On Kin Groups and Employment in Africa

Paul Collier and Ashish Garg

WPS/95-16

1. Introduction

A common feature of African societies is that individuals belong to kin groups which impose reciprocal obligations upon their members. While kin groups are found in other societies, African kin groups are distinctive both by their ubiquity and by the strength of their claims upon members. Section 2 summarises current economic interpretations of kin groups as insurance and transfer institutions which succeed in lowering transactions costs in the traditional, small-scale economy. However, in the modern economy, where large scale production is required, firms must employ multiple kin groups. The resulting employment relations between managers and workers differ from those in which the basic unit is the individual employee. Kin groups will attempt to favour their own members in the assignment of good jobs. A kin group may be restrained in its favouritism either by competition from rival kin groups or by promotion practices imposed by top management. Even though kin group favouritism may be rife, it is not readily observable on conventional labour market data sets. Although we utilise an unusually rich Ghanaian data set, it still does not provide direct evidence enabling us to test whether managers favour workers from their own kin group. However, in Section 3 we set out a model in which kin group favouritism is shown to give rise to a wage premium for the largest kin group. Since our data includes the size of kin groups, and since these vary across localities, we are able to test for kin group favouritism indirectly by investigating whether there is a wage premium purely related to membership of the locally largest kin group. In Section 4 we test for kin group favouritism in Ghana, treating separately private and public firms. We find that in the private sector there is no evidence for kin group favouritism: workers are paid their marginal product. By contrast, in the public sector workers are rewarded for membership of the right kin group, but not for productive characteristics.

2. The Kin Group as an Economic Institution

In most of Africa's two thousand pre-colonial societies kin groups were the highest level of functioning authority. State-level authority structures are both recent and exogenously introduced. If institutions are endogenous to economic benefits then kin groups can be seen as an efficient response to the problems generated by African economic environments.

The environment in which kin groups formed was characterised by competition for resources, a high level of risk, a lack of readily storable assets, and constant returns to scale technology in production (Posner, 1980). Through the threat of exclusion the kin group was able to enforce particular acts of favour by one member to another because the calculus of costs and benefits for such acts had to be viewed in the context of a lifetime of potential reciprocity. The punishment was not merely social ostracism but exclusion from the range of transactions which the kin group facilitated. Through reducing the negotiation and enforcement costs of contracts in stateless societies, kin groups facilitated insurance, inter-generational transfers, the management of common pool resources and the provision of public goods. We illustrate with reference to the insurance function.

Insurance was provided by creating an income producing and transferring unit sufficiently large to span a range of economic activities. The standard insurance problems of adverse selection and moral hazard were solved by basing membership upon kinship. Because membership was based on kinship it was non-elective and so avoided adverse selection. Because all members of the group were closely observed by other members, there was approximately full information, so minimising moral hazard, (Posner, 1980). Udry (1994) provides evidence for the insurance process at work within a

Northern Nigerian village. Bates (1990) shows that in Kenya during the 1950s when economic circumstances changed so that one part of a kin group specialised in a particular activity began to enjoy permanently higher and safer incomes, it began to redefine itself so as to exclude others who had originally been members. However, while those few kin members who acquire safe incomes may not need the insurance services of the kin group, the market has yet to supply a competing service in the sphere of African small scale production because it has not solved the asymmetric information problem.

As illustrated by this example, a kin group is only as strong as its capacity to enforce continued membership on the currently successful. However, the enforcement mechanisms extend beyond exclusion from group benefits. Kin groups have developed sanctions by which to penalise those successful members who choose to exit. In the case of Kenya in the 1950s Bates argues that the withdrawal by the successful was punished by the upsurge of violence we know as Mau Mau, as the unsuccessful fought to reclaim what they saw as their rights. A more recent instance of the same process of penalising those among the successful who wish to exit the group was the legal contest over the burial of a successful emigrant from Western Kenya (Cohen, 1992). The community claimed the right to bury the body locally, despite a will to the contrary, and the Kenyan High Court upheld community rights. Underlying this dispute over the location of burial is an attempt to evade an enforcement mechanism of the kin group. Kenyan belief systems are such that burial within the community provides a powerful discipline by the community on its successful emigrants.

The combination of sanctions and benefits has maintained kin groups as effective institutions of reciprocity, supporting transactions which cannot be achieved by the nuclear household and for which a state is unnecessary. In effect the kin group is the Coasian firm: the organisation enforces transactions within itself without recourse to a market. Conversely, transactions between kin groups were high cost in traditional societies because of the absence of authority structures above the level of the group. However, there was little need for inter-group transactions. With constant returns to scale technology, production did not require multi-kin group employment, and most consumption was met through subsistence.

