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Determinants of Privatisation in Selected Sub-Saharan African Countries: Is Privatisation Politically Induced?

Osman Suliman and Ghirmay Ghebreysus*

While African governments and international donors generally support privatisation for stabilisation as an imperative of public finance problems, academicians are more inclined to discuss the efficiency gains of privatisation. Antithetically, some political economists argue that whereas African governments actually de-emphasise privatisation, donors mainly insist on privatisation to promote neoclassical views without offering an alternative to state reform. This paper realises that the main purposes of privatisation in Sub-Saharan Africa have, so far, been multidimensional. It envisages, empirically, the determinants of privatisation in Sub-Saharan Africa using a probit model over the period 1970-1994. The results are supportive of the hypothesis that privatisation in the sample countries is induced by macro-instability and political bias.

I. Introduction

The literature on privatisation in Sub-Saharan Africa and developing countries in general is very complex and multidimensional. There is no clear consensus among governments, international organisations, and academicians as to what exactly is the purpose of privatisation. While African governments, the IMF, and the World Bank (donors) seem to target mainly stabilisation as an imperative of public finance problems with efficiency as a secondary axiomatic belief, much of the academic literature emphasises the efficiency and reversal of price distortions as gains of privatisation. On the other hand, as envisaged in Section III, some political economists have serious doubts about the intentions of both African governments and donors. According to these economists, while African authoritarian governments de-emphasise privatisation because of power loss, donors have mainly insisted on privatisation to promote neoclassical views of state minimisation without offering an alternative approach to state reform.

Privatisation programs have been introduced by a number of African countries in the last two decades with the ostensible view to improving economic performance of public enterprises and creating a market economy. Yet the programs produced mixed results. In most of these countries poorly performing public enterprises were sold to the private sector

* Economics Department, Millersville University, P.O.Box 1002, Millersville, PA 17551-0302, U.S.A. and Grambling State University, respectively. The authors would like to thank an anonymous referee for helpful suggestions.

to relieve the government of heavy financial burdens and obviate macroeconomic problems. In fact, as shown below, it has been alleged that most Sub-Saharan African countries essentially privatise because of conditional assistance provided by the World Bank and the International Monetary Fund (IMF) subject to privatisation and other macroeconomic adjustments.[1] To maintain their power while submitting to such pressure, many authoritarian governments in Sub-Saharan Africa apply privatisation by favoring their allies. The expectation, therefore, is that X-inefficiency might result in both the private and public sectors, or state-owned enterprises (SOEs). In addition, as Due (1993, pp. 1981-1988) points out by not exposing parastatals to open competition, a worsening of income distribution usually ensues. It has been argued by Bennell (1997, pp. 1785-1803) that public floatation of SOE shares has the added political and economic advantages of enabling relatively large numbers of citizens to acquire them. Otherwise, deferred public offerings, where the government stipulates that a certain percentage of shares will be sold to the public as time passes, can be considered. In the absence of stock exchanges, trust funds can be established that allow the government to keep SOE shares until they can be sold to the public. In fact, in some of these countries, privatisation policies were enacted for ideological and opportunistic goals. As Riddell (1999, pp. 309-335) contends, it is naïve to believe that government will execute income redistribution reforms that will challenge their political interests. In a general sense, the privatisation programs did not produce the desired efficiency gains since the incentive was to reduce government deficit and to advance political agendas rather than offering an opportunity to build a strong private sector. This study is, therefore, concerned with assessing the extent to which privatisation decisions are subject to macroeconomic changes and political bias in selected Sub-Saharan African countries.

The proclaimed efficiency gains of privatisation have been discussed extensively by numerous articles, including Brock and Magee (1978, pp. 246-50), Becker (1983, pp. 371-400), Ake and Mohammed (1986, pp. 161-80), Clague (1991, pp. 507-30), Fernandez and Rodrik (1991, pp. 1146-55), Bruton (1992), Dollar (1992, pp. 523-44), Bates and Krueger (1993), Bradburd (1993), Drazen and Grilli (1993, pp. 598-607), Campos and Esfahani (1996, pp. 451-85), and Rose-Ackerman (1998, pp. 35-57), among others. To our knowledge, none of these studies focused on the determinants of privatisation in Sub-Saharan Africa.

