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Four Essays on the Dynamics of Social and Power Structures in Africa

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Introduction

"What we try to understand in development is the process of formation, change, and development of both political and economic markets and the way in which that process occurs... we must develop a body of political-economic theory, since it is the polity that specifies and enforces the economic rules of the game and we still do not have a clear understanding of the interplay between politics and economics... This entails gleaning from anthropologists and sociologists what they have come to learn about informal constraints and integrating that knowledge with economic and political theory..." (North 2001, p.491)

The challenge of understanding the persistence of poverty pushed development economists far beyond the traditional limits of their discipline. By increasingly using concepts like social capital, trust, kinship ties, colonial legacy, social opportunities, political freedom, ethnic coalitions, state failure, and by making them part of their field of investigation, development economists started poaching on the foreign territories of sociology, anthropology, history or political science. Two of the main culprits for such a breaking in other social sciences were caught and rewarded with a Nobel prize, but many others are still running.

The new institutional economics and its success was a first important step in that direction. It broadened the spectrum of economics by incorporating the set of rules and norms which shapes individuals' decisions and constraints. The persistence of institutions and the context of their emergence appeared to be a key parameter for understanding the variations in the levels of income across countries. As a consequence, the variations in

legal systems, a field of study traditionally explored by political scientists, received much attention. For understanding these variations, the origins of formal rules were investigated, which made necessary to tackle some new issues: the distribution of power and the mechanisms of elaboration of collective choice. Explaining the patterns of institutional settings furthermore required to dive in the analysis of their historical determinants. The path-dependency of countries destinies was emphasized and historical shocks - colonization in particular - were all the more examined as they offer a framework close to a natural experiment. Economists started doing history.

The second major thrust - and Nobel prize - that pushed economics out of its natural boundaries was the recognition that poverty changes and reduces the set of opportunities of any individual. The impossibility to access the markets was first seen as a major issue questioning the adequacy of the neoclassical model. Pervasive market imperfections in developing countries were compelling, and understanding how individuals face these imperfections led to the exploration of new territories. Non-market institutions appeared as the response rationally set up by individuals to solve the problems of information asymmetry, moral hazard and prohibitive transaction costs, and therefore entered the economists' toolbox. These include rural institutions, interpersonal relationships, social networks and informal contracts, all these themes being traditionally those of anthropology and sociology. But the capability approach of poverty also opened a more normative debate revolving around two major values: justice and freedom. Interest for justice led to a renewed attention for distributional issues and to the investigation of the level and determinants of inequalities, equity, and social opportunities. Interest for freedom legitimated further the adoption of such fields of research as democracy or empowerment, the lack of participation of citizens being viewed as a dimension of poverty.

The evolutions of mainstream doctrines of international institutions followed and reinforced these trends. The disappointing outcomes of adjustment policies cast doubts on the power of markets and traditional economic recipes to overcome the obstacles to development. The blanket vision that inspired policies in the 1980s was strongly criticized, and the need for a better understanding of the specific paths and patterns of institution-

building in each country was acknowledged - at least in principle. The endogeneity of political structures and policy decisions were claimed to be of high relevance henceforth, and the participation of citizens to the process of policy-making got in fashion.

Research and policy agendas thus lined up to make economists push the traditional limits of their discipline. The complementarity between social science disciplines appears all the more obvious when it comes to studying Africa. The weight of the colonial recent past makes it almost impossible to deal with African economies without having a view on institutional persistence and state-building. The importance of ethnic groups, though sometimes overblown, is also compelling. These two factors are frequently claimed to deter democratization and impede the emergence of a developmental State. On a more general level, the pervasive state and market failures in Africa make economists often feel helpless. The challenge of understanding African economies definitely makes it necessary for economics to regenerate by the interaction with other social sciences.

This new strand of economics on Africa appeared as a fascinating field of research for me. Repeated travels in West-Africa added up to a sheer intergenerational reproduction of tastes and values to make me particularly interested in the specific social, economic and political structures of these countries. My interest in the other social sciences made me particularly receptive to the necessity of interactions between these disciplines and keen to explore the border zones of overlap. This aspiration found a natural echo in the lab where I had the chance to make my research. Upon my arrival at DIAL, I was immediately integrated to a research project led by Denis Cogneau dedicated to the analysis of long-term determinants of development, social mobility and inequality in a comparative approach of several African countries. I also benefited from the general interest in DIAL for such issues as governance, democracy or historical determinants of development and from an impressive cumulative knowledge and experience of African countries.

This dissertation proposes new insights on the interactions between ethnic salience, social structures and political arrangements in Sub-Saharan African countries. Building on microeconomic data from large-sample household surveys, it investigates how the

economic environment impacts social mobility, ethnic identification and voting patterns. We try to emphasize how African social and economic structures are subject to multi-dimensional and evolutive cleavages, which determine the dynamics of change.

Chapter 1 was written jointly with Denis Cogneau. We provide the first assessment on the extent, features and determinants of intergenerational mobility between the farm and non-farm sectors in five African countries. The choice of countries is driven by the availability of data on the father's occupation and by the representativeness of the surveys at the national level. We use a set of nine surveys held between 1985 and 1994 in Cote d'Ivoire, Ghana, Guinea, Madagascar and Uganda. We provide a measure of the level of social mobility back in the past, by computing odds-ratios on different age cohorts and correcting for intra-generational mobility along the work career. The striking result at this point is the discrepancy between the three former French colonies in our sample and the two former British colonies. The five countries seem to have followed diverging paths from independence, and the intergenerational rigidity of Cote d'Ivoire and Guinea rose dramatically. Madagascar present an outstanding level of inequality of opportunities across time.

We then try to relate these differences in intergenerational mobility to the patterns of two other forms of mobility, the geographical mobility (migrations) and intergenerational educational mobility (the influence of the father's level of education on the son's). We show how these other forms of mobility are much more selective in former French colonies: the family background massively determines both the level of education and the possibility to migrate. This appears consistent with the results on occupational mobility and actually accounts for much of the differences we uncovered. But we also show that migration and a high level of education are less a pre-requisite for reaching non-farm jobs in former British colonies. The returns to education and the necessity for migration appear much lower.

We relate these features to the colonial policies implemented differently by the French and the British. We provide historical documentation on the fact that the transport infrastructures connecting rural and urban areas were significantly more developed in British

colonies in general, and that the schooling system was much more extended as well. An easier access to migration led to a different pattern of settlement and reduced the width of the rural-urban gap. A wider open access to education also enabled children from different origins to go to school, ending up in a higher equality of opportunity on the job market thereafter. This in-depth comparative approach makes it possible to conclude that the patterns of social mobility appear as a colonial legacy.

In Chapter 2, we cope with the topical question of the determinants of ethnic identification. While most of the studies dedicated to this issue investigate the political determinants of ethnic salience, we investigate the individual incentives to claim one's pride in ethnic belonging relative to the nation. By doing so, we seek to bridge the gap with the microeconomic literature that highlights the economic advantages of kinship networks and more generally of social capital. Such an analysis is made possible by the availability of recent wide-sample surveys that integrate subjective questions on democracy and governance. The set of surveys we use was held by DIAL in seven capitals of French-speaking West-African countries, and include more than 30.000 respondents.

Three main driving forces stand out, aside from the direct intergenerational transmission of values. First, we show that the level of education is the most robust factor that brings down ethnic salience at the individual level, whereas some other papers argued that the competition among the educated elite stimulates strategies based on ethnic group. Second, we show that this strategic use of kinship networks may be used by people who precisely do not belong to the elite but rather to the less privileged layers of the population: uneducated unemployed or informal workers who seek a new or better job, for instance. Ethnic identification is all the higher as the share of one's ethnic group that is in the right position to help the individual is high. Last, ethnic identification is significantly higher among people who were not born in the city of living. This underlines the role of ethnic groups to help new-comers get integrated in the city of settlement in a context of migration. Here again, the share of co-ethnics who are migrants and employed pushes ethnic identification up, showing how the need to overcome obstacles to integrate

the job market may lead to implement ethnic-based strategies.

This set of results leads us to formulate the assumption that ethnic identification may partly be interpreted as an investment in a specific kind of individual social capital. The less social capital people originally have - because of a poor education, or because of a radical drop of the intensity of social ties due to migration - and the more they need it - to escape unemployment or bad jobs - the more they will try to take advantage of their ethnic ties to climb the social ladder. In that sense, ethnicity appears as a substitute to the formal means of rise, and the initial deprivation of the latter fosters ethnic salience.

In Chapter 3, we ask the following question: is ethnicity the overwhelming determinant of the results of democratic polls in Africa, or are economic cleavages more critical? We investigate this question empirically on the 2004 presidential poll in Ghana. This country fulfils every pre-requisite for being a field of research on this topic: it may be considered as a "mature" democracy, having experienced a peaceful changeover of power, it is divided into several ethnic groups, and two main parties compete on the basis of both their natural ethnic support and the political preferences they embody. The material for this chapter was gathered during a mission in Accra dedicated to infiltrating and harassing bureaucracies for collecting a national survey and hard copies of Census reports and electoral data. We matched these different variables from several data sources at the district level.

We first analyze econometrically the determinants of the turnout rate and of the results obtained by the candidates in 2004. We more specifically test and compare the accuracy of two alternate models of voting, an ethnic model and a non-ethnic one that includes variables such as education, occupation or wealth. We find that the ethnic factor is a slightly better explaining factor for the structure of votes in Ghana, but does not rule out the significance of the non-ethnic model: the share of the formal sector and the level of education of districts determine their political alignment, in a way that is consistent with the political platforms represented by the candidates.

But when it comes to explaining the evolutions of votes between two presidential polls,

ethnic structures do not play any significant role, contrary to the common view that ethnic mobilization is the main driver in African elections. Comparing the accuracy of the ethnic and non-ethnic models suggests that changes in political affiliations mostly come from an evaluative vote made by citizens of each district on the ground of how much their district benefited from the incumbent's policy. The good results in poverty alleviation seems to have secured a higher support from poor people, while the raise in urban unemployment makes the urban districts vote more for the opposition.

These results provide a new picture on the dynamics of democracies un African countries. While the ethnic or regional structure of political supports is compelling, their changes does not appear to be driven by ethnic purposes. This result qualifies the view that ethnic mobilization drives the power structures in young African democracies. Since a changeover of political power occurred recently in Ghana, the analysis of the motives of the pivotal voter is crucial. Our results thus suggest that non-ethnic determinants ultimately drive the election outcomes.

Chapter 4 builds on the results of the previous chapters and on a critical review of recent literature to propose a change of perspective on African political economy. We argue that a massively dominant share of political science or economics papers focuses on the analysis of neopatrimonialism, because of the specificities of post-colonial state-building in Africa and of a limited knowledge of the complexity of economic and social structures. While this approach provided much insight on some widespread structural flaws of African states, it is unable to account for the noticeable differences that revealed during the post-colonial era. To understand this dynamics, it is necessary to identify the driving forces behind power arrangements and therefore to study the formation and evolution of socio-economic structures.