The efficiency of the kin group as a solution to the production and exchange problems of the African economy changed with the introduction of the modern economy with its increasing returns technology and specialist skills. A single kin group could not supply a sufficiently wide range of skills in a particular urban location. Hence, large organisations had no choice but to employ multiple kin groups. However, large organisations staffed by multiple kin groups face a set of problems generated because sub-sets of employees are bound by reciprocal obligations. From the viewpoint of kin group members the obligation of favour which pervades all other spheres of economic activity is also applicable in the context of the firm.[1] Hence, where one member of a kin group, namely a manager, has a choice as to whether to benefit either another member of the group or a non-member, both being his workers, punishment is liable unless the choice favours the member. Such favouritism is dysfunctional to the modern organisation because it conflicts with an incentive-compatible payments system in which productivity rather than social connection is rewarded. Hence, it is in the interest of the profit-oriented organisation to introduce mechanisms which neutralise the patronage network of the kin group. There are various devices which the firm can use

---

[1] For a more detailed exposition of this see the sociological study of Price (1975). He has convincingly documented with survey evidence the contradictory pressures placed on civil servants that of organisation commitment and kinship ties. Also he finds that where there is a conflict between bureaucratic allegiance and the demands of traditional structures the latter invariably triumphs.

to achieve this. The manager might be drawn from an ethnic group distinct from that of the workers. This has the advantage of transparency: it is apparent to all employees that the manager is not a member of any of the kin groups within the firm. Or payment might be strictly tied to productivity on a piece-rate system so that again, transparency is achieved with reward visibly related only to effort. Finally, firms might adopt rules which prevent a manager from employing people known to be in the same kin group.

In a competitive market organisations which fail to adopt practices such as these will be at a cost disadvantage, so that an evolutionary process will be removing patronage-ridden firms while kin groups will constantly be trying to invade new firms. However, in the non-market sector of the economy no such evolutionary or profit-motivated pressures exist and so the defense against patronage is optional. Whether the option is exercised depends upon the balance of advantage for politicians between the opportunities offered by public sector employment patronage and a more efficient public service delivery system. However, even when politicians choose the latter, the task of defending the organisation against the favouritism of kin groups is more difficult in the non-market sector. The disproportionate use of ethnic minority managers is hardly an option in the public sector, particularly if this is a commonly adopted solution in the private sector. The use of piece-rates is usually infeasible in the non-market sector for precisely the reason that it is non-market: namely, that its output is hard to measure.

To summarise, kin groups are predicted to have three economic effects depending upon the sector in which they are located. First, in the small scale sector production will be organised on an intra-kin group basis. The kin group will lower transactions costs compared with atomistic behaviour. Secondly, in the large scale private sector production will be organised on an inter-kin group basis. The patronage which kin groups will seek to enforce will, however, be restrained by organisational innovations not found in non-kin group societies. Thirdly, in the large scale non-market sector production will be organised on an inter-kin group basis. The patronage which kin groups seek to enforce will be unrestrained either because restraint is infeasible or because there is no demand for it.

The demonstration of the first of these propositions is, in effect, the agenda of the new economic anthropology. Evidence is accumulating to view the kin group as an appropriate institutional solution to the high transactions costs which would otherwise characterise stateless societies. This paper tests the second and third propositions using data for Ghana.

3. A Model of Kin Groups and Earnings in the Modern Sector

First consider the effect of kin groups within a single organisation. Let the organisation be composed of managers and workers. Managers have discretion to assign workers between high-paying jobs, H and low paying jobs, L, but face a budget constraint so that only a proportion, h, are high-paying. The organisation does not face competition so that the H jobs can be assigned without reference to productivity. To simplify, let the productivity of all workers be identical with the workers in H jobs enjoying rents and the workers in L jobs earning their marginal product. There are k equally sized kin groups of employees. Managers are drawn from these kin groups strictly in proportion to the size of the kin group so that each kin group has equal representation at the managerial level. Workers from different kin groups are distributed evenly among the managers (i.e. the firm cannot solve its problem simply by turning each department over to a particular kin

group). Managers are under kin group pressure: a manager from kin group i always assigns workers under him from kin group i to H jobs in preference to workers from other kin groups.

In the model as currently specified, in aggregate there are no earnings differences between kin groups because each kin group is equally well able to look after its own. Although rationing of H jobs takes place on the basis of kin group membership, unless the data set includes both the kin groups of workers and managers and identifies for each worker the specific manager who is responsible for the job grade, the nature of the rationing will be undetectable.

