediately after the 2000 elections could suggest allocation as reward for political support. Anecdotal information suggests that such timber rights are frequently re-sold, albeit illegally, to the larger wood processing firms (Treue, 2001). That (profitable) re-selling of timber rights takes place further substantiates our claim of unearned timber rents.

The central government's intervention in forest management in Ghana is officially justified with reference to resource conservation which requires "scientific" forest management (deGrassi, 2003). Further, the importance of the timber sector as job creator and foreign exchange earner is emphasized (Agyeman et al., 2004; GoG, 2005). Yet, as this study has demonstrated, the political interventions result in outcomes that are far from resource conservation, induces great wastages of raw material and revenues and does not live up to the declared goals of benefits to all segments of the society. How do politicians get away with reproducing a regime that violates the interests of major groups and induces economic inefficiency? In the following, we invoke a number of possible reasons for why the political costs associated with manipulation of the forest taxation regime appear low.

The average Ghanaian citizen (tax payer) is not aware of the consequences of the taxation regime and forest policies. The cost of acquiring such information would be significant and would for the individual greatly exceed the potential benefits. The complexity of the taxation regime and benefit sharing, may explain why NGOs and other advocacy groups face difficulties in bringing forestry issues to the attention of the general public, e.g. in the media, except as isolated cases. Even before that, the sheer complexity of the taxation regime may act as a constraint for NGOs and advocacy groups, who may not possess the information and analytical and technical skills necessary for presenting a clear analysis of the situation. At the national political level, the two largest political factions, the National Democratic Congress Party and the New Patriotic Party have alternated in office and may thus both have utilized timber resources to pursue their political agenda. Challenging the other party on this ground would immediately turn into a "blame game" that neither would benefit from.

Further, no strong opposition or voices are raised by the immediate beneficiaries of timber revenues; the District Assemblies and Chiefs. The former is heavily controlled and dependent on the central government for support (Crook and Manor, 1998), and can thus hardly be expected to request accountability from the central level. Chiefs, in their capacity as customary representatives of Stools, i.e. "landowners", should in principle have a strong incentive to speak up. Yet, there is little collective action. We interpret this as a preference for *status quo* where they receive timber revenues, albeit modest compared to the value of the timber extracted, but without any accountability requirements, implying that they can use these timber revenues largely at their own discretion.

Finally, there are the local communities and farmers living in vicinity of the timber resource. They are not favored in the current benefit sharing arrangement, and as this study has demonstrated, few if any benefits trickle down from the constitutional beneficiaries. Yet, the transaction costs of collective action are high, and the potential benefits low; their livelihoods largely dependent on food and cash crops, not timber trees. Rather, farmers undercut the political and administrative elite's control over the timber resource by engaging with illegal chainsaw operators or by deliberately destroying timber trees from farm land (Hansen, 2011).

In sum, we suggest that the perspective emphasizing the interests of the politicians is fundamental in understanding the Ghanaian timber taxation regime. Lobbying and low capacity may be complementary explanations, but can hardly on their own explain the observed outcomes.

### 5.3. Implications of study

In relation to research, we suggest that the interests of politicians have been given insufficient attention in the timber taxation, and indeed in the broader natural resource taxation and natural resource governance literature. The study leaves the more detailed structure and operation of the alleged patron–client networks unexplored. Further empirical research would be welcome on the role of the polity vis-à-vis the bureaucracy and the role of embeddedness in organizations and culture in shaping the opportunities for intervening in patron–client networks.

In relation to policy, the present study helps explain why timber taxation reforms, notably those supported by bilateral or international donors, have not yielded the expected results. These reforms assume, implicitly or explicitly, that lacking capacity, information or ignorance are key explanatory factors. We hope that this study has illustrated that the situation may be more complex than that. Hence, we call for more in-depth background studies prior to interventions that look beyond the representations of policy and seek to grasp their functions in a wider political economy. Only by understanding the functions and motives underlying policy design, we would argue, can appropriate reforms be suggested and the potential of their implementation be assessed. We recognize the importance of "getting the prices right" and a market based approach, but the simplistic neo-liberal approach that appears to have guided timber taxation reforms of the past decades, in Ghana and elsewhere, has not worked, because neither the political will, nor the appropriate institutional framework, have been in place. Donors need to reflect on that.

In the specific case of Ghana, this view would imply that timber taxation and fiscal reforms would have to be considered as part of wider governance reforms that address the rights to trees, management responsibilities and benefit sharing. Specifically, this may include devolution of rights to timber trees, a relaxation of the log export ban, a revoke of the ban on chainsaw lumbering, institutional reform of the Forestry Commission, and a replacement of competitive bidding over long periods and large tracts of forest with timber rights over smaller areas and of a shorter duration. Such reforms will not be easy since they will challenge current interests and benefits.

## 6. Conclusions

The paper has demonstrated that politicians have maintained discretionary control over timber rights allocation despite declared policy goals of competitive bidding. It has also illustrated a level of taxation that is way below the value of the resource under first-best conditions. Third, we have demonstrated that timber revenues are distributed to beneficiaries with few requirements for documentation and use and the main share of revenues is *de facto* appropriated by the forestry administration. We therefore conclude that the current taxation regime does not contribute to official forest policy justifications of resource conservation, development and equitable benefit sharing since it does not provide positive incentives for the timber industry to increase efficiency and for forest fringe communities to participate actively in forest conservation and management. The paper suggests that the emergence and reproduction of timber taxation policies in Ghana may be best explained through a perspective that emphasizes the interests of politicians in securing and maintaining political power. Though discretionary control over timber rights and low forest fees, politicians wield control over attractive rent-seeking opportunities which are exchanged for political support through patron–client networks. Thus, while behaving in ways that are economically, ecologically and socially harmful, politicians behave in ways that are politically rational. The distortion is reproduced because it, at least up to this point, has been associated with low political costs.

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