We first highlight that recent research on inequality revealed the existence of deep economic inequalities in African countries in general, with much variability between countries, which contradicts the common view of a relatively homogenous social fabric in Africa. We then argue that the microeconomic literature on social group formation pro-

vides solid foundations for understanding critical features such as the salience of ethnicity or the power structures endogenously set up in response to a given economic constraint. The capacity of the State to open the access to education, law or markets (especially the job market) appears critical to explain whether individuals refer to it or build alternative informal arrangements.

This approach of socio-economic structures allows to better understand how power structure emerge and to tackle issues that macro studies are unable to address convincingly, like the impact of social and economic heterogeneity. Socio-economic divisions have been shown to impact the capacity of any given group to aggregate individual preferences into a collective choice. The local patterns of political and economic inequalities also play a great role in the formation of elites and the way they interact to form political arrangements. These patterns may be relevant at the national level (as a result of the idiosyncratic trajectory of a country) or an infra-national level (as a product of specific group arrangements). We also highlight the role of education, which may be considered as a critical social attribute and may therefore be strategically spread out by the ruling elite according to its particular agenda. A given political economy is the product of competing groups with specific interests, whose interactions determine a distribution of power. Understanding these equilibrium effects also enables to understand their disruption, and thereby the dynamics of political structures.

This renewed perspective sheds light on the differences between Ghana and Côte d'Ivoire, which the structural post-colonial analysis of neopatrimonial systems was not able to reveal. The disparities of social structures and the very different levels of inequalities and social rigidity are a first major difference, Côte d'Ivoire being much more unequal in these two dimensions than Ghana. Although in both countries economic elites stem from the cocoa culture, the more cohesive organization of Ashanti in Ghana entailed a more open political field with an elite more divided between traditional chieftaincies and modern rulers. As a further determinant, the way French and British dealt with these traditional elites was quite different, the French setting up an integrative and centralized administration whereas the British favored power-sharing through indirect rule. The ex-

tension of education and the way it is symbolically and politically rewarded also appear as a strong determinant of the balance of power. The dynamics of Ghana and Côte d'Ivoire in the post-colonial period appear to result from the building and disruption of these quite different equilibria.

Chapter 1

Social Mobility and Colonial Legacy

This chapter[1] proposes the first comparative measurement of the extent of intergenerational mobility in five countries of Sub-Saharan Africa: Côte d'Ivoire, Ghana, Guinea (Guinée-Conakry), Madagascar and Uganda. It also studies the evolution of intergenerational mobility across time, with some consideration for *intra*-generational occupational mobility. This is made possible by the availability of large-sample surveys built upon a common methodology and providing information on the social origins of the interviewed adult individuals: parents' education and occupation, and region of birth. We use a set of nine surveys that were implemented during a period ranging from the mid-1980s to the mid-1990s.

The analytical methods used here relate to that of the groundbreaking Erikson and Goldthorpe (1992) comparative study and associated works. These works rarely go beyond the set of Western industrialized countries, or else mostly include former-socialist European ones. Low-income, developing or sub-tropical countries enter the comparative databases with unrepresentative surveys, which are often restricted to urban areas or specific regions (see, *e.g.*, Tyree, Semyonov, and Hodge (1979); Grusky and Hauser (1984); Ganzeboom, Liujkx, and Treiman (1989)). Apart from representativeness, comparability of occupational variables is also an issue (Goldthorpe 1985).

The availability of relevant and reliable data makes the first explanation for the scarcity

[1] This chapter was written jointly with Denis Cogneau.

of similar quantitative studies of social mobility in developing countries. Even today, only few large sample nationally representative surveys ask about the parental background of adult respondents. For the purpose of comparison among Latin American countries, Behrman, Gaviria, and Székely (2004) could only find four countries where this kind of data had been collected on a comparable basis[2]. In Latin America, Chile appears as an exception (Torche 2005) but is also the most industrialized country in this sub-continent. Asia does not seem much more documented, except recently for China (Cheng and Dai (1995); Wu and Treiman (2006)), and India (Kumar, Heath, and Heath (2002a); Kumar, Heath, and Heath (2002b)). As for Africa, only South Africa had yet been investigated in that dimension (Lam (1999); Louw, Berg, and Yu (2006)).

In this work, we focus on rural-urban dualism, both because of data constraints and analytical accuracy. Rural-urban segmentation is of outstanding importance in the context of African countries. The majority of the population still lives in rural areas and derives its income from agricultural activities, but internal migration flows towards towns are large and the urban sector developed rapidly in the course of the 20^{th} century. Rural-urban dualism was first intensified by colonial powers establishing European-like administrative structures and European firms promoting the development of a formal sector in urban areas. This made the mobility to non-agricultural jobs even more attractive. In the African context, leaving the agricultural occupations and entering the non-farm sector remains the major upward move. We thus chose to focus on this specific mobility; reproducing the seven-class categories commonly used in studies on industrialized countries would prove both difficult and largely irrelevant with the data at hand.

The five African countries under review here have certain characteristics in common: they are of average size, do not have large mineral resources and derive most of their trade income from agricultural exports. When computed over arable land, population density is very much similar across the five countries. The bulk of the labor force is still working in agriculture everywhere, although there is some variation between the most urbanized country, Côte d'Ivoire, and the most rural, Madagascar. The vast majority of agricultural

[2]The case of Brazil has been particularly investigated by Pastore (1982); Pastore and Silva (2000); Picanço (2004); Bourguignon, Ferreira, and Menéndez (2007); Dunn (2007); Cogneau and Gignoux (2008).

workers are small landowners or shareholders (see Table 1.9 in Appendix).

However, the five countries' colonial histories are quite different. Côte d'Ivoire, Guinea and Madagascar were colonized by the French while Ghana and Uganda were colonized by the British in the late 19^{th} century. Both colonial powers ruled these countries during more than half a century. The five countries then took different roads after independence around 1960 (see Table 1.10 in Appendix for a timeline).

The former French colonies displayed quite divergent trajectories. Under President Houphouët-Boigny Côte d'Ivoire established itself as the main partner of the former colonial power in Africa, adopted the regional common currency linked to the French Franc with a fixed rate (franc CFA) and developed a liberal export-oriented economy based on cocoa culture. Oppositely, Guinea broke with France in 1963 and President Sekou Toure introduced a long-lasting authoritarian and repressive socialist government. Madagascar displayed a succession of those two polities, the first President Tsiranana maintaining narrow relationships with France whereas from 1975 Didier Ratsiraka set up a radical socialist system soon to be mitigated to restore the relationships with international donors and implement macroeconomic reforms.

The two former British colonies also had distinct trajectories. In Ghana, a succession of military coups entailed power instability but did not threaten civil peace, while Uganda was the scene of violent episodes such as brutal repressions, terror on populations and war against Tanzania. Financial stabilization and economic adjustment were implemented in Ghana and Uganda from the mid-1980s. Tables 1.9, 1.10, 1.11 and 1.12 in Appendix provide a chronogram of political regimes, some demographic and economic indicators and occupational structures computed from the surveys.

Our main finding is that social mobility is more restricted in the three former French colonies than in the two former British colonies, whether we consider occupational or educational mobility, and inter- or intra-generational mobility. Intergenerational mobility between agriculture and other sectors is higher in the two former British colonies, Ghana and Uganda. This conclusion is maintained when correcting for potential bias arising from intra-generational mobility; in fact, mobility along the life cycle is also more fluid in

Ghana. When measured through the migration decisions or the diversification of activities, the 'social distance' between agricultural and non-agricultural occupations is shown to be more limited in our two former British colonies. When looking at education, intergenerational opportunities are also strikingly more restricted in former French colonies. Lastly, inequality of opportunity in both migration and education accounts for a great deal of the differences in intergenerational occupational mobility between former French and former British colonies, especially in the case of Western African countries (Côte d'Ivoire and Guinea vs. Ghana). We argue that the colonial legacy of spatial structures and of educational systems has very much to do with all these features.

The remainder of the paper is organized as follows. Section 1.1 presents the survey data, the variables of analysis and the main analytical tools. In section 1.2 we analyze intergenerational entry into and exit from agriculture and after having proposed a correction method for intra-generational mobility and life cycle effects, we compare the five countries across time. Section 1.3 delves into spatial and migration issues. Section 1.4 examines educational development and educational intergenerational mobility in the five countries over 40 years. Section 1.5 introduces education and migration as correlates of occupational mobility. Section 1.6 summarizes and concludes.

1.1 Data and analytical tools

We use national household surveys that were carried out between 1985 and 1994 in the five countries we study, covering large probability samples on a national level. The countries and periods in question are Côte d'Ivoire from 1985 to 1988, Ghana in 1987 and 1992, Guinea in 1994, Madagascar in 1993 and Uganda in 1992. The sample designs procedures are regionally stratified and two-stage. Within each strata, a first random draw of primary sampling units (PSUs, or survey clusters) is made among a list of localities or big towns sub-sectors established from the most recent national census. After enumeration of households within PSUs, a fixed number of household is then randomly drawn in each PSU. The resulting sample usually comes with a set of unequal weights attached to each

PSU.[3] Face-to-face interviews are conducted by trained staff. The Côte d'Ivoire, Ghana and Madagascar surveys are "integrated" Living Standard Measurement Surveys (LSMS) designed by the World Bank in the 1980s; the format of the two other for Guinea and Uganda is inspired from them. The Appendix table 1.12 gives the precise names, periods, sample sizes and response rates of these surveys.[4]

In the more recent period and in many countries in Africa, surveys with smaller questionnaires have since been preferred for reasons of cost and feasibility, and unfortunately no longer include information on parental background for adult interviewees. To our knowledge, the surveys that we selected are the only large sample nationally representative surveys in Africa that provide information on parental background for adult respondents.

They all provide a good deal of information about the main employment of the interviewed person. Homogenizing classifications however proves difficult. For this reason, we focus on entry and exit from the agricultural sector. Individual occupational mobility is partially observed in the surveys thanks to an "employment history" section, except in Uganda.[5] As for the occupation of fathers, the differences between the available items in each survey also drove us to retain only the distinction between farmers and non-farmers.

We also introduce education in the analysis and distinguish three levels: no education / primary level / middle or secondary level. Education of the father is also available but is not perfectly comparable between Côte d'Ivoire and the other countries, as the Côte d'Ivoire survey informs about the highest diploma when other surveys give the highest level attained. This slight difference will of course be taken into account in our comments on the educational dimension.

We restrict our analysis to adults between 20 and 69 years of age and cohorts born between 1930 and 1970. In some respect, the old age of these surveys constitutes an advantage as it makes it possible to go back to the colonial era by analyzing cohorts born

[3] The Ghana GLSS1 survey makes an exception in that respect, with its self-weighting sample (equal probability of selection for each household in the country).

[4] Documentation and more details can be found at the Website of the World Bank's Africa Household Survey Databank: http://www4.worldbank.org/afr/poverty/databank/default.cfm.