Now introduce a *dominant* kin group, in the sense only that it is larger than the other groups, the others being all of equal size. One way in which being relatively large may help a kin group is if this enables its members to gain a disproportionate share of the managerial positions in the organisation. For example, if the managers are appointed by a politician who gains power through a winner-take-all democratic process, a majority kin group can capture all the managerial positions and hence gain all the H jobs for its members. However, even if the dominant kin group receives no advantage in managerial positions, its members still receive a disproportionate share of H jobs.

To see this, let managers and workers be drawn from kin groups strictly in proportion to the share of the group in the population, as previously but now introduce variation in the size of kin groups. The dominant kin group has d per cent of the population, each other group having e per cent ($d>e$). Hence the dominant group has d per cent of the managers and d per cent of the workers, each other group having e per cent of both. Each manager is able to assign a proportion h of his workforce to H jobs. If the manager is from any of the non-dominant kin groups, he wishes to favour a proportion e of his workers, namely those from his own group. If he is from the dominant group he wishes to favour d of his workers, again those from his own group. If $h \leq e$ then all managers only promote their own kin group to H jobs but no manager is able to satisfy more than his own kin group. In this case, since the probability of being under a manager of the same kin group is by assumption proportional to the share of the kin group in the population, the dominant group receives no advantage. However, if $h > e$ then the dominant group receives a disproportionate share of H jobs. First, suppose that not only is this inequality satisfied but so is $h > d$. That is, all managers, including those from the dominant group have sufficient H jobs that at the margin they must look beyond their own kin group. In this case the probability of a worker gaining an H job through patronage is therefore the same as the probability of the worker having a manager from the same kin group. Since the probability of gaining an H job on criteria other than patronage is the same for all kin groups, there is therefore overall a relationship between the share of the kin group in the population and the overall returns to labour.

The extent of the advantage conferred by membership of the dominant kin group is determined by the value of h relative to e and d. For $h \leq e$ there is no advantage since all managers assign all the H jobs to members of their own kin group. Now consider the premium for $e<h<d$. That is, managers from the dominant kin group allocate all H jobs to kin. The dominant kin group gets H jobs through two routes, preference from managers who are from the kin group, yielding $d.h$ jobs, and its fair share of the overspill from the managers of other kin groups, yielding $(h-e).d.(1-d)$. Thus, the proportion of the dominant kin group gaining H jobs, P_d, is:

(1) $$P_d = (h-e)\ (1-d) + h$$

The proportion of all other workers gaining H jobs, P_e, is:

(2) $$P_e = \{h - d[(h-e)(1-d) + h]\}/(1-d)$$

The *dominant kin differential*, P_d-P_e, is therefore:

(3) $$P_d\text{-}P_e = h\text{-}e$$

Finally, consider the differential for $e<d<h$. That is, there are sufficient H jobs that all managers exhaust kin group pressures before filling all the jobs. Equation (1) is now replaced by (4)

(4) $$P_d = (h\text{-}e)(1\text{-}d) + d$$

and with an equivalent amendment to (2) the dominant kin differential becomes:

(5) $$P_d\text{-}P_e = [(1\text{-}h).d/(1\text{-}d)] - e$$

which is strictly less than (3). The dominant kin differential is therefore respectively zero, an increasing function of h, or an increasing function of d, depending upon which of the three inequalities holds, the relationship being depicted in Figure 1.

Figure 1:
The Dominant Kin Differential

Having considered the individual firm, now consider the entire population of firms. Let h, e and d denote the proportions of H jobs, each minor kin group and the dominant kin group in the aggregate labour market, and h_i, e_i and d_i denote their values in firm i. Firms differ with respect to h, being distributed over the interval [0,1] by the density function F(h). If all firms were to employ kin groups in the same proportions, d and e, then F(h) would distribute the population of firms into the three dominant kin differential categories. However, since differences between firms with respect to h give rise to differences in the kin differential, kin groups will not be indifferent as to employment between firms. Kin groups are not directly concerned with the differential but with the proportion of the kin group gaining H jobs. Since for all kin groups this proportion is

monotonic in *h*, all groups will prefer to work in high *h* firms. However, the effect of *h* on the proportion of the kin group gaining *H* jobs differs as between the dominant group and other groups. From (3) and (5) the dominant kin group is most advantaged in firms for which *h=d*, and loses its advantage as *h* tends to either *e* or unity. Hence, to the extent that d_i and e_i are endogenous, the dominant kin group will be disproportionate in firms for which h_i is in the neighbourhood of *d*.