We conjecture that economic policies follow a set of contracts between the government (principal) and various interest groups (agents) that desire the promotion of a free market system or efficiency gains (profit maximisation). Alternatively, principal-agent contracts work under both complete certainty and uncertainty with and without perfect information and can form the basis of analysis. The theoretical principal-agent (P-A) model is intended to exhibit the expected profit maximisation (efficiency) conditions. At the outset, it becomes evident that profit-sharing is the underlying latent condition for the decision to privatise subject to (explained by) political motives and the inevitable macroeconomic problems. Specifically, while this study agrees and attempts to illustrate theoretically the efficiency benefits of privatisation, its main purpose is to attract attention, empirically, to the

1. For an explanation of policy-based lending in Sub-Saharan Africa, see Cassen (1994).

macroeconomic determinants of privatisation and the political manner in which privatisation is applied. Demonstration of both the agreed upon (theoretical) efficiency gains and the claimed empirical questions are crucial as we allude to the resulting pernicious income distribution effects which may offset any efficiency gains. In addition, Adam (1992) demonstrates that the efficiency gains from the reduction of agency problems is much more complex. Adam succinctly distinguishes between productive and allocative efficiency. He argues that privatisation can indeed lead to lower costs due to the ownership shifts and change in incentive structures which are related to agency problems. Besides, Adam argues that the issue of allocative efficiency, which aligns consumer prices with the marginal cost of production, is closely linked with the issue of market liberalisation and competition whereas state enterprises are either in natural monopoly sectors or present serious barriers to entry due to their size and advantageous access to technology and other inputs. Thus, for privatisation to be successful, it has to be linked to competition and regulation policy which has been ignored by both donors and the African governments. That is, unless deliberate private-public corruption of some African governments aiming at avoiding competition to reap monopoly rents is eliminated, privatisation is not likely to succeed. Therefore, the efficiency issue may have largely been a secondary axiomatic belief in the context of structural adjustment. Thus, to a large extent, the main focus has been on stabilisation policies aimed at the public finance imperative of adjustment where SOEs have been a net drain on the financial resources of the government. Theoretically, as Adam (1994) enunciates, under private ownership, firms will only remain in existence as long as they are viable; otherwise the market mechanism will reallocate their resources to more efficient uses. Practically, political bias and the alleged stabilisation of the macroeconomy are, in essence, externalities that stand in the way of the market mechanism. Hence, the present paper envisages empirically two questions: (1) is privatisation induced by macroeconomic problems (variables)? and (2) is privatisation politically induced? The question of income redistribution effects resulting from political bias, and whether or not privatisation leads to some reversal of private distortions, can be tackled elsewhere. Adam *et al.* (1992), examine privatisation from an explicitly economic standpoint, focusing more on the specific effects of ownership transfer on economic performance as applied to the market structures and characteristics of many developing countries. Evidence derived from the apparent oppressive conditions in most of those countries and the increasing patterns of migration out of them suggest a worsening of income distribution. For example, in Sudan the public entities have essentially been sold to supporters of the regime, while successful traditional businesses have been overtaken and forced to leave their enterprise to party affiliates. The UNDP report reveals that in 1997 alone, 374.4 thousand Sudanese sought asylum in other countries, and in 1994, 282.6 (per 100,000 people) were jailed.

The next section will present a brief description of the underlying principal-agent model. Section III discusses the motives behind privatisation and the political economy of the related issues. Section IV presents the empirical results. Section V offers some concluding remarks.

II. The Principal Agent Model: An Overview

Although it is more commonly argued that the public sector is more X-inefficient, our study purports that in a political alliance scenario, both the public and private sector are subject to X-inefficiency. The neoclassical explanation focuses on agency theory, which, as Haskel and Sanchis (1995, pp. 301-320) explain, examines the relationship between managers/owners and model managerial effort and determines effort in a contractual arrangement under asymmetric information. As discussed in Bös (1991) and Vickers and Yarrow (1993, pp. 111-32), these models predict that X-inefficiency is greater in the public sector if monitoring arrangements are inferior to the private sector. That is, if asymmetric information exists. However, the present paper takes the extreme, but realistic, assumption of symmetric information on the premise that when the private sector and public sector are politically allied for the same cause, they are inseparable. This accords with Johnston' s (1998, pp. 69-90) argument that in such entrenched corruption settings many citizens and investors see corruption as inevitable and reform as futile. As such, entrenched corruption diverts development resources and saps the political and social vitality that societies need. It also resists many of the institutional and civil service reforms commonly deployed in advanced nations. That is, as Johnson adds, entrenched corruption is pervasive, organised, and monopolistic with no meaningful political opposition or economic competition. After eliminating their competitors, the allied private and public sector officials can extract monopoly rents as enunciated in the *African Development Report* (1997, pp. 79-164). As Klitgaard (2000, pp. 2-5) explains, systematic corruption distorts incentives, undermines institutions, and redistributes wealth and power to the undeserving. Klitgaard argues that when corruption undermines property rights, the rule of law, and incentives to invest, economic and political development are crippled. Rent-seeking is further compounded in these countries by discretionary allocation of foreign currency and foreign currency black markets.