[5] This kind of data is not available either in the GLSS4 survey implemented in Ghana in 1998, even if information on father's occupation and education was still collected. Since we use the employment history to assess intra-generational mobility, we exclude 1998 Ghana from our set of surveys.

before the 1960s. We also focus on men, the analysis of intergenerational mobility of women being left for further research.

As it is now traditional in quantitative sociology, we compute odds-ratios from mobility tables crossing sons' and fathers' occupation or education and analyze them with the logit model. Odds-ratios make it possible to compare the strength of association between origin and destination across time and space, regardless of the fact that the weight of some destinations varies between countries or periods. More precisely, they express the relative probability for two individuals of different origins to reach a specific destination rather than another one. Let $i = 0, 1$ and $j = 0, 1$ index the two origins and the two destinations of a 2 rows and 2 columns mobility table; let n_{ij} be the number of individuals of origin $x = i$ and destination $y = j$, and $p_{ij} = p(y = j|x = i)$ the conditional probability of reaching destination j for origin i. The odds-ratio of this table is defined as:

$$OR = \frac{n_{11}/n_{10}}{n_{01}/n_{00}} = \frac{p_{11}/(1-p_{11})}{p_{01}/(1-p_{01})} = \frac{p(y=1|x=1)/[1-p(y=1|x=1)]}{p(y=1|x=0)/[1-p(y=1|x=0)]} \tag{1.1}$$

The logit model expresses the natural logarithm of odds-ratios as a linear function of more than one correlate:

$$\ln \frac{p(y=1|X)}{1-p(y=1|X)} = \alpha + \beta X \tag{1.2}$$

where y still indexes the occupational or educational destination. X is a vector of observed variables x (parental background, education, etc.). β is a vector of parameters. α is a constant that stands for the 'reference group' (all $x = 0$ within X), i.e. the denominator of equation 1.1 in the univariate (only one variable of origin x) and dichotomic ($x = 0$ or 1) case.

1.2 Mobility between agriculture and other occupations

This section deals with intergenerational entry into, and exit from, the agricultural sector.

1.2.1 A first measurement of intergenerational mobility

In order to measure what we call intergenerational dualism, we first construct (2,2) mobility tables crossing occupational origin (i.e. father being a farmer or not) and destination (i.e. son being a farmer or not). So as to observe the evolutions across time, we split our sample into a set of four decennial cohorts built upon the date of birth of individuals. Aggregated outflow tables are in Table 1.13 in Appendix. The odds-ratios for each of these cohorts are reported in Table 1.1 and graphically presented in Figure 1.1.

Birth cohort	1930-39	1940-49	1950-59	1960-69
Côte d'Ivoire	6.6	10.1	7.6	12.8
	[3.6;12.0]	[5.6;18.2]	[4.8;12.1]	[8.3;20.0]
Ghana	4.4	5.3	4.1	6.1
	[3.0;6.4]	[3.8;7.3]	[3.2;5.3]	[4.9;7.6]
Guinea	3.6	9.7	8.1	19.1
	[2.1;6.3]	[5.9;15.9]	[5.8;11.4]	[12.9;28.4]
Madagascar	23.1	15.4	21.2	16.7
	[11.3;47.5]	[9.0;26.4]	[14.2;31.8]	[12.3;22.7]
Uganda	2.6	4.6	4.2	4.2
	[1.7;4.2]	[3.4;6.3]	[3.3;5.4]	[3.5;5.0]

Coverage: Men ages 20-69 born between 1930 and 1970.
Reading: In Côte d'Ivoire, two men born in the 1930's whose fathers were respectively a farmer and a non-farmer are 6.6 times more likely to reproduce their father's position than to exchange them.
Note: Confidence intervals at 5% indicated between brackets.

Table 1.1: Intergenerational dualism across time: Odds-ratios

Table 1.1 and Figure 1.1 reveal noticeable differences between countries. In Madagascar, intergenerational dualism seems to have remained at very high levels throughout the colonial and post-colonial eras, with odds-ratios always above 15. The four remaining countries seem to share close starting points in the 1930-39 cohort. However, the two former British colonies, Ghana and Uganda, stand out with stable across time and relatively low odds-ratios: Whatever be the cohort considered, the son of a farmer and the son of a

non-farmer are "only" 3 to 6 times more likely to reproduce their fathers' positions than to change them.

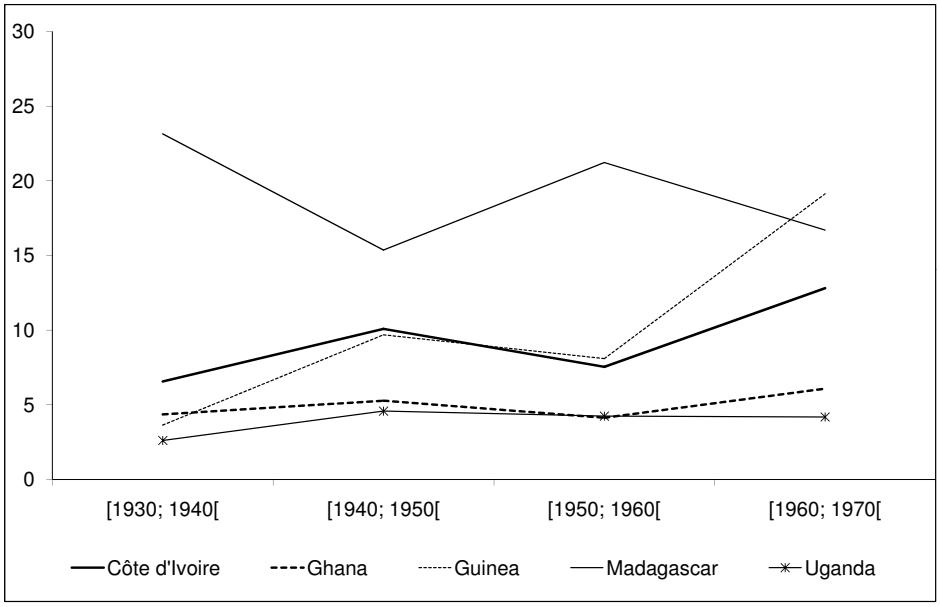


Figure 1.1: Intergenerational mobility (Odds-ratios) - not corrected for intragenerational mobility

In the third group of countries composed by the two Western former French colonies, Côte d'Ivoire and Guinea, intergenerational dualism seems to increase across time, bringing the odds-ratios of the 1950-59 cohorts to levels twice as high as in Ghana or Uganda, although the difference is statistically not very significant for Côte d'Ivoire because of sample size. In the last and youngest cohort, intergenerational dualism is again doubled in both countries and catches up with the level of Madagascar.

On the basis of a computation of the same odds-ratios for the whole sample of men ages 20-69, we can draw some simple comparisons with other developing or emerging countries from other continents. As Table 1.2 shows, Brazil, a country well-known for its record in inequality, and China, where labor migrations are still strictly regulated, share the same level of intergenerational dualism as Côte d'Ivoire and Guinea. Madagascar

stands in-between this latter group of countries and India, whose caste system ascribes individuals to their father's occupation; although less prominent, caste-like discriminations also prevail in Madagascar, at least among the Merina ethnic group.[6] In contrast, Uganda and Ghana stand out as much more fluid societies.

	Odds-ratio
Uganda 1992	4.2
Ghana 1988-92	4.8
Brazil 1996	8.0
China 1996	8.6
Côte d'Ivoire 1985-88	9.5
Guinea 1994	10.2
Madagascar 1993	16.5
India 1996	32.4

Coverage: Men ages 20-69, except for India: representative sample of male electorate.
Sources: For the five countries under review in this paper: computed from outflow tables of Table 1.13 in Appendix. For Brazil: authors' computation from PNAD 1996 survey (see also Cogneau and Gignoux (2008)). For China: authors' computation from Table 3 in Wu and Treiman (2006). For India: authors' computation from Tables 2 and 3 in Kumar, Heath, and Heath (2002a) and Kumar, Heath, and Heath (2002b).

Table 1.2: Out of Africa: The five countries compared with Brazil, China and India

1.2.2 Intra-generational mobility

Method

Two men of same social origin but of different ages cumulate two reasons for having reached different positions: one is the evolution of intergenerational mobility across time; the other is the individual's occupational mobility along his own career. The comparison we just presented does not take into account the fact that individuals are not observed at the same point of their lifetime. In the rural/urban dualistic framework we study here, this could yet play a role: a 20 years old man may be less likely to have reached a non-agricultural position than a 60 timer, if people tend to move to urban areas during their

[6] See Roubaud (2000) for a statistical analysis of the influence of caste on intergenerational mobility in the capital city of Antananarivo.

lives. Conversely, if men come back to land after having accumulated some capital in non-agricultural occupation, a young man may be more likely to be non-farmer than an older man.

Moreover, the weight of social origin may have different impacts on the life cycle. It may decrease with age if people emancipate from their social origins by getting older, in which case the observed mobility of younger cohorts would be biased downward relatively to the one of older cohorts. Conversely, if the social origin not only determines the starting point but also the set of opportunities all along the individuals' careers, divergence conditional to social origin is underestimated at younger ages. We therefore take into account intra-generational mobility so as to compare individuals as if they all had ended their work career, whatever be their age at the time of the survey.

In every country except Uganda (because of data limitation), we construct mobility matrixes crossing the current occupation of the respondent and his previous occupation. These mobility matrices are measured separately for each social origin (father farmer or not), and for different ages. To preserve the representativeness of sub-samples, we compute these matrices by decennial age groups.[7] If a complete work career lasts, say, 40 years, the total transition matrix (from the beginning up to the end of the career) is thus estimated as the product of four decennial matrices computed by age and social origin. We are then able to apply to any individual - whatever be his age and social origin- a residual intra-generational mobility and reconstruct his position at 'occupational maturity' (we discuss this latter concept further).

Note that we estimate the individuals' future occupational transitions on the ground of observed transitions in the older cohorts. Our method thus relies on the assumption that intra-generational mobility is stable across time for a given age and social origin. This might be considered a weaker assumption than that of a "neutral" intra-generational mobility, i.e. intra-generational mobility being independent of father's origin. We of

[7]The ten years ago occupation is derived from the answer to the following questions: "What job did you do before the one you have today?" and "For how long do you do your current occupation?" The occupation exerted ten years ago is taken as agricultural (resp. non-agricultural) if the respondent exerts his current occupation for more than ten years *and* this current occupation is agricultural (resp. non-agricultural), or if the respondent exerts his current occupation for less than ten years *and* the previous occupation is agricultural (resp. non-agricultural).

course acknowledge that intra-generational mobility could have changed during the 1990s and could still change in the future, end even differently so in each country.

Inactivity

As employment rates for each cohort vary from one country to another (see Table 1.11 in Appendix), we have to take inactivity into account to avoid any bias in the comparisons. We define an inactive individual as an adult who did not work in the last twelve months. Inactivity thus includes long-term unemployment and studies. This kind of bias might particularly affect the relative position of Côte d'Ivoire where inactivity rates are the highest, especially in the youngest cohort (born after 1960). Two simple counterfactual analyses (not shown) where inactive people are either recoded as farmers or as non-farmers indeed reveal the sensitivity of the odds-ratios of Côte d'Ivoire and Guinea to the treatment of inactivity.