Let the wage premium of *H* jobs over *L* jobs be denoted by *w*. The model predicts that the in aggregate the dominant kin group will receive a wage premium, W_d, over other kin groups because of its ability to acquire a disproportionate share of *H* jobs. If all firms have the same *h*, the magnitude of the dominant kin group premium is directly related to the dominant kin differential discussed above. For *h<e* there is no premium, for *h* in the range *e<h<d,* the premium is:

(6)
$$W_d = w.(h\text{-}e)/\{1+w\{h\text{ -}d[(h\text{-}e)(1\text{-}d) + h]\}(1\text{-}d)\}$$

and for *e<d<h* it is:

(7)
$$W_d = w\{[(1\text{-}h).d/] \text{ - } e\}(1\text{-}d)/\{1+w\{h\text{ -}d[(h\text{-}e)(1\text{-}d) + d]\}(1\text{-}d)\}$$

To the extent that *h* differs across firms, if d_i is equal to *d* for all firms, then the aggregate premium is the weighted average of these three premia, the weights being given by the density function F(*h*). The aggregate premium could potentially be either increased or reduced by the endogeneity of d_i. Members of the dominant kin group attempt to become disproportionately represented in those firms for which *h* is close to *d*, but firms may resist this process. The transfer of dominant kin workers from firms with lower values of *h* would raise the aggregate premium since the firms gaining dominant kin workers offer both relatively and absolutely higher prospects of *H* jobs than the firms losing them. However, the transfer from firms with higher values of *h* would lower the aggregate premium since the firms gaining dominant kin workers offer relatively higher, but absolutely lower, prospects of *H* jobs than the firms losing them.

The purpose of the model has been to provide some micro-foundations linking kin group preference behaviour, which is directly unobservable on our data, to a testable phenomenon, the wage premium of the dominant kin group. The model suggests that if kin group preference behaviour is widespread it will give rise to a premium for the dominant kin group except in the probably unusual circumstance in which *h<e* for all firms. The model also provides some predictions concerning the magnitude of the premium. Our data include information on the aggregate *d* for a variety of local labour markets and so potentially permit estimation of the relationship between the share of the dominant kin group in the labour market and the magnitude of the kin group premium. However, the model shows that the size of the premium is not monotonic in *d*. Hence, our test of kin group preference is confined to the existence of a dominant kin group premium.

4. Earnings in the Ghanaian Modern Sector

We now test the model on data for the Ghanaian modern sector. The data set we utilised was from the Ghana Living Standards Survey of 1989. This particular data set was unusually rich as apart from information on wages, education, migration and household characteristics, it contained results of a battery of cognitive and aptitude tests for a sub-sample. These tests were important because they

help to distinguish the human capital function of education versus screening/credentialist functions and whether earnings determination differs both in the public versus the private sector, and for natives and migrants.[2] The tests provided the basis for an earnings function which controls for some features of innate ability, cognitive skills, tribe, and migration status.

We proxy the membership of the dominant kin group as follows. Because tribes are geographically concentrated, each region has a different dominant tribe. For example the Akans are the dominant tribe in the Ashanti region while the Gas are the dominant tribe in the Volta region. However, the tribes themselves are too large to be kin groups: a kin group is a sub-set of a tribe. We can test for this since members of the tribe who are immigrants to the locality can be presumed not to be members of the kin group. For example, Akans from the Western region are not generally kin to the Akans in the Brong-Ahafo region. Also note that the converse need not follow: not all members of the dominant tribe from the same locality need be members of the same kin group. However, they have a positive probability of being so, whereas immigrants from other localities will not belong to the dominant kin group even if they are members of the dominant tribe, and similarly neither will be members of other tribes. Hence, we have three population groups: a local dominant tribe, non-dominant locals and migrants. We predict that since only the first group can be in the dominant kin group, its members will contain all the group which receives the rents.[3]

In Table 1 below we present the statistics for the main tribes and religious groups in the public and private sectors of our sample. The main tribal groups are Akan, Ewe, Ga and Hausa, each concentrated in its own region. However, because more than half of the sample are migrants, the group which is locally dominant constitutes only 22 per cent of the public sector and 34 per cent of the private sector, this corresponding to d in the model of the previous section. The share of other local kin groups is 9 per cent, and 13 per cent in the two sectors. The composition of the population thus displays two features which the model predicts as conditions for the existence of a dominant kin group premium: the share d is much less than 100 per cent, and d is large relative to e. In Table 2 below we present descriptive statistics for the dominant kin group, the minor kin groups, and migrants in the public sector.