In the model the government acts as the principal (action-taker) and the collaborative entrepreneurs as agents. As such, privatisation actions are taken by the government. The extent of efficiency (inefficiency) will depend on the expediency with which the action is taken. To the extent that government politicises privatisation to gain more control by favoring interest groups that are loyal to the incumbent authorities, privatisation may yield perverse results. By trying to empower only loyal interest groups, the government is, in essence, moving to secure its political power by gaining full control of the economic activity of relevant constituents. That is, the authorities are deliberately entering into a contract to undertake economic activity.

With the combination of risk sharing and access to information, the principal-agent problem offers a first-best solution if the interests of the two sides converge while information is shared costlessly. Under information asymmetry, however, a first-best solution is possible if and only if the principal monitors the agent' s actions and gains free access to information; otherwise second-best solutions are possible with the so-called agency loss arising. In the African situation, however, there is a virtual symmetry of information and shared X-inefficiency since the agent and the principal are inseparable allies through ethnic or religious biases.

It is generally presumed that the outcome is significantly influenced by the agents, and that agents actions are not readily observable by the principal. The principal can control some observable behavior of the agent through the investment (output) acquired by the principal and a known channel of predetermined contract whereby the principal observes the actions of the agents, through political support and so forth. When agents' actions are based on unshared observation with the principal, the principal cannot detect whether the agent used his information in a way that best serves the principal's interests. Thus, we run into a moral hazard problem. Plausibly, the principal has to determine a contracting rule that will induce the agent to behave in an optimal converging solution, know as incentive compatibility.[2]

III. Empirical Issues: Why Privatise?

Privatisation programs have been introduced by a number of African countries in the 1980s and the 1990s. The motives behind privatisation are complex and controversial. Importantly, the bulk of researchers are more inclined to believe that most African privatisations take place as part of a broader structural adjustment program under the auspices of international development agencies or the so-called "donors", including the World Bank and the International Monetary Fund (IMF).[3] Both the World Bank and the IMF are concerned with the necessary macroeconomic stability as they see it, which usually entails fiscal discipline and privatisation. Among researchers are those who question these donor policies and discount the existence of entrenched corruption settings. This alters the adduced causal inferences in this paper and principal-agent relationships. Such a view is enunciated by Africanists such as Callaghy (1989, pp. 15-38), alleging that to cope with the Third World debt crisis, Western states and actors have brought to prominence the dominant neoclassical view of development to countries dependent on the World Bank and the IMF.

2. Pratt and Zechauser (1985) and Ul Haque and Mirakhor (1987) point out that the following principles came as a result of the principal-agent analytical framework: (a) when information access is expensive and the agency loss is highest, the interests of the principal and agent do not converge; (b) an optimal level of monitoring is maintained by the principal subject to the cost of monitoring; (c) under relatively expensive monitoring, monitoring will be reduced in quantity and/or quality; (d) within an array of real-life cases, successful monitoring of such indicators as investment (profit) is at least partly effective in the reduction of agency loss; (e) good reputation which could be lost through inappropriate or litigious behavior; (f) repetitive actions will, over time, reduce uncertainty and mitigate the incidence of moral hazard; and (g) the benefits that accrue, as aresult of agency-loss reduction, will be shared by both the principal and the agent. Hence, both the principal and the agent are interested in finding an incentive and monitoring plan that gives outcomes similar to a free-information situation. The role of moral behavior in reducing agency loss has been succinctly addressed by Arrow (1970, 1971).
3. While many economists perceive structural adjustment programs adopted by the World Bank and IMF as market-oriented approaches of reform (including privatisation), these have been criticised by a number of African political economists as a discourse and practice of post-colonial international economy and not merely an economic program. See, for example, Blacking (1999, pp. 207-227).