Descriptive analysis (not shown) reveals that younger inactive in Côte d'Ivoire and Guinea are very significantly more educated than non-agricultural workers, with a large difference of more than three years of schooling between the two groups. It is well-known that the economic crisis of the 1980s has particularly hit the non-agricultural employment of young skilled men, mainly because hiring in the public sector has brutally stopped. Most of inactive men at young ages therefore either carried on their studies or were unemployed and queued for a job in town. In order to take them into account, we include inactivity as a possible origin status for the first cohort, and compute (3,2) matrixes describing the transition during the first decade of individuals' work careers.

As for older cohorts, inactive men are closer to the average population in terms of social origin and education, and they represent a more limited share of the sample. The selection bias due to retirement or to missing occupations is therefore rather limited.

Intra-generational mobility and life-cycle effects

As we explained above, our intra-generational matrices represent the probability for an individual of any decennial age group to reach a given position within a period of ten

years, and the first decennial matrix includes inactivity as a possible origin. Decennial matrixes are presented in Table 1.14 in Appendix.

Figure 1.2 focuses on the first (3,2) transition matrix and presents the probability to move from inactivity toward a non-agricultural occupation between 20-29 and 30-39 years old. The important rate of formerly inactive individuals who reach a non-agricultural occupation reflects the higher education of this group. This is all the more striking for farmers' sons who emancipate from their occupational background after an early period of inactivity (from 49% in Madagascar up to 81% in Côte d'Ivoire, Madagascar being here again an exception). As expected, inactivity in the youngest cohort frequently reflects ongoing studies or queuing for non-agricultural jobs and opens doors to intergenerational mobility.

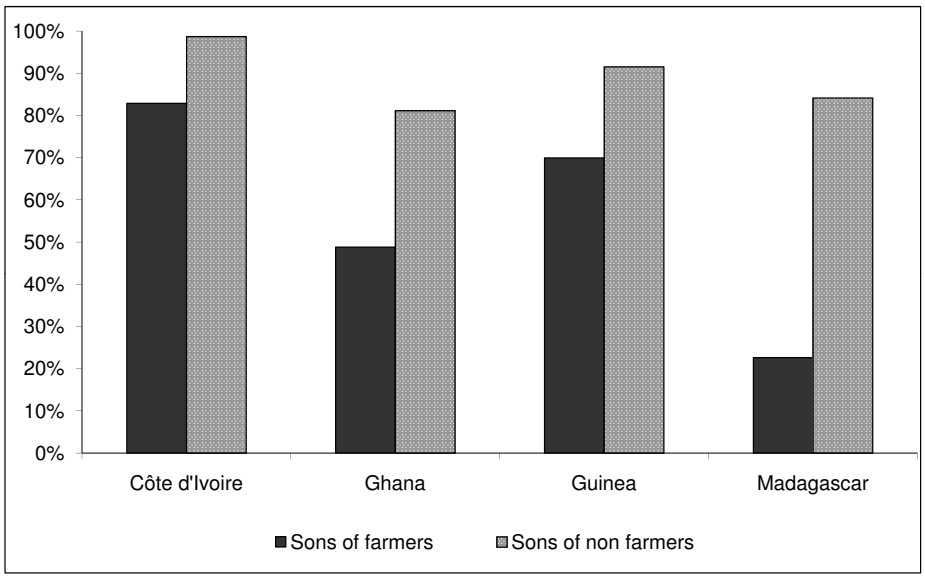


Figure 1.2: Probability of transition from inactivity to a non-agricultural occupation between ages 20-29 and 30-39

We now turn to transitions between sectors. The reconstructed probability for a farmer to switch to a non-agricultural occupation decreases over the life cycle.

When the father is himself a farmer (see Figure 1.3.a), this probability is very low all along the life cycle (less than 10%). When the father is not a farmer (see Figure 1.3.b), the probability is high at the beginning of the work career (up to 59% in Guinea), and decreases progressively until about zero. Young workers are thus the most likely to switch from an agricultural occupation to a non-agricultural occupation, but this opportunity strongly depends on the father's occupation. In Guinea and Côte d'Ivoire, the probability seems very high that a young farmer leaves agriculture early when his father himself is not a farmer, which increases social reproduction. In Ghana, the sons' trajectories are more similar across social origins. Intragenerational mobility appears less determined by the father's occupation than in the three former French colonies.

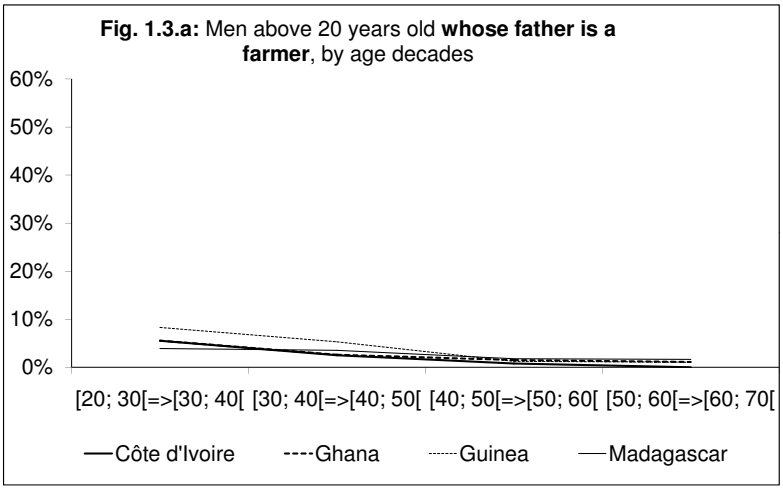
As for the reciprocal transitions toward agriculture, results show that they are not negligible at the beginning of the work career, but are the most likely at the very end (Figure 1.4). This might be caused by the need to go back to one's village to inherit land or to take care of one's goods and household. Having an agricultural background (i.e. having a father farmer) indeed increases the probability to come back to agriculture at old ages (compare Figures 1.4.a and 1.4.b).

However, sons of non farmers also have a fairly high probability of transition toward agriculture at the end of their lives (Figure 1.4.b). This move thus appears as a form of retirement: due to the weakness of pension systems, and because of the importance of the agricultural sector in the countries we study, individuals get back to the village of their family at the end of their lives not only to inherit but also to earn subsistence revenue from agricultural activities.

Since a significant share of our last age group (60-69) seems to retire, the sample size of this group is very limited, and there may be a bias arising from differential mortality according to social origin, we retain the 50-59 ages as the time of occupational maturity[8].

We then compute the product of three decennial matrixes and obtain the occupational transition matrix for the whole work career, i.e. between 20-29 and 50-59 year old. The inequality of career opportunities between individuals of different origins appears clearly

[8]The occupation of the 60 timers at this maturity age is directly observed ten years ago thanks to the surveys' employment history.



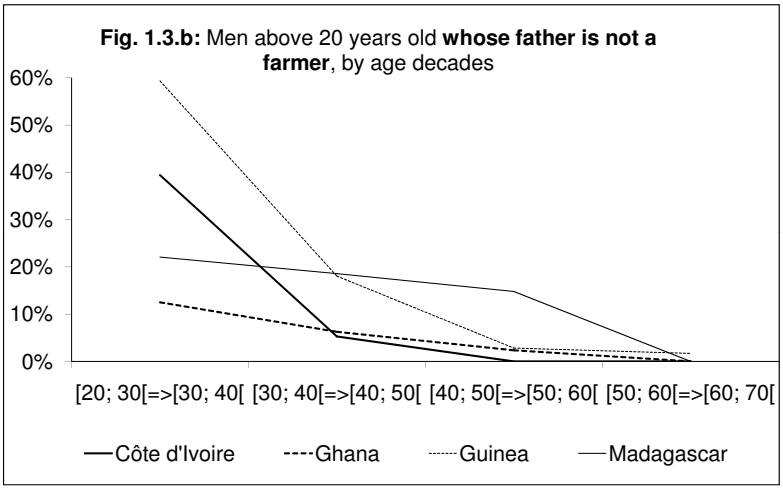
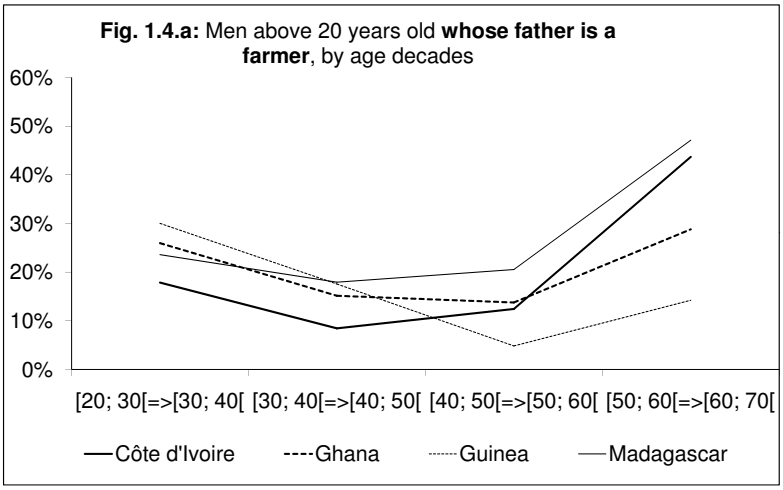


Figure 1.3: Probability of transition from agricultural to non-agricultural occupation

(Figures 1.5 and 1.6).

Ghana stands out as the country where the difference between origins is the smallest. The father's occupation is a much stronger determinant of individual trajectories in the three former French colonies.