It is evident from Table 2 that those in the locally dominant kin group are getting a wage premium over other locals. The difference in wages is over 20 cedis an hour while the levels of education and other characteristics are roughly comparable. However if we compare the locals with the migrants we find that the migrants have higher wages, higher education and possess more educational certificates.[4]

Table 1:
Composition of Private and Public Sectors by Ethnicity and Religion
(percentages)

Group	Public	Private

Local dominant group	22.6	34.0	
Other local groups	9.0	13.0	
Migrants dominant group	31.9	27.8	
Migrant non-dominant group	28.5	25.3	
Akan tribe	52.5	47.5	
Ewe tribe	14.6	20.2	
Ga-Adangbe tribe	11.4	12.7	
Hausa tribe	1.45	1.5	
Christian	79.7	69.6	
Moslem	8.8	9.3	

Table 2:
(a) Descriptive Statistics for the Various Groups in the Public Sector

Variable	Local Dominant Group	Other Local Groups	Migrant Dominant Group	Migrant Non-dominant Group
Total wages	87.18	65.98	100.50	95.52
Education (years)	11.20	10.75	11.48	11.46
Cognitive score	28.53	27.05	30.84	30.18
Raven score	24.56	24.00	25.58	25.98
Experience	10.74	8.59	11.79	11.46
Professional cert	0.016	0.00	0.015	0.067
Technical cert	0.042	0.10	0.081	0.040
Parents educ	8.37	7.38	7.33	7.44
Advanced educ	0.325	0.303	0.356	0.378

(b) Descriptive Statistics for the Various Groups in the Private Sector

Total wages	62.65	58.59	81.18	91.17
Education (years)	8.29	7.65	8.44	9.46
Cognitive score	19.98	21.1	21.17	23.35
Raven score	23.51	24.0	23.71	23.24
Experience	4.27	4.08	5.17	6.01
Professional cert	0.00	0.00	0.00	0.0423
Technical cert	0.021	0.014	0.21	0.0677
Parents educ	6.93	5.86	7.38	7.36
Advanced educ	0.059	0.104	0.0402	0.1949

We estimate two sets of earnings functions, one on the sub-sample for which cognitive skills, directly tested, and innate ability, directly tested, are measured, and one on the full sample for which only education, qualifications and experience are measured. To the extent that the cognitive skills capture human capital, all other measures should be insignificant in the earnings function if skill alone is rewarded. The reduced form for the sub-sample is:

$$(8) \qquad \ln W = c_1 + c_2\,S + c_3\,R + c_4\,H + c_5\,L + c_6\,L^2 + c_7\,DT + \lambda + w$$

Log of earnings (W) are determined by schooling (S), natural ability (R), cognitive Skills (H) experience (L) and experience squared (L^2). DT is a dummy variable for the locally dominant tribe. However since we analyse the earnings regression in the public and private sectors and for locals and migrants the expectation of the error term $E(w)$ conditioned on being in any of the groups is not zero. This is because being a migrant or a public sector worker are choices. Since these are unlikely to be random, there could be sample selection bias. Hence, we control for sample selection bias using the Heckman–Lee two step procedure[5] and λ selection correction term.

---

[5] Also, because workers are taking two decisions whether to work in the private or public sector and whether to migrate or not, we have a double selection problem. Garg (1995) considers this problem in detail and under what conditions it can be solved using the Heckman - Lee two step procedures.

The test for kinship ties is a joint test that c_7 is significantly different from zero for locals *and* that it is insignificant for migrants. This is because to belong to the dominant kinship group and hence benefit from patronage one must both be a member of the dominant tribe and a native to the place. The possible effect of kinship on earnings can be distinguished from both a `taste for discrimination' and a competitive market. If there is a taste for discrimination, tribe rather than kin-group will be rewarded. In a competitive economy the earnings of employees will reflect only their productivity to the firm. The differing predictions of the three hypotheses are summarised in Table 3.

Table 3:
Testing Between Alternative Hypotheses

Hypothesis	Migrants		Natives	
	DT	NDT	DT	NDT
Pure competition	-	-	-	-
Taste for discrimination	+	-	+	-
Kinship ties	-	-	+	-

Table 4 presents the results for the full sample. In the private sector there is no premium on belonging to the dominant tribe either for locals or migrants. A test for the equality of earnings cannot be rejected at the 10% level. Either pressure for kin group preference is not a feature of Ghanaian organisations or that pressure is successfully restrained within the private sector. However, in the public sector there is a premium upon belonging to the dominant tribe conditional on being a native. The premium is large, about 24 per cent, statistically significant and extremely robust to alternate specifications. A test for the equality of earnings rejects the hypothesis at the 10% level. Immigrants to the locality receive no premium even if they are from the dominant tribe, nor is there a premium for particular religious groups, thereby rejecting a 'taste for discrimination'. When the earnings function is run with dummies for the specific tribes in addition to the variable for the locally dominant tribe they are not collectively significant[6] as indicated by F tests. It is membership of a local dominant kinship group which is generating the premium rather than either being of the same religion as the locally dominant group or being in any particular tribe.