Central to this view are export-led growth and minimalists state, with the market being the major instrument of reform. Yet, Kahler (1990, pp. 33-62) points out, that except for trying to remove the state from the economy, neoclassical theory does not offer an alternative approach to state reform. This has posed a major impediment to effective economic adjustment in the Third World. It has, furthermore, been contended that the IMF and World Bank actions are antithetical to what they recommend. As Callaghy (1989, pp. 115-38) argued, much of their activity reinforces the role of the state to improve monitoring, data-gathering, parastatal reform, and privatisation of SOEs, among other things. It should be mentioned here that this paper argues that because African countries need these donors' financial support as a result of perverse macroeconomic conditions, they submit to donors' pressure to reduce government and privatise. To make sure that privatisation does not diminish their power, they apply it in a political way.

Both Callaghy (1989, pp. 115-38) and Kahler (1990, pp. 33-62) contend that privatisation was not popular among politicians in Sub-Saharan Africa before the 1990s. Politicians and managers of SOEs were afraid of losing power and jobs. Moreover, labor unions, which are mostly concentrated in SOEs were generally opposed to privatisation. Callaghy (1990, pp. 257-320) argued that as independence came to Africa in the late 1950s, political rather than economic logic prevailed. He contends that a new political class began to emerge that used the state as its instrument of action and source of power, status, rents, and other forms of wealth. The state was used to begin building an economic base for itself. Thus, in contrast to the onerous private capitalist activity, all groups concentrated on the weak and vulnerable, newly autonomous state to reach power and wealth. The result was a formation of networks to build support through rent distribution, creation of a large parastatal sector, and purchase of urban support via state welfare services and subsidies. In this regard, although Callaghy is correct in questioning the prevalence of political motives of the ruling class, it can, nonetheless, be argued that corrupt politicians mainly continued along the same way of power and wealth formation inherited from their predecessors, the ex-colonisers. Notwithstanding, Callaghy's (1990, pp. 257-320) point that new political groups attempted to use rents from the state to reward allies and, at the same time, crosscut and control complicated ethnic, regional, religious, clientelistic, and emerging class ties, is well taken. As a matter of fact, one major task of this paper is to investigate whether or not privatisation is politically-induced, and whether or not it is determined by donors' macroeconomic stabilisation policies.

In the 1990s, however, many governments went a long way toward privatisation. Given political liberalisation and multi-party elections in some countries, such as South Africa, Tanzania, and Zambia, privatisation allowed newly elected governments to change previous statist policies. Mostly, the proliferation of privatisation in the nineties was a result of the relentless pressure of the World Bank and the IMF. As Callaghy (1989, pp. 115-38; 1990, pp. 257-320; 1993, pp. 463-519) and Toye (1991, pp. 151-200) point out, irrespective of many privatisation failures in Africa, the World Bank and the IMF rushed to claim the success of reform endeavors. Several factors are mentioned by the World Bank Report (1995) as testimony for this success. Two important contributors to success are divesture (degree of privatisation) and imposition of hard budget constraints (spending cuts or government shrinkage) on SOEs in lieu of the gradual decline of direct transfers, elimination

of direct and indirect subsidies, improving the price mechanism, and stipulation (control) of creditworthiness (loans) by lenders. Another important factor is administrative reform, through higher managerial expectations and more autonomy given to SOE managers. Yet as Bennell (1997, pp. 1758-1803) argued, reform of SOEs becomes all the more important given that attempts of restructuring them, using performance and management contracts with existing managements, have not been successful. The World Bank report (ibid.) indicated that financial sector reform was crucially important in privatising SOEs. Clark (1998) reports that in 1990 African stock exchanges (excluding the dominant market of South African) had a total market capitalisation of $8.7 billion, or 5.9 percent of the continent's total capitalisation. By 1995 this had increased to $26.9 billion, or 8.8 percent of Africa's market capitalisation. The non-South African markets have risen a cumulative 211 percent over the five-year period. However, as Callaghy (1990, pp. 257-320) and Lipumba (1994) indicate, most of the ownership (shares) transfer has been acquired by the government's close supporters. They are essentially the ones who have money to participate in the market.