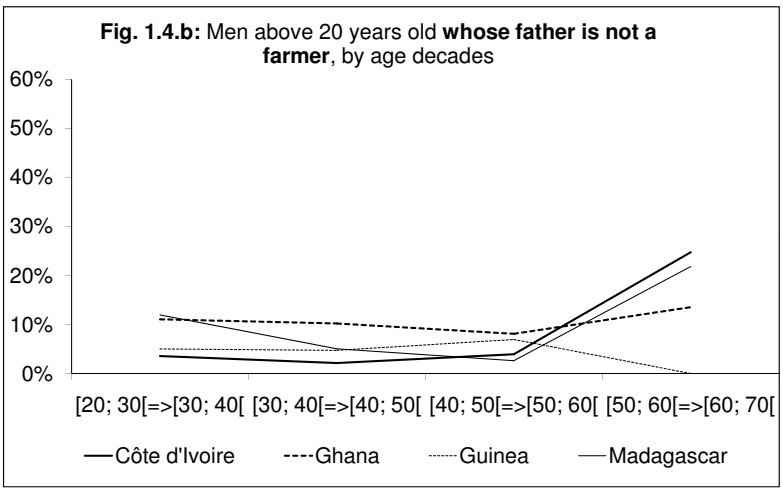


Figure 1.4: Probability of transition from non-agricultural to agricultural occupation

1.2.3 The impact of intra-generational mobility on intergenerational mobility

We are now able to correct our measures of intergenerational dualism by taking into account the impact of occupational transitions along the life cycle. We reconstruct the

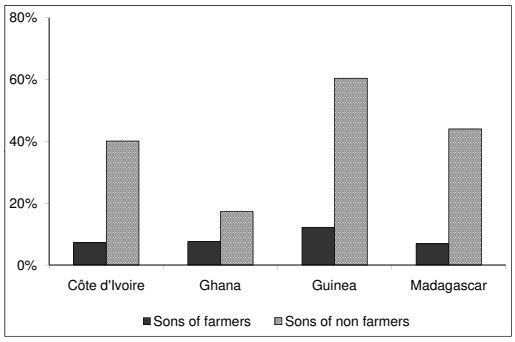


Figure 1.5: Probability of transition from an agricultural occupation to a non-agricultural occupation along the whole life cycle

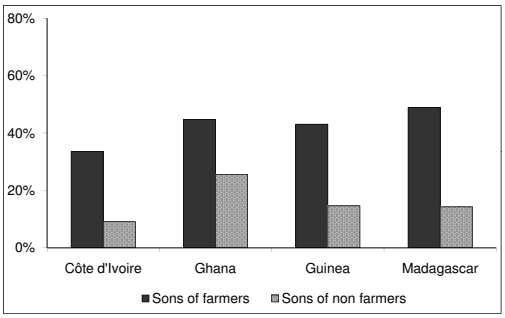


Figure 1.6: Probability of transition from a non-agricultural occupation to an agricultural occupation along the whole life cycle

occupational structure of every cohort as if it had reached the occupational maturity, and compute the same set of odds-ratios as the one presented in Table 1.1.

The ratios of uncorrected and corrected odds-ratios are most often close to 1 (see Table 1.3). On the whole, taking intra-generational mobility into account slightly lowers the estimation of intergenerational mobility in Côte d'Ivoire and Madagascar (i.e. increases odds-ratios), whereas it raises it in Guinea and Ghana. As expected, transitions from inactivity at the beginning of careers tend to increase mobility. The correction is the largest in Côte d'Ivoire, where it lowers the odds-ratio by 8% for the youngest cohort (result not shown). However, after taking into account the other elements of prospective occupational mobility, the same odds-ratio ends up 6% higher than its uncorrected counterpart (Table 1.3), confirming that individual trajectories are strongly influenced by social origins all along the life cycle in this country.

Figure 1.7 presents the corrected patterns of intergenerational mobility across time in the four countries, aside with Uganda which stays uncorrected due to data limitations. The intra-generational corrections reinforce the similarities between Côte d'Ivoire and Guinea, while clearly separating them from Madagascar. The gap between these countries and the two former British colonies is maintained.

The last two sections of this paper concentrate on these differences between countries

Birth cohort	1930-39	1940-49	1950-59	1960-69
Côte d'Ivoire	6.7	9.2	8.4	13.8
Correction factor	*1.0*	*0.9*	*1.1*	*1.1*
Ghana	4.6	4.9	3.7	5.4
	1.1	*0.9*	*0.9*	*0.9*
Guinea	3.7	8.3	6.2	12.4
	1.0	*0.9*	*0.8*	*0.7*
Madagascar	21.4	17.8	25.8	21.2
	0.9	*1.2*	*1.2*	*1.3*
Uganda	2.6	4.6	4.2	4.2
	-	-	-	-

Coverage: Men ages 20-69 born between 1930 and 1970.
Reading: In Côte d'Ivoire, two men born in the 1950's whose fathers were respectively a farmer and a non-farmer are 8.4 times more likely to reproduce their father's position than to exchange them. Once corrected for intra-generational mobility according to our procedure, the odds-ratio raises to 1.1 times the level of the uncorrected odds-ratio.

Table 1.3: Intergenerational dualism across time: The impact of intra-generational mobility

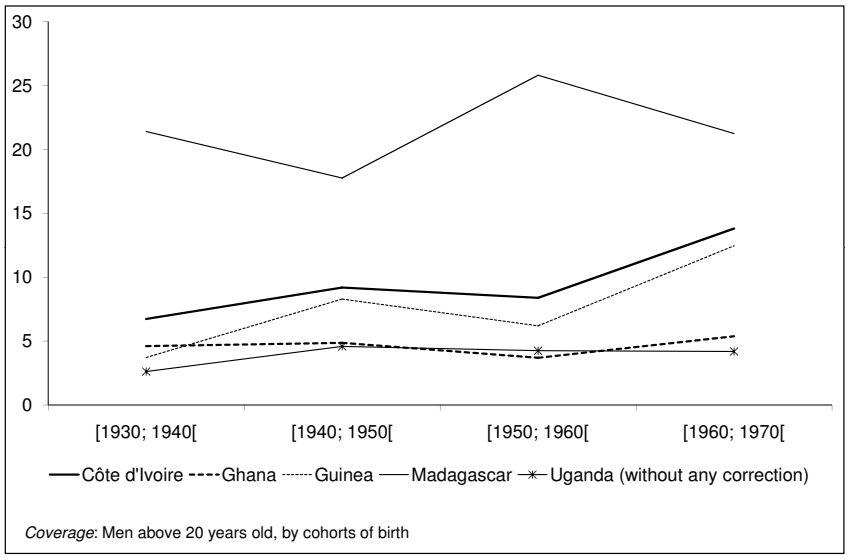


Figure 1.7: Intergenerational mobility (Odds-ratios) - corrected for intragenerational mobility

and relate them with education and migration issues, these two correlates bearing the marks of the colonial policies implemented differently by the French and the British. To carry out these analyses properly, the sample size imposes to leave aside the issue of the evolution across time of intergenerational dualism. We also focus on the oldest cohorts (born between 1930 and 1959) and disregard the youngest (1960-69) whose intergenerational mobility profiles are the most sensitive to life-cycle effects.

1.3 Migration and diversification of activities

Intergenerational entry into and exit from agriculture can be linked to migration flows between rural and urban areas on the one hand and to the diversification of occupations within localities on the other hand. The differences we observe in these latter features relate to the specificity of public investments that were made by the colonial powers and the economic institutions they established.

Table 1.4 gives the emigration rate of country residents outside their village or town of birth, among 1930-1959 cohorts. It reveals that Ghana is the country where internal emigration is the most frequent, followed by Côte d'Ivoire and Uganda. As the second row of Table 1.4 shows, internal emigration rates of Côte d'Ivoire natives, rather than residents[9] are lower than in Ghana and Uganda for cohorts born before 1950. Finally, in Guinea and Madagascar, migration is much less frequent than in the three other countries.

Is migration correlated to intergenerational dualism? The first column of Table 1.5 presents the estimation of one logit model per country, where the left-hand side variable takes the value of one when the individual is staying in his village or town of birth, and zero when the individual has emigrated somewhere else. On the right-hand side, along with a father farmer dummy, we additionally introduce decennial cohort dummies. Estimation results reveal that having a father farmer raises the odds of staying in the locality of birth in every country except Ghana. In the three former French colonies, a farmer's son is at least three times more likely to stay, while in Uganda this differential probability is 2.0,

[9] Côte d'Ivoire stands out as a land of international immigration. Among men born between 1930 and 1959 and living in Côte d'Ivoire, 20% were born in foreign countries, mostly Mali (5%) and Burkina-Faso (9%); in other countries this rate never goes above 3%.

Birth cohort	1930-39	1940-49	1950-59	All: 1930-59
Côte d'Ivoire (incl. foreign born)	43.9	56.5	64.0	55.8
Côte d'Ivoire born in the country	31.1	42.1	55.0	44.1
Ghana	54.5	61.2	53.3	56.2
Guinea	19.1	26.2	37.3	28.7
Madagascar	30.1	36.3	36.4	35.0
Uganda	50.3	48.7	47.1	48.3

Coverage: Men ages 20-69 born between 1930 and 1960.
Reading: Percentage of people dwelling in the village/town of birth. For Côte d'Ivoire, the second row corresponds to the migration rates computed over the population born in the country.

Table 1.4: Percentage of migrants outside the village or town of birth

Ghana showing no difference. Thus, internal migration is not only less frequent in former French colonies but it also more often selects non-farmer's sons.

The two other columns of Table 1.5 apply the same logit model to a dummy variable indicating whether the individual is working in agriculture, separately for migrants and non-migrants. The estimation reveals that a large share of between-country differences in intergenerational dualism must be attributed to non-migrants. Excepting Madagascar, the odds of becoming a farmer for a farmer's son relatively to a non farmer's son are similar throughout the countries, provided that he has left the village or town of birth, i.e. conditionally to having emigrated. Conversely, these odds are more contrasted between countries among non-migrants. Uganda displays a much higher level of intergenerational mobility among non-migrants. Ghana and Guinea come out as much similar from this point of view. Then comes Côte d'Ivoire, and Madagascar is again left far behind.

A double effect of migration reveals. First, a "selection" effect of migration separates our countries: farmers' sons less often leave their locality of origin in the three former French colonies. Second the "discriminating power" effect of migration is different in the countries under study: in Côte d'Ivoire and Madagascar, those who stay are more likely to reproduce their father's occupation, i.e. stay a farmer, than in Guinea and in the two former British colonies. The differences in intergenerational dualism between Ghana and Guinea seem to be essentially linked to the first effect, as, once migratory status is taken into account, the influence of having a father farmer is similar between the two countries.

	Having stayed in village/town of birth		Working in agriculture			
			Migrants		Non-migrants	
	Odds-ratio	s.e.	Odds-ratio	s.e.	Odds-ratio	s.e.
Father Farmer						
Côte d'Ivoire	3.3	0.5	5.7	1.8	12.4	3.4
Ghana	(1.2)	0.1	3.3	0.4	7.3	1.0
Guinea	4.0	0.5	(1.9)	0.9	7.8	1.7
Madagascar	3.4	0.5	9.3	2.4	37.6	10.1
Uganda	2.0	0.2	3.7	0.6	4.0	0.7
Born in Mali or Burkina-Faso						
Côte d'Ivoire	-		3.2	0.5	-	
N	13 852		7 279		6 573	
Log. Likelihood	-8 920		-4 113		-2 586	
Pseudo-R^2	0.07		0.17		0.15	
Tests Father Farmer odds-ratio equality (prob> χ^2):						
C. d'Iv. = Ghana	0.000		0.088		0.087	
C. d'Iv. = Uganda	0.013		0.194		0.001	
Guinea = Ghana	0.000		0.273		0.800	
Guinea = Uganda	0.000		0.195		0.016	

Coverage: Men ages 20-69 born between 1930 and 1960 in the country, whose occupation is known.
Notes: Logit models for having stayed in the place of birth (1^{st} column) or working in agriculture for a given migratory status (2^{nd} and 3^{rd}); models include decennial cohorts' dummy variables for each country (coefficients not shown). Unless noticed by a parenthesis ( ), all odds-ratios are significantly different from one at 5%.