Hence, the public sector rewards membership of the dominant kin group whereas the private sector does not. To test differences in rewards further we turn to the sub-sample on which we have more detailed information. Table 5 shows the earnings function for the Ghanaian private sector. The results are in full conformity with the standard human capital model: only cognitive skills are rewarded. Controlling for cognitive skills, the coefficients on years of education, advanced education and the raven score are jointly and individually insignificant. Work not reported here (Garg, 1995) establishes that, as might be expected, cognitive skills are produced by a combination of education and innate ability. However, private firms only reward education and innate ability to the extent that these have generated cognitive skills.[7]

---

[6] For conciseness we have only reported the results which have all the tribal variables and the variable for dominant religion entered together. The other specifications which are combinations of the tribal dummies can be obtained from the authors.

[7] Also of significance in this regression is the sample selection term for sector choice lambda 2 is negative, indicating that employees in the private sector are negatively selected.

Table 4:
Wage Regressions for Natives and Migrants in the Formal Sector

Variable	Public Sector		Private Sector	
	Natives	Migrants	Natives	Migrants
Education	0.244* (0.012)	0.0498* (0.007)	0.0189* (0.011)	0.066* (0.014)
Teachers cert	0.386* (0.155)	0.3768** (0.090)	-	0.841 (0.0651)
Experience	-0.041* (0.017)	0.0155 (0.0104)	0.033 (0.031)	0.097** (0.022)
Experience^2	-0.0008 (0.0005)	0.0001 (0.0003)	-0.0006 (0.001)	-0.002** (0.008)
Agriculture	-0.251 (0.138)	-0.131 (0.076)	0.4115 (0.217)	0.57491** (0.131)
Dominant tribe	0.237* (0.111)	0.0561 (0.0501)	0.1100 (0.215)	0.019 (0.131)
Ewe tribe	0.406 (0.565)	-0.004 (0.077)	-0.035 (0.230)	-0.559 (0.555)
Ga tribe	-0.135 (0.134)	-0.008 (0.116)	-0.006 (0.250)	-0.027 (0.198)
Moslem	0.0414 (0.208)	0.0979 (0.120)	0.126 (0.342)	-0.144 (0.292)
Dominant religion	0.7134 (1.92)	0.3237 (0.323)	0.343 (0.855)	0.218 (0.564)
Lambda1	0.234 (0.3425)	-0.067 (0.065)	0.332 (0.637)	0.213 (0.321)
Lambda2	-0.0198 (0.168)	0.045 (0.167)	-0.113* (0.043)	-0.701* (0.302)
Constant	3.61** (0.199)	3.52** (0.121)	3.37** (0.270)	2.95** (0.198)
Regression# adj R2	0.285	0.308	0.06	0.306
# of obs	130	339	133	227

** Significant at the 1% level;
* significant at the 5% level
+significant at the 10% level.

Lambda1: the selection correction term from the migration probit. Lambda2: the selection correction term from the public private choice probit.

Test for the equality of dominant tribe in public sector: difference = 0.178 / 0.115 = 1.54: cannot reject at 10% significance level.

Test for the equality of dominant tribe in public sector: difference = 0.091 / 0.251 = 0.362: reject at the 10% significance level.

These results can be compared with two other studies of wage determination in the Ghanaian private modern sector. Jones (1995) is unable to control for cognitive skills but is able to compare the returns to education in earnings functions for Ghanaian private manufacturing with the returns to education in the production functions of the employing firms. She finds that the hypothesis that the returns are the same cannot be rejected. Together with the results above, this suggests that private firms adopt efficient employment policies. Characteristics are rewarded only to the extent that they contribute to output: workers are paid their marginal products and differences in earnings reflect underlying differences in productivity. However, Teal (1996) finds that there is significant profit-sharing with employees: wages are higher in firms with higher profits. Hence, it is not that competition eliminates the scope for patronage in the private sector, but rather that such patronage that exists is unrelated to either kinship or a taste for discrimination.