It is noteworthy that in his critical analysis of the World Bank's (1994) report, Lipumba (1994) points out that the dominant opinion among intellectuals in Africa is that structural adjustment programs are part of the problem rather than of the solution to the African economic crisis. The World Bank report (1994) argues that the growth rate of output (percentage change in per capita real GDP) remains low even for countries that have improved their macroeconomic performance because adjustment efforts have not gone far enough in areas of public enterprise reform and privatisation. The problem with this argument, as Lipumba (ibid) contends is that it is unrealistic to expect success of privatisation during the mid-1980s, the same period when macroeconomic adjustments were implemented. In the mid-1980s, the focus of reforms was on macroeconomic stabilisation and exchange rate adjustment. Part of the stabilisation package is privatisation (higher unemployment of workers previously working for SOEs) and devaluation of currency which means lower real wages (higher inflation). This (together with exchange controls) leads to a deterioration of the real exchange rate and foreign currency black markets' proliferation.

IV. Empirical Analysis

Evidence from the above discussion of several Sub-Saharan African economies suggests that sluggish economic performance that usually precedes policy-shifting of transferring public entities into private enterprises, forces those countries to reluctantly follow World Bank and IMF privatisation policies. It, furthermore, indicates that governments, in order to maintain their power, usually sell public entities to their allies based on ethnic (tribal) and/or religious affiliations. To be sure, many of the African countries have authoritarian regimes that impose a certain governing group with the intention of indoctrinating certain religious or tribal beliefs. To ensure complete power, privatisation has often been used to control the country economically and politically. Examples abound. Table 1 presents a list of twenty-one such countries. Almost all of the African countries with authoritarian governments have adopted privatisation on pure political grounds. Therefore, although privatisation is ostensibly performed for efficiency purposes, the underlying motivations are, often-times, political.

Table 1 Size and Suspected Motivation of Privatisation, 1995

Country	Size of Public Sector (% of GDP)	Motivation
Angola	64.1	ethnic
Burundi	13.0	ethnic
Cameroon	21.6	ethnic
Central African Republic	26.6	ethnic
Chad	29.4	ethnic
Congo, People's Republic of the	38.8	n/a
Côte d'Ivoire	24.8	ethnic
Djibouti	42.0	n/a
Ethiopia	27.6	ethnic
Ghana	19.6	ethnic
Liberia	50.5	ethnic
Madagascar	13.3	ethnic
Mozambique	43.4	ethnic
Nigeria	15.8	religious
Rwanda	112.4	ethnic
Somalia	51.3	ethnic
Sudan	25.0	religious
Uganda	15.1	ethnic
Zaire	32.6	ethnic
Zambia	32.6	ethnic
Zimbabwe	45.0	ethnic

Source: African Development Bank, *African Development Report 1997* and information from various sources.

Do the features of political motives explain why these political motivations resulted in privatisation of public enterprises? The answer can be clarified by conducting a probit analysis of privatisation endeavors conditional on political motives and macroeconomic characteristics. The data includes the twenty-one countries included in Table 1. Annual data over the period 1970-1994 has been used. Privatisation efforts and public reform in most of these countries started in the 1970s and intensified in the 1980s and 1990s. Therefore, for comparative purposes the sub-sample 1980-1994 has been examined. The dependent variable (Y_i) is the decision (probability) of whether to privatise or not, given the country's characteristics or the values of the explanatory variables (political motives and the specified macroeconomic variables). The dependent variable is a dummy variable where $Y_i = 1$ if the decision to privatise is significantly dependent on the described characteristics (or the six explanatory variables); $Y_i = 0$, otherwise.

Y_i, or the probability of privatisation decision is related to six variables listed in Table 3. These variables are the size of the private (or alternatively public) sector (*SP*), per capita real GDP growth (ΔGDP), spending on defense (*SD*) - a measure of authoritarian power and budget deficit problems, changes in the real exchange rate (*RE*) - a measure of inflation and indicator of the size of the informal foreign currency market, control of banking (*CB*) -

access to lending (an indicator of banks' (which are mainly government controlled) support to government allies, and an indirect indicator of inflationary pressures) , and affiliation to a party or ethnic group (*AP*). *AP* represents a dummy independent variable X_i, considered as follows: $X_i = 1$, if political motives (religious, ethnic, etc.) resulted in privatisation; $X_i = 0$, otherwise. To do this, numbers have been assigned to the politically motivated cases defined in Table 1.