Table 1.5: Sequential logit model for migration and occupation

This latter assessment will be confirmed in section 1.5.

In contrast, the differences between Côte d'Ivoire and Ghana seem to persist even when migration is controlled for. This latter point may be documented further by considering the diversification of activities. Table 1.15 in Appendix shows that more than two fifths of people in Ghana and Uganda whose main occupation is not agricultural also work in agriculture as a secondary job, whereas only a little more than one tenth do the same in Guinea and Côte d'Ivoire. Conversely, around one fifth of farmers also have a non-agricultural secondary job in Ghana, Guinea and Uganda, versus only one tenth in Côte d'Ivoire. This latter observation suggests that the borders between occupations are more open in Ghana and Uganda in comparison with Côte d'Ivoire. It is consistent with

the differences in the spatial polarization/diversification of activities that has just been observed among non-migrants. Under this new light, Madagascar still stands out as a special case: while the mixing of main and secondary jobs is as high as in Ghana and Uganda, the weight of father's occupation carries over for migrants and for non-migrants as well.

These different patterns of migration and diversification of activities may be traced back to the colonial legacy. First, it is documented that infrastructure investments were different in the French colonies and in the British colonies: In 1960, the British colonial power had built more kilometers of railways and roads in Sub-Saharan Africa (Herbst 2000, p.159-170). This may have reduced the cost attached to migration, making it more frequent and affordable to a wider range of people. This gap in the extension of road networks endures until recent times (see first row in Appendix Table 1.16). Second, the administrative centralization inspired by the French government system fostered the concentration of business, wealth, infrastructures in the largest cities. Consequently, the non-agricultural activities were more often situated in rural areas or small towns in the former British colonies and were linked to the urban market by denser road networks. Indeed, as shown again in Appendix Table 1.16 (second row), the share of the population of the largest city is much higher on average in former French colonies, while the urbanization rate is hardly different from former British colonies (third row). Among our five countries, according to the population censuses, the largest city share of population was 8% in 1985 Ghana (Accra), against respectively 17 and 15% in 1988 Côte d'Ivoire (Abidjan) and 1983 Guinea (Conakry).[10] French and British colonial powers thus shaped spatial structures differently through their investments in infrastructures and administrative organizations. Our results reveal the long-term impact on the patterns of geographical mobility and, in turn, on intergenerational mobility.

[10]The corresponding rates were 5% for 1992 Uganda (Kampala) and 9% for 1993 Madagascar (Antananarivo).

1.4 Educational mobility and intergenerational dualism

1.4.1 Colonial school policies and educational developments over time

Before introducing education into the analysis of intergenerational dualism, we examine here the educational development experience of each country and the intergenerational mobility matrices linking father's occupation and education and son's education.

Table 1.6 shows the Madagascar and Uganda early starts in primary schooling, due to the policies of Merina and Buganda kingdoms and in particular the openness to European missionaries. Yet this advantage does not give rise to a high proportion of individuals completing primary school and disappears completely at the secondary level when compared with Ghana. At the other extreme, Côte d'Ivoire and even more so, Guinea, are countries where primary education was reserved to a small minority during the 1930s. These features are in perfect keeping with the number of pupils recorded by historical statistics (Mitchell 2001). In fact, Madagascar makes an exception among French colonies: a continental overview confirms the British colonies' large advantage in terms of school extension before 1960 (Benavot and Riddle (1988); see also: Brown (2000); Bertocchi and Canova (2002)).

These differences relate closely to the colonial policies that were implemented by the French and the British. Historians consider that the French schooling system was less expanded for a variety of reasons (Gifford et al. 1971): teaching had to be performed in French, while British generally used vernacular languages in keeping with the Indirect Rule doctrine; as inspired by the schooling system of the French Third Republic, education was free of charge, which entailed the concentration of colonial expenditures on a limited number of schools; it also had to be secular, while British encouraged and subsidized Protestant missionary schools; overall, French colonial school policy was designed to provide excellent education to a small advanced elite rather than to educate masses (for a comparison between French and British colonial administrations and relationships to indigenous populations, see Firmin-Sellers (2000)).

Birth cohort	1930-39	1940-49	1950-59
% Never attended school (or never achieved any level with success)			
Côte d'Ivoire	81.2	62.5	39.3
Ghana	60.3	40.8	28.3
Guinea	94.1	84.7	61.4
Madagascar	48.5	33.5	23.3
Uganda	41.0	25.2	16.3
% Middle or secondary level			
Côte d'Ivoire	3.2	17.2	36.7
Ghana	32.1	49.9	63.1
Guinea	3.1	10.1	26.8
Madagascar	6.9	16.3	20.8
Uganda	9.4	24.2	26.4

Coverage: Men ages 20-69 born between 1930 and 1960.

Table 1.6: Educational developments across time in the five countries

The effects of these different colonial policies endured. The international databases show that the British advance on education and literacy has been maintained up to 2000, after forty years of continued educational expansion (see Appendix Table 1.16, fourth and fifth rows).[11] Table 1.6 is again in line with this point, as the countries' ranks are unchanged when comparing the youngest cohorts educated after independence with the oldest, educated during the 1940s. The main change comes from Côte d'Ivoire which got further and further from Guinea while catching up with the other countries. While being still behind in terms of access to school in the 1970s, Côte d'Ivoire had overrun Madagascar and Uganda at the middle ("collège" in the French-origin systems) and secondary levels. Besides, it seems that expansion of the secondary level has lagged behind in Uganda since independence in 1958.[12] Of course, any educational expansion does not necessarily translate into higher equality of opportunity in favor of unprivileged children whose parents

[11] However, they also reveal that this educational performance was not translated into a higher income per capita or a longer life expectancy (see two last rows of Table 1.16 in Appendix).

[12] The Ghanaian education system before 1987 offered much longer schooling than elsewhere based on the "6-4-5-2" format: six years in primary school, four in middle school, five years in secondary school and two pre-university years. Since primary school had no system of repeating a failed year, half of the individuals had at least completed six years of schooling. Most of the other half had never attended school, with only a small minority having left school at primary level. In Madagascar and Uganda, two-thirds of individuals ages 20 and over had successfully completed one year of primary education, but very few had completed all five (Madagascar, "5-4-3") or seven (Uganda, "7-4-2") years of this level.

are poor or uneducated (see, e.g. Goux and Maurin (1997), on the example of France; Cogneau and Gignoux (2008), on Brazil; Pasquier-Doumer (2004), on Peru). The effect of social origin must therefore be analyzed precisely.

1.4.2 Educational intergenerational mobility

The differences in school expansion between our two sets of countries prove to actually translate into a difference in intergenerational educational mobility. For our five countries, Table 1.7 presents the estimation of three logit models per country explaining respectively the probability of having never attended school (see top panel of Table 1.6), of having reached primary level only (conditionally to having attended school), and of having reached middle school or 'collège' level only (conditionally to having attained primary level; see bottom panel of Table 1.6). The estimated coefficients presented in Table 1.7 compare the probabilities of access to each level of education for two sons with different social origins as characterized by the father farmer dummy and a variable indicating whether the father ever attended school or not (or reached primary level in the third column).[13]

The first column of Table 1.7 shows that the intergenerational educational mobility for schooling alone is low in Côte d'Ivoire and in Guinea, in keeping with the low extension of primary schooling in these two countries. Both countries display higher odds-ratios than Uganda for the father farmer dummy as well as for the father school attendance dummy; when compared with Ghana, the father's education level carries the same weight but the father's occupation still has a (statistically significant) larger influence. Uganda, where primary education is the most widespread in the 1930-59 cohorts, displays the lowest discrimination in access to schooling. Ghana comes second and does not show more inequality of opportunity than Madagascar, even though primary schooling in this country was less frequent.[14]

[13]The accuracy of comparisons involving Côte d'Ivoire should be taken with caution when father's education is considered, as it is not measured like in the other countries, i.e. by the last degree obtained rather than by the higher level attained.

[14]The influence of father's education on school attendance seems lower in Madagascar (6.6) than in Ghana (9.9), but it is not statistically significant at 10%, while it is in the case of father's occupation

	Never attended school		Primary level only		Middle school level only	
	Odds-ratio	s.e.	Odds-ratio	s.e.	Odds-ratio	s.e.
Father farmer						
Côte d'Ivoire	2.6	0.5	2.1	0.4	1.9	0.4
Ghana	1.7	0.2	(0.9)	0.1	1.6	0.2
Guinea	3.8	0.5	2.2	0.5	1.7	0.4
Madagascar	9.1	3.6	6.5	1.1	(1.5)	0.4
Uganda	1.8	0.3	2.5	0.3	1.8	0.4
Father never reached:			Primary level		Middle school level	
Côte d'Ivoire*	10.6	4.7	3.2	1.1	(1.9)	0.8
Ghana	9.9	1.9	2.9	0.6	2.2	0.3
Guinea	9.5	2.9	(2.0)	0.8	(2.3)	1.2
Madagascar	6.6	1.1	3.4	0.7	3.3	0.8
Uganda	4.5	0.7	2.6	0.3	(0.9)	0.3
Born in Mali or B.-Faso						
Côte d'Ivoire	3.9	0.7	3.0	1.0	(1.2)	0.4
N	14 650		8 524		4 651	
Log. Likelihood	-7 562		-4 315		-2 503	
Pseudo-R^2	0.25		0.27		0.14	

Coverage: Men born between 1930 and 1960.
Notes: Logit models include decennial cohorts' dummy variables for each country (coefficients not shown).
Unless noticed by a parenthesis ( ), all odds-ratios are significantly different from one at 5%.
* 2 first columns: father never obtained primary level certificate (CEP); last column: father never obtained 'collège' level certificate (BEPC).

Table 1.7: Intergenerational barriers in schooling attainments

The second and third series of odds-ratios establishes that, in the case whereby some sort of schooling was received, Madagascar presents the most discriminating educational heritage inequalities. The influence of these inequalities carries through to both middle school and secondary school. In the other two former French colonies, where schooling is less developed, the majority of the inequality of opportunity for education is concentrated in initial schooling factors. Lastly, the education systems in the two former British colonies are clearly less selective than the education system in former French colonies, at all levels of schooling. This latter result is strikingly in line with both our previous results regarding occupational intergenerational mobility and the different schooling institutions set up by

(9.1 vs. 1.7). Other results not shown here about the younger cohorts (1960-69) suggest that equality of opportunity had even dramatically improved in Ghana, while staying at a very high level in Madagascar. This evolution has put Ghana at the level of Uganda. From that standpoint, the two former British colonies were showing the most advanced level of "democratisation" of access to school in the 1970s.

the two colonial powers.[15]

1.5 Education and migration as correlates of intergenerational dualism

This last section confronts our main results regarding intergenerational dualism with migration behaviors and educational developments that have just been examined. Table 1.8 presents the estimation results of three models per country, explaining the probability of working in agriculture as main occupation. In the left part of the table (Model I), the "father farmer" dummy is introduced alone, in the middle part (Model II) the migration variable introduced in section 1.3 is added; lastly, the right part (Model III) also adds the individual's education studied in section 1.4.