Table 5:
Wage Regressions in the Private Sector for Natives and Migrants
Dependent variable: log of wages

Private Sector

Variables	Migrants Coefficients			Natives Coefficients		
Education	-	-	0.0449 (0.045)	-	-	-0.0930 (0. 0 6 3 6)
Advanced	0.266 (0.358)	0.0372 (0.378)	-	-0.222 (0.373)	-0.1211 (0.389)	-
Cognit. score	0.3705** (0.1159)	0.2641* (0.1196)	0.2861* (0.117)	0.3501* (0.151)	0.2955* (0.1356)	0.3518** (0.135)
Raven score	-0.1565 (0.177)	-0.312 (0.162)	-0.0031 (0.171)	-0.0104 (0.022)	-0.0295 (0.1422)	-0.0457 (0.147)
Experience	0.0405* (0.0199)	0.0563 (0.0515)	0.0508 (0.053)	-0.0185 (0.060)	-0.0042 (0.065)	-0.033 (0.065)
Experience squared	0.0024 (0.003)	-0.001 (0.002)	0.001 (0.002)	0.0025 (0.0029)	0.0025 (0.003)	0.0034 (0.003)
Agriculture	0.884** (0.360)	1.152*** (0.356)	1.151** (0.371)	0.295 (0.368)	0.3027 (0.338)	0.1838 (0.318)
Dominant tribe	0.3921 (0.327)	0.187 (0.248)	0.167 (0.259)	0.02735 (0.256)	-0.1676 (0.279)	0.228 (0.278)
Constant	3.59** (0.519)	3.90 (0.430)	2.95** (0.702)	3.80** (0.579)	3.49** (0.479)	4.47** (0.773)
lambda 1	-	0.1700 (0.248)	0.1902 (0.328)	-	0.2634 (0.259)	0.3224 (0.455)
lambda 2	-	-0.753** (0.243)	-0.672** (0.311)	-	-0.1108* (0.054)	-0.145* (0.622)
adj R²	0.299	0.309	0.363	0.134	0.12	0.091
# of obs	65	65	65	68	68	68

** significant at the 1% level
*significant at the 5% level
⁺ significant at the 10 % level

Additional variables were included for regions, and rural areas

Lambda 1 the selection correction term from the migration probit

Lambda2 the selection correction term from the public private choice probit

Table 6 reports the same earnings functions for the public sector. As in the full sample there is a large and significant premium for membership of the dominant kin group and no evidence of a taste for discrimination. However, the sub-sample reveals a further dramatic difference with the private sector: in the public sector there is no return for cognitive skills. Were this result taken in isolation from the previous results on the private sector the most natural interpretation would be that our measure of cognitive skills was inadequate to capture the skills which employers were rewarding. However, recall that for the private sector our measured cognitive skills fully capture all the benefits of education. Hence, the most likely explanation is that public sector rewards are simply unrelated to productivity. The returns to education reflect only credentialism. This is shown by the coefficients of professional and teaching certificates still being significant controlling for cognitive skills. This direct premium upon education unrelated to skill might reflect a failed attempt to contain patronage by rewarding something readily measurable. The Ghanaian public sector thus displays the characteristics of an extreme patronage system. Only kin group membership and credentialism are rewarded, nothing being left over for the skills rewarded in the private sector.

Table 6:
Wage Regressions in the Public Sector for Natives and Migrants
dependent variable: log of wages

Variable	Public sector					
	Migrant Coefficient			Native Coefficient		
Advanced	.1973 * (.1127)	.1912 * (.1155)	.1934 * (.111)	-.1264 (.1426)	-.1375 (.177)	-.0149 (.136)

Teaching certificate	.4051** (.1388)	.4256** (.138)	.4005** (.137)	.5238** (.1984)	.523** (.206)	.512** (.216)
Professional certificate	.569 ** (.229)	.4069* (.220)	.3924+ (.243)	.3710 (.2264)	.5088* (.229)	.1665* (.0705)
Cognitive score	.0059 (.050)	.0131 (.0534)	.0137 (.043)	.0698 (.0709)	.0738 (.0847)	.058 (.0771)
Raven score	.1169 ** (.0484)	.1125* (.0509)	.1089 * (.044)	.0343 (.0395)	.0159 (.00863)	.0576 (.007)
Experience	.0068 (.0157)	.0131 (.017)	-.00218 (.0165)	.0387* (.007)	.0415* (.0232)	.0543* (.025)
Experience squared	.00063 (.0005)	.0004 (.0005)	.0007 (.0005)	-.0010* (.0005)	-.001 (.0008)	-.0014 (.008)
Agriculture	.4629 ** (.1687)	.432 ** (.168)	.3388* (.1417)	-.0903 (.164)	-.2115 (.167)	-.3506* (.149)
Ewe tribe	–	–	.0125 (.0173)	–	–	-.282 (.173)
Ga-adangbe	–	–	-.143 (.135)	–	–	-.172 (.155)
Hausa tribe	–	–	-.674 (1.47)	–	–	-.452 (.457)
Dominant religion	–	–	.134 (.932)	–	–	.347 (.249)
Dominant tribe	.123 (.0889)	.1286 (.0898)	.1278 (.086)	.308** (.1304)	.3518** (.1386)	.301* (.1244)
Lambda 1 migration	–	-.0542 (.118)	-.0485 (.1438)	–	.1008 (.1624)	.1303 (.1724)
Lambda 2 sector choice	–	.0432 (.166)	.05642 (.178)	–	-.0184 (.1908)	-.0177 (.1450)
Constant	4.042 ** (.164)	3.92 ** (.214)	3.938** (.155)	4.088** (.1903)	3.82** (.2879)	3.995** (.1685)
Adj R2	0.364	0.391	0.4116	0.368	0.282	0.296
# of obs	152	152	164	64	64	72