Table 2 Summary of Privatisation of Public Enterprises (1995-1999)

	Transactions Completed					Transactions by Sector					
	'95	'96	'97	'98	'99	Agri-culture	Finan-cial	Manufac-turing	Ser-vices	Trade	Other
Angola	..	56	..	..	..	9	..	29	9	9	275
Burundi	..	13	3	..	..	21	4	6	9	2	..
Cameroon	3	23	5	4	..	24	4	7	12	1	..
Central African Republic	..	..	..	..	..	8	4	9	14	..	..
Chad	13	6	..	..	..	9	5	6	8	3	..
Congo, Dem.	44	15	..	..	..	20	5	14	22	..	..
Congo, Rep.	2	3	..	..	..	3	1	6	10	1	..
Côte d' Ivoire	27	21	15	11	6	40	5	33	25	2	..
Djiboute	..	..	..	..	..	..	..	..	..	..	..
Ethiopia	9	..	..	1	..	..	..	6	3	1	115
Ghana	23	20	27	4	8	44	8	101	50	30	..
Liberia	..	..	..	..	..	..	..	..	..	..	..
Madagascar	24	..	..	..	1	31	4	33	14	4	..
Mozambique	112	38	31	..	..	75	2	256	120	126	..
Nigeria	..	..	..	..	..	23	24	23	10	1	..
Rwanda	..	..	..	..	..	1	..	1	..	..	..
Somalia	..	..	..	..	..	..	..	..	..	..	..
Sudan	..	..	..	..	..	11	1	8	11	1	..
Uganda	23	18	2	..	3	19	5	29	26	12	..
Zambia	60	91	55	16	10	71	6	69	102	20	..
Zimbabwe	..	..	3	..	1	3	1	1	1	..	..

Source: The World Bank, *African Development Indicators 2001*, p. 259.

Note: The rest of the sample countries' data is not available.

The size of the public sector variable (*SP*) (or government deficit as a ratio of GDP) is intended to indicate the extent to which the existing degree of public deficits impinges on the decision to privatise. It has been argued that privatisation has been directed toward the public finance imperative of macro-stability where SOEs have been a net drain on the coffers of treasuries. The spending on defense variable (*SD*) is meant to show the extent to which governments in these developing African economies are insecure and would like to stay in

power at all expense, thus partly explaining their political motives to privatisation. Importantly, large spending on defense in most of these African countries has compounded the public debt problems. The real exchange rate (*RE*) is taken as the ratio of the foreign price (times the nominal exchange rate) divided by the domestic price. The consumer price index has been used as a measure of the domestic price. The foreign price is the price of the country against which the African country' s currency is pegged. Usually this foreign country is also the largest trading partner. The real exchange rate (*RE*) serves a dual purpose. Partly, as Campos and Esfahani (1996, pp. 451-85) contend, exchange rate deterioration and the concurrent high episodes of inflation result from inefficient politically-oriented policies which cause severe recessions and multiple downturns in the economy. This justifies the inclusion of the economic growth variable (ΔGDP). Using real per capita GDP will help alleviate the problem of heteroskedasticity (which is common in cross-sectional data) because it adjusts the different countries' income by population size. To avoid the possible simultaneity (bidirectional causality) between this economic growth variable (*GDP*) and the size of the public sector variable (*SP*), we subtracted total government spending from GDP. That is, we used private spending plus net exports as an instrumental variable for GDP. Note that while the Keynesian model assumes that government spending is exogenous (a policy variable) to GDP, Wagner' s Law asserts that government spending depends on (is induced by) GDP (Birrd (1971, pp. 1-26), Afexentiou *et al.* (1991, pp. 316-333)). Hence, alleviating the possible simultaneity bias problem is important. Worsening of macro-economic conditions expedites the process of public enterprise reform, most of which may have become a burden on the public sector. In addition, the expansion of privatised schemes widens the foreign exchange gap as the need for more foreign capital arises. Foreign exchange is an absolute constraint on the success of privatised projects in that even if domestic saving is sufficient, domestic investment may still be low without the availability of foreign capital. Put differently, a salient explanation of the inclusion of the real exchange rate as an explanatory variable is the openness of trade prior to privatisation.

Another variable is the control of the banking system to have ready access to selective lending (*CB*) or soft credit. To help their supporters in purchasing and improving the privatised firms, governments control the banking system and provide loans to supporters. Thus fraudulent schemes of creditworthiness determination are used. This usually happens through selective appointments to key positions in the banking system, ownership of certain banks, or nationalisation. As a proxy for this variable, we used the percentage change in total loans which will also act as an indicator of inflationary pressures. We could not find data on loans to privatised firms.