Model I purely reproduces the "uncorrected" occupational odds-ratios described in section 1.2 with two differences: cohorts born before 1960 are now aggregated into a single one, and youngest cohorts are withdrawn. Results and tests shown in the bottom panel of Table 1.8 plainly confirm the countries' rankings obtained above.

Model II significantly improves Model I in terms of likelihood, by introducing the individual's migratory status as an additional correlate for working in agriculture. Côte d'Ivoire and especially Guinea stand out as countries where emigration is largely a prerequisite for the access to non-agricultural jobs. This latter result is in line with both countries' spatial polarization and occupational rigidity that have been already noticed in section 1.3. Migration alone does not help very much in explaining intergenerational dualism differences between countries, as the ranking of countries remains the same, except in the case of Ghana and Guinea who no longer appear as significantly different.

When the impact of father being a farmer on education is cancelled out in Model III, the odds-ratio corresponding to the father farmer dummy is significantly diminished in every case. As revealed by the tests in the bottom panel, Côte d'Ivoire and Guinea

[15] This ranking of countries in terms of educational intergenerational mobility is maintained when an ordered logit model is estimated in place of the three sequential logit models of Table 1.7, as adviced by Cameron and Heckman (1998).

	Model I		Model II		Model III	
	Odds-ratio	s.e.	Odds-ratio	s.e.	Odds-ratio	s.e.
Father farmer						
Côte d'Ivoire	7.9	1.4	8.3	2.0	5.2	1.3
Ghana	4.4	0.4	4.7	0.5	3.8	0.4
Guinea	6.8	1.2	6.3	1.4	4.5	1.1
Madagascar	19.9	3.6	18.6	3.9	8.6	2.0
Uganda	4.1	0.5	3.8	0.5	2.5	0.3
Stayed in town/village of birth						
Côte d'Ivoire			30.7	4.1	27.7	4.2
Ghana			3.0	0.2	2.9	0.2
Guinea			55.7	12.0	54.8	11.8
Madagascar			5.8	0.9	3.8	0.6
Uganda			2.3	0.2	2.0	0.2
Born in Mali or Burkina-Faso						
Côte d'Ivoire			3.2	0.5	1.8	0.3
Never reached primary level						
Côte d'Ivoire					50.2	24.5
Ghana					13.3	2.4
Guinea					19.0	6.2
Madagascar					51.4	19.4
Uganda					49.0	16.7
Primary level only						
Côte d'Ivoire					18.2	8.9
Ghana					12.9	2.8
Guinea					7.1	2.6
Madagascar					17.8	6.0
Uganda					27.9	9.0
Middle school level only						
Côte d'Ivoire					5.8	3.0
Ghana					5.1	0.9
Guinea					3.7	1.6
Madagascar					4.7	1.8
Uganda					7.2	2.4
N			13 852			
Log. Likelihood	-7 948		-6 573		-5 898	
Pseudo-R^2	0.12		0.27		0.35	
Tests of Father Farmer odds-ratio equality (prob> χ^2):						
C. d'Iv. = Ghana	0.004		0.026		0.261	
C. d'Iv. = Uganda	0.003		0.003		0.010	
C. d'Iv. = Madagascar	0.000		0.012		0.136	
Guinea = Ghana	0.029		0.236		0.533	
Guinea = Madagascar	0.000		0.000		0.050	
Guinea = Uganda	0.018		0.043		0.030	

Coverage: Men ages 20-29 born between 1930 and 1960 and employed.
Notes: Logit models for working in agriculture; models include decennial cohorts' dummy variables for each country (coefficients not shown).
Unless noticed by a parenthesis ( ), all odds-ratios are significantly different from one at 5%.

Table 1.8: Intergenerational dualism, migration and education

end up not being different from Ghana, while Uganda still stands in a lower position. At the other extreme of the spectrum, Madagascar still holds its first rank in terms of intergenerational reproduction, although not significantly so when compared with Côte d'Ivoire. As expected, the influence of education on occupational selection is large.

In sum, comparing our five countries highlights a double effect of education, similar to the one we pointed about migration: in Ghana, education is both less selective (of social origin) and less discriminating (of social destination). The lower level of selectivity, due to a more widespread and evenly distributed schooling system (see above), accounts for most of the difference between Ghana and Guinea. When turning to the comparison between Ghana and Côte d'Ivoire, part of the explanation is the same; however, a large remaining part must be attributed to differences in the importance of education for accessing non-agricultural occupations, which is smaller in Ghana than in Côte d'Ivoire. Other studies revealed that the monetary returns to education follow the same pattern when these two countries are compared (Schultz 1999).

Section 1.4 showed that countries where intergenerational occupational dualism is the most pronounced also exhibit lower levels of intergenerational educational mobility. In that sense, the uneven distribution of education contributes to the explanation of intergenerational dualism. However, the discriminating power (or returns) of education can be also different between countries, if only for explaining entry into and exits from agriculture. It combines with inequality of opportunity in access to school.[16]

These stylized facts constitute an operative pattern to account for a large share of between country differences. In comparison with the neighboring Ghana, Côte d'Ivoire can hence be depicted as a country where the social distance between occupations is maximal, whether it is measured by the spatial mixing of activities or by the education level attached to each job. However, the relatively high levels of internal migration and of post-colonial educational development compensate for these handicaps. Conversely, in Guinea, low migration rates and educational underdevelopment make satisfactory explanations for the

[16]Education accounts for almost all of the between countries differences in terms of access to white collar occupations: once education is introduced, the remaining effects of social origin appear very little on the propensity to reach a non-manual wage job. This latter result is not shown but available upon request from the authors.

high level of intergenerational dualism. In Ghana, both spatial distance and educational distance are minimal and combine with high migration rates and widespread post-primary education.

As for the two extremes in the spectrum of intergenerational dualism, Madagascar and Uganda, these explanations in terms of spatial distance and educational distance are only partial. Long-term history and political developments may complete the picture. In Madagascar, the persistence of caste-like distinctions probably makes part of the explanation for the outstanding level of intergenerational reproduction. In Uganda, the political violence which has particularly affected this country since the end of 1960s might have contributed to its record level of intergenerational mobility, through forced downward mobility, migration or even premature deaths.

1.6 Conclusion

This paper sets down a first comparative measurement of the features and of the evolution across time of the intergenerational mobility of men in five countries of Sub-Saharan Africa. It focuses on intergenerational entry into and exit from agriculture, which is most important in countries where more than half of the population still today works in farms. Life cycle effects that determine intra-generational entry and exit flows are also considered.

The comparison establishes a large divide between two groups of countries. The two former British colonies, Ghana and Uganda, stand out by far with the lowest degree of intergenerational dualism and educational reproduction, which has strong consequences in terms of distributive justice. The social rigidity of the three former French colonies goes together with high cross-sectional inequalities in welfare, and translates in inequality of opportunity for income and living standards.[17]

The correlates we highlight with other forms of mobility, whether geographical or educational, provide a set of explanations for the levels of intergenerational mobility and appear to bear the marks of the colonial legacy. In the two former British colonies, both

[17] Appendix Table 1.9 indeed suggests that former French colonies have a more unequal income distribution. About inequality of opportunity for income, see also Cogneau and Mesplé-Somps (2008).

spatial and educational mobility are less selective and have less sorting power, which also means that the returns to education on the labor market are more limited. In contrast, in the three former French Western colonies, Côte d'Ivoire, Guinea and Madagascar, the opportunity structure of the society seems much less opened in all respects: migration and educational mobility appear as pre-requisites for the access to non-agricultural jobs, while being reserved to a selected minority. Madagascar cumulates this rigidity with specific social structures that originate in long-term history and make intergenerational mobility even lower.

Alternative explanations for these between-country differences are not easy to find. Differences in initial development give no immediate clue: centralized pre-colonial kingdoms have ruled parts of Ghana and Uganda, but also Madagascar, and population density is roughly the same in all countries, when measured over arable land. Differences in modernization and economic development give no clue either: Côte d'Ivoire and Ghana are the most developed countries. Differences in political regimes hardly help as well: Guinea has been the most socialist country and Côte d'Ivoire the most economically liberal.

Colonial policies are thus a key to understand the different social structures in African countries. On one side, like all British colonies on average, Ghana and Uganda have benefited from higher educational investments during the colonial period and a denser transport network. They also have inherited a more decentralized State structure and perhaps a more competitive political field, even at the expense of post-colonial political stability. On the other side, francophone States' policies have set high levels of income dualism and/or monetary returns to education, following the interests of a small educated urban class. Intergenerational mobility in contemporary Africa still reflects these contrasted colonial policies.

1.7 Appendix

	1988 **Côte d'Ivoire**	**1987** **Ghana**	**1994** **Guinea**	**1993** **Madagascar**	**1992** **Uganda**
Population (millions)	11.8	14.2	7.3	13.1	19.0
Population density (inhabitants per hectare of arable land)	4.9	5.7	8.9	4.7	3.8
GDP per capita (international $)	1 611	1 007	514	709	574
Gini index (consumption per capita)	0.37 / 0.43	0.34 / 0.38	0.55	0.49	0.39

Source: World Development Indicators 2006 for population and population density; Maddison (2003) for GDP per capita in Purchasing Power Parity; UNU/WIDER - UNDP (2000), World Income Inequality Database Version 1.0: http://wider.unu.edu/wiid/wwwwiid.htm for Gini Index of consumption per capita: in this collection of income distribution indicators, two sources may give two different Gini indexes for the same country and period.

Table 1.9: Development indicators

	1960	1970	1980	1990
Côte Ivoire (60)	Liberal (P)			
Ghana (57)	Social.(A)	Lib.(P)	Military(A)	Military (P)
Guinea (58)	Socialism (A)			Military (P)
Madagascar (60)	Liberal (P)		Socialism (A)	
Uganda (62)	Socialism (A)	Military (A)	Instability	

Reading: Côte d'Ivoire never experienced socialism. It only experienced (P=Pro-western) liberalism. Guinea experienced (A=Anti-western) socialism until the mid-eighties and the death of Sekou Toure. The number between parentheses is the date of independence: Madagascar became independent in 1960.

Table 1.10: Political regimes during the post-independence eras

Birth cohort	1930-39	1940-49	1950-59	1960-69*
% not employed				
Côte d'Ivoire	6.0	2.3	8.7	24.3
Ghana	6.3	2.5	2.5	12.4
Guinea	10.0	2.9	4.0	15.0
Madagascar	5.1	1.6	0.8	4.9
Uganda	5.2	2.5	1.6	8.9
% in agriculture (among employed)				
Côte d'Ivoire	74.4	56.1	44.8	53.8
Ghana	66.2	54.4	55.0	55.0
Guinea	79.3	65.5	55.0	55.0
Madagascar	85.1	73.1	71.3	79.7
Uganda	81.0	69.9	66.9	66.6

Coverage: Men ages 20-69 born between 1930 and 1970.
*: This last cohort is restricted to men ages 25-28, for the samples to be more comparable between the surveys that were implemented at different dates.