** significant at the 1% level
*significant at the 5% level
+ significant at the 10 % level
group and credentialism is rewarded, nothing being left over for the skills rewarded in the private sector.

5. Conclusion

Kin groups link agents by reciprocated obligations. We have suggested that such groups were a rational and efficient economic response to the small scale, high risk, pre-modern African environment. They persist because the small scale, high risk environment remains the dominant sector of African economies. As functioning entities they have therefore colonized the modern sector of the African economy. Because of the larger scale of the modern sector, its organizations must employ workers and managers from multiple kin groups. This introduces a new type of agent into the production problem. Whereas with atomistic labour markets managers will respond to an incentive to reward performance in their workers, in kin group labour markets managers have a strong interest in dispensing patronage because they face penalties for not doing so. Nevertheless, firms can restrain managers through various devices which prevent patronage.

We have found that in Ghana the modern private sector appears to have done just this. Hence, overall in the Ghanaian private sector, both large and small scale, kin groups provide economic benefits: in the small scale sector they offer cheap solutions to otherwise intractable problems such as asymmetric information and inter-temporal transfers, while in the large scale economy their potential costs are avoided. By contrast, in the public sector, kin groups appear to have devastating effects to the point at which it is hard to see how the public sector can be at all productive.

The problem posed by kin group preference in the public sector is not confined to African societies. Platteau (1994) cites evidence for a similar phenomenon in Asia. However, the conditions which give kin groups an advantage over market solutions for transactions may be more pronounced in Africa. For example, agriculture is usually climatically more risky, making the insurance service provided by kin groups more important, and there are fewer marketable assets,

making the inter-generational transfer service provided by kin groups more important. An implication is that those African societies in which kin groups are strong face a dilemma. Many African societies wish to maintain a large public sector in order to counter the predominance of ethnic minorities in the modern private sector. Yet if this sector is to be productive rather than parasitic then kin group behaviour must be restrained. Although the modern private sector has successfully restrained kin group pressures, the techniques which it uses, such as piece-rates and ethnic minority managers, may not be open to the public sector. If restraint proves infeasible then the only other strategy for a viable public sector would be to dismantle the kin groups. Since these groups currently provide real benefits in the small scale economy, such a strategy, even if feasible, would impose high costs on the informal economy. The alternative would then be to accept that the comparative advantage of African societies lies disproportionately with private activity, and so minimize the range of activities located in the public sector.

References

Bates, R.H. (1983) *Essays on the Political Economy of Rural Africa*, Cambridge: Cambridge University Press.

—— (1990) `Capital, Kinship and Conflict: the Structuring Influence of Capital in Kinship Societies', *Canadian Journal of African Studies*, 24, 2: 151–64.

—— and K. Shepsle (1995) `Demography and Institutions', mimeo, Department of Government, Harvard.

Cohen, D.W. (1992) *Burying SM: the Politics of Knowledge and the Sociology of Power in Africa*, London, James Currey.

Garg, A. (1995) 'Are Workers Screened in Low Income Countries' mimeo. Harvard.

Glewwe, P. (1995) 'The Relevance of Standard Rates of Return for Education Policy: a Critical Assessment' *Journal of Development Economics*, 47 (1).

Jones, T. (1995) `Are Manufacturing Workers Really Worth their Pay?', WPS/94.12, Oxford: Centre for the Study of African Economies.

Platteau, J.-P. (1994) `Behind the Market Stage Where Real Societies Exist, Part II: the Role of Moral Norms', *Journal of Development Studies*, 30:,753–818.

Posner, R. (1980) `A Theory of Primitive Society' *Journal of Law and Economics*, 23: 1–53.

Price, D. (1975), *Society and Bureaucracy in Contemporary Ghana.* University of California Press.

Teal F. (1996) `The Size and Sources of Economic Rents in a Developing Country Manufacturing Labour Market', *Economic Journal*, Vol .105.

Udry, C. (1994) `Risk and Insurance in a Rural Credit Market: an Empirical Investigation in Northern Nigeria', *Review of Economic Studies*, 61 (3), no. 208: 495–526.