Lastly, an important (dummy) variable is the degree of party (or ethnic group) affiliation (*AP*), based on the motivations shown in Table 1. Governments which undertake selective (political) privatisation usually belong to a certain party or ethnic group. Their policies are, thus, more likely to be partisan than nationalistic. Meanwhile, any expected efficiency benefits may have been thwarted through harmful income distribution effects.

Based on the above, the signs of the coefficients which display the likelihood that privatisation is politically motivated are all apriori expected to be positive. It goes without saying, that the set of all explanatory variables collectively acts as proxy for the factors underlying the profit-sharing relationship (represented empirically by the decision to

privatise) between the principal (government) and agent (private firm) or privatisation beneficiaries. That is, the underlying latent profit-sharing (privatisation) decision between the government and its allies (agent) is a linear function (with parameter vector β) of the six prescribed explanatory variables. The dependent dummy variable $Y = 1$, if the estimated *prob* ($Y = 1$) is high (exceeds one-half) as can be approximated by the *pseudo* R^2. Hence, we hypothesise that the probability a regime will pursue political privatisation increases with the profit-sharing motives embodied in a state of nature explained by the set of the envisaged explanatory variables. The selection of these variables has been based on previous empirical works by Dollar (1992, pp. 523-44), Campos and Esfahani (1996, pp 451-85), and Plane (1997, pp. 161-78), among others. All of these studies, however, focused mainly on the effects of a specific variable on privatisation. To our knowledge, none of them envisaged the possible set of macroeconomic determinants of privatisation. There is also an abundance of evidence from these studies showing that this set of explanatory variables comprises a number of variables known to be adding to the underdevelopment problem of Sub-Saharan African countries. In this respect, there might be other variables of smaller effects that could have been included in the set, such as some measure of development (see Plane (1997, pp. 161-78)). However, given that these variables might be correlated with the specified explanatory variables, we preclude such variables to maintain sufficient degrees of freedom for the probit model to be utilised in the analysis. This is all the more valid considering that higher development may yield ambiguous results as they may encourage or discourage politically motivated privatisation.

The model used for testing can be explained as: $prob(Y = 1) = prob(X\beta + \varepsilon > 0) = prob(\varepsilon > -X\beta)$; *and* $prob(Y = 0)$ *if* $(X\beta + \varepsilon \leq 0)$. Therefore,

$$Y_i = \beta_0 + \beta_1 SP + \beta_2 SD + \beta_3 RE + \beta_4 CB + \beta_5 AP + \beta_6 \Delta GDP + \varepsilon_i .$$

ε_i = random variable with zero mean and constant variance and covariance. Thus $\varepsilon_i \sim N(0, \sigma^2)$. It thus becomes clear that Y_i is a measure of the decision (probability) of whether to privatise or not. Observe that the *probability of* $(Y_i = 1)$ *equals the probability of* $(X\beta + \varepsilon > 0)$ *equals the probability of* $(\varepsilon > -X\beta)$ or that the higher the value of X_i, the more the macroeconomic variables and political bias of country i are resulting in a higher likelihood that country i will privatise whenever it becomes politically feasible.

The data sources are listed in Table 3. Equations 1 and 2 in Table 3 compare the distribution of predicted and actual outcomes (periods when privatisation occurred) for the full period 1970-94 and the sub-period 1980-90 (Equations 3 and 4). Because privatisation endeavors intensified in the 1980s and 1990s, we selected the subperiod 1980-1994, together with the entire sample period of 1970-1994. The statistical results essentially stayed the same indicating that the possibility of a structural shift after 1980 is not worrisome.

As shown in Table 3, the model has a reliable goodness of fit level as measured by the *pseudo* R^2, ranging between .69 to .71 for the total sample period, 1970-1994, whereas the range was somewhat higher for the subperiod 1980-1994, ranging from .74 to .82. The higher range of probabilities for 1980-1994 is consistent with the intensified privatisation efforts during the 1980s and the 1990s. The model also makes correct predictions 89 percent

of the time. That is, most of the high values of the explanatory variables correspond to a dependent dummy variable value of unity (implying the decision to privatise), whereas most of the low values of the explanatory variables correspond to a dependent dummy variable of zero (implying the decision not to privatise). In addition, the coefficient estimates are consistent with apriori expectations indicating the correct signs and they are all statistically significant. Further, there is no cause for undue concern about heteroscedasticity. The absence of heteroscedasticity and the log likelihood transformation test stated by Greene (1997), suggests that the estimators are consistent.