Table 1.11: Occupational structures for each country and cohort

Country	Name of the survey	Period	Men ages 20-69 born between 1930 and 1970	Non-response rate (%)
Côte d'Ivoire	Enquête permanente auprès des ménages (EPAM) Côte d'Ivoire Living Standards Surveys (CILSS)	Feb.85-Apr.89[(a)]	4 803	7.8[(b)]
Ghana	Ghana Living Standards Survey, rounds 1 and 3 (GLSS1 and GLSS3)[(c)]	Sep.87-Jul.88 Sep.91-Sep.92	2 556 3 010	5.0
Guinea	Enquête intégrale sur les conditions de vie des ménages (avec modules budget et consommation) (EIBC)	Jan.94-Feb.95	4 454	< 1.0
Madagascar	Enquête permanente auprès des ménages (EPM)	Apr.93-Apr.94	3 704	< 1.0
Uganda	National Integrated Household Survey (NHIS)	Mar.92-Mar.93	7 176	< 1.0

(a): The four surveys approximately cover the whole period. In the first three years, half of the sample has been interviewed again the following year (panel data). For panelized households, only the most recent information was kept, so that the final stacked sample contains around 800 households for each year of the 1985-87 period and 1 600 for 1988-89.
(b): The 1985 figure is the only one available in the documentation.
(c): The two surveys were stacked to obtain a sample of 5566 individuals.

Table 1.12: Surveys

Côte d'Ivoire

Father's occupation	Son's occupation: Agricultural	Non-Agricultural	Total
Agricultural	2064	1171	3234
	63.8	36.2	100.0
	96.3	73.3	86.5
Non-Agricultural	79	426	505
	15.6	84.4	100.0
	3.7	26.7	13.5
Total	2143	1596	3739
	57.3	42.7	100.0
	100.0	100.0	100.0

Madagascar

Father's occupation	Son's occupation: Agricultural	Non-Agricultural	Total
Agricultural	2500	408	2908
	86.0	14.0	100.0
	94.0	47.4	82.6
Non-Agricultural	161	452	613
	26.2	73.8	100.0
	6.0	52.6	17.4
Total	2661	860	3521
	75.6	24.4	100.0
	100.0	100.0	100.0

Ghana

Father's occupation	Son's occupation: Agricultural	Non-Agricultural	Total
Agricultural	2566	1178	3744
	68.5	31.5	100.0
	85.6	55.9	73.3
Non-Agricultural	431	931	1362
	31.6	68.4	100.0
	14.4	44.1	26.7
Total	2997	2109	5106
	58.7	41.3	100.0
	100.0	100.0	100.0

Uganda

Father's occupation	Son's occupation: Agricultural	Non-Agricultural	Total
Agricultural	4016	1335	5351
	75.1	24.9	100.0
	87.2	61.8	79.1
Non-Agricultural	591	824	1415
	41.8	58.2	100.0
	12.8	38.2	20.9
Total	4607	2159	6766
	68.1	31.9	100.0
	100.0	100.0	100.0

Guinea

Father's occupation	Son's occupation: Agricultural	Non-Agricultural	Total
Agricultural	2158	865	3023
	71.4	28.6	100.0
	93.8	61.2	81.4
Non-Agricultural	143	548	691
	20.7	79.3	100.0
	6.2	38.8	18.6
Total	2301	1413	3714
	62.0	38.1	100.0
	100.0	100.0	100.0

Coverage: Men ages 20-69 born between 1930 and 1970 and employed.

Table 1.13: Outflow tables of intergenerational occupational mobility

Côte d'Ivoire

[20-30[=> [30-40[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	95%	5%	61%	39%
NA	18%	82%	4%	96%
In	17%	83%	1%	99%

[30-40[=> [40-50[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	98%	2%	95%	5%
NA	8%	92%	2%	98%

[40-50[=> [50-60[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	99%	1%	100%	0%
NA	12%	88%	4%	96%

[50-60[=> [60-70[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	100%	0%	100%	0%
NA	44%	56%	25%	75%

Ghana

[20-30[=> [30-40[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	94%	6%	88%	13%
NA	26%	74%	11%	89%
In	51%	49%	19%	81%

[30-40[=> [40-50[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	97%	3%	94%	6%
NA	15%	85%	10%	90%

[40-50[=> [50-60[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	99%	2%	98%	2%
NA	14%	86%	8%	92%

[50-60[=> [60-70[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	99%	1%	100%	0%
NA	29%	71%	14%	86%

Guinea

[20-30[=> [30-40[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	92%	8%	41%	59%
NA	30%	70%	5%	95%
In	30%	70%	8%	92%

[30-40[=> [40-50[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	95%	5%	82%	18%
NA	18%	82%	5%	95%

[40-50[=> [50-60[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	99%	1%	97%	3%
NA	5%	95%	7%	93%

[50-60[=> [60-70[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	99%	1%	98%	2%
NA	14%	86%	0%	100%

Madagascar

[20-30[=> [30-40[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	96%	4%	78%	22%
NA	24%	76%	12%	88%
In	77%	23%	16%	84%

[30-40[=> [40-50[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	96%	4%	81%	19%
NA	18%	82%	5%	95%

[40-50[=> [50-60[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	98%	2%	85%	15%
NA	21%	79%	3%	97%

[50-60[=> [60-70[

	Father A		Father NA	
	A	**NA**	**A**	**NA**
A	98%	2%	100%	0%
NA	47%	53%	22%	78%

Coverage: Men ages 20-69 born between 1930 and 1970.

Table 1.14: Reconstructed tables of intragenerational occupational mobility

Côte d'Ivoire

	Farm	Non-Farm	No sec.	Total
Farm	3.3	9.6	87.1	100.0
Non-Farm	11.4	1.7	86.9	100.0

Ghana

	Farm	Non-Farm	No sec.	Total
Farm	3.6	22.8	73.6	100.0
Non-Farm	42.8	4.8	52.4	100.0

Guinea

	Farm	Non-Farm	No sec.	Total
Farm	10.6	24.3	65.2	100.0
Non-Farm	12.9	5.9	81.1	100.0

Madagascar

	Farm	Non-Farm	No sec.	Total
Farm	45.7	16.0	38.3	100.0
Non-Farm	36.5	11.0	52.5	100.0

Uganda

	Farm	Non-Farm	No sec.	Total
Farm	18.7	18.7	62.6	100.0
Non-Farm	39.6	7.2	53.2	100.0

Coverage: Men ages 20-69 born between 1930 and 1960 and employed.
Reading: Main occupation is in rows, secondary occupation in columns (No Sec. = none): % having a farm or non farm secondary occupation.

Table 1.15: Secondary occupations

	Former British	Former French	Test for equality of means:
	mean	mean	$Pr(\|T\| > \|t\|)$
Road Density 1990 (km/sq.km)	0.119	0.057	0.011
Largest city in pop. circa 1990 (%)	8.7	15.9	0.043
Urbanization rate 1990 (%)	26.4	33.6	0.154
Mean years of schooling circa 2000	5.1	3.0	0.009
Literacy rate circa 2000 (%)	64.4	45.6	0.020
GNI per capita PPP 1990	918	1,208	0.377
Life expectancy at birth 1990	50.1	50.4	0.887

Coverage: 26 countries of mainland Africa plus Madagascar, excluding Northern and Southern Africa. 11 Former British colonies: Gambia, Ghana, Kenya, Malawi, Nigeria, Sierra Leone, Sudan, Tanzania, Uganda, Zambia, Zimbabwe; 15 former French colonies: Benin, Burkina-Faso, Cameroon, Central African Republic, Chad, Congo, Cote d'Ivoire, Gabon, Guinea, Mauritania, Madagascar, Mali, Niger, Senegal, Togo.
Road density: Total road network in km divided by total land area in squared km, in 1990 (except Uganda: 1985); World Development Indicators (World Bank 2006): data from International Road Federation (IRF).
Largest city in pop.: Share of population of the largest city in total population; data from countries' population censuses (http://www.citypopulation.de).
Urbanization rate: Share of population in urban areas; World Development Indicators (World Bank 2006).
Mean years of schooling: World Development Report 2006, Table A4 p.284 (World Bank 2005); World Bank staff estimates based on survey data circa 2000. Data for Congo and Mauritania is missing.
Literacy rate: World Development Report 2006, Table 1 p.292 (World Bank 2005), estimates from population census or survey data for years 1998-2004; for Burkina-Faso and Guinea: World Development Indicators (World Bank 2006), estimates from UNESCO for the year 2004. Data for Gambia and Gabon is missing.
GNI per capita PPP: Gross National Income per capita in Purchasing Power Parity, in 1990; World Development Indicators (World Bank 2006); from World Bank staff International Comparison Program database.
Life expectancy at birth: World Development Indicators (World Bank 2006), in 1990; World Bank staff estimates from various sources.

Table 1.16: Former British and former French colonies in Africa: mean differences on a few indicators

Chapter 2

Individual Determinants of Ethnic Identification

The understanding of what an ethnic group is and what ethnic identification means evolved a lot in the last fifty years. The conceptual shift was initiated by anthropologists in the 1960s, but only impacted economic works very recently.

In the 1950s, anthropologists were seeking to define and identify ethnic groups, conceived as essential, unchanging core entities. This required to find out their most critical and distinctive features, and led to attempts to establish robust taxonomies on that basis (see for example the works by Nadel (1951), Murdock (1957) or Naroll (1964)). This range of works led to the production of *Human Relations Area Files*, and *Ethnographical Atlas*. The most famous of them, *Atlas Narodov Mira* (1964), made in the Soviet Union, constitutes the basic material for the computation of the widely used ethno-linguistic fractionalization (ELF) indicator.

This essentialist approach was yet to be rapidly questioned. In the 1960s, anthropological field works strongly suggested that ethnic lines are much evolutive and that their salience varies along with political, social or economic determinants. On the basis of his works on the Kachins in Burma, Leach (1964) went as far as denouncing ethnic classifications as "tabulated nonsense". Barth (1969) proposed a groundbreaking theory on the boundaries of ethnic groups which underlined the subjective dimension of ethnic iden-

tification and the importance of interpenetration and interdependency of ethnic groups. These works do not deny the existence and importance of ethnic groups. But they show how evolutive and socially constructed they may be. These theories were even reinforced by various political demands for recognition throughout the world (Glazer and Moynihan 1963), which highlighted how the reference to ethnic membership may vary across time.

Indeed, contrary to the predictions of evolutionist theories that they would disappear in the modern world, ethnic groups appeared to provide benefits to their members even in these changing contexts. In a famous article, Bates (1974) claims that ethnic groups would persist "because of their capacity to extract goods and services from the modern sector and thereby satisfy the demands of their members for the components of modernity". The competition generated by modernity is an incentive to form and maintain strong ethnic ties. These positions undoubtedly took the lead (Bentley 1987), and the key question became: what makes ethnicity be mobilized by individuals at a given time in a given place, rather than any other form of identification? The present paper stands in such a framework.