Table 3 Probit Estimation Results for the Period 1970-1994 and 1980-1994

Equation	Constant*	SP	SD	RE	CB	AP	ΔGDP	Log. likelihood	Pseudo R^2	Hetero scedasticity
1970-1994										
1	−14.61	32.89	49.62	17.67	5.19	21.33	32.64	−19.75	.69	17.22
	(−3.22)	(2.56)	(2.17)	(2.45)	(1.01)	(2.68)	(3.80)			
2	−13.92	34.23	46.15	18.26	5.08	18.92	27.51	−20.34	.71	11.31
	(−3.01)	(2.64)	(2.43)	(2.81)	(1.53)	(2.44)	(4.01)			
1980-1994										
3	−12.84	27.93	47.11	16.29	6.32	19.26	30.33	−21.10	.82	14.24
	(−3.60)	(2.52)	(3.22)	(2.52)	(1.09)	(2.93)	(3.90)			
4	−15.47	24.84	41.29	17.43	3.88	20.01	34.28	−16.58	.74	6.59
	(−2,26)	(2.34)	(2.98)	(2.54)	(1.13)	(2.77)	(2.89)			

Source: World Bank, *World Development Report 1997*, Oxford: Oxford University Press, 1997.

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Notes:

* In the probability model $E(Y_i): b_0 + bX_i$, the normal equations are $\Sigma = (X_i - \overline{X})(X_i - \overline{X})' b = \Sigma Y_i(X_i - \overline{X})$ and $\hat{b}_0 = -\hat{b}\,\overline{X}$ (because $\overline{Y} = 0$). Thus, the constant term is negative. To force the mean of the error term distribution to be zero, any non-zero fixed portion of the dependent variable is added to the constant term. That is the constant term changes by the difference between the sample mean of the error term and zero.

1. The dependent variable (Y_i) is a dummy variable.
2. Numbers in parentheses are the t-ratios.
3. The likelihood ratio (LR) = −2[log $L_{restricted}$ − log $L_{unrestricted}$]
4. Heteroscedasticity Test = L_{RH} = −2[log L_{rv} − log r] where L_{RH} = the log likelihood function; rv = error variance in the sub-sample; r = error variance in the entire sample.
5. Pseudo R^2 = {1−(1−log $L_{restricted}$/log $L_{unrestricted}$)}
6. The sample includes 21 countries listed in Table 1.

The only variable that seems to be insignificant is the control of the banking system (*CB*). This might be a result of data contamination, since we were not able to find data other than the change in total loans from the banking system over the sample period. Ideally, it would have been better to include only loans to privatised firms.

V. Concluding Remarks

This paper examined privatisation episodes in a sample of Sub-Saharan African countries that were under authoritarian regimes as of 1970. After surveying the multidimensional motives of privatisation in Sub-Saharan Africa, the paper focused its attention on the macroeconomic instability and political motivations as essential determinants of privatisation in those countries. A brief theoretical discussion employed a principal-agent model to investigate the mutually beneficial profit-sharing collaboration between the principal (government) and the agent (privatised firm). That is, the theoretical discussion is intended to show efficiency gains (or stating of profit maximisation conditions) expected from privatisation. But the empirical question is whether privatisation is politically induced, besides being a result of macroeconomic problems. The empirical model identified a set of variables designed to act as a proxy that creates the right circumstances for an expedient agent to collaborate with the government (principal) based on religious or ethnic biases and control the country economically and politically. A rudimentary probit model has been used to do the empirical work. The results in general are supportive of the basic hypothesis that privatisation in the sample countries is induced by macro-instability and politically motivated. Thus, one of the reasons why privatisation is not very effective in Sub-Saharan Africa is that it needs to be linked to competition and regulation policy. Because of the simplicity of the probit model developed in this study, it is important to take the empirical results with caution. Surely, the model can be refined by incorporating more explanatory variables, and more importantly, by considering different subperiods and better specifications of the dependent, dummy, variable. Notwithstanding its limitations, however, the model explains that privatisation responds to macroeconomic pressure and that it can be politically driven.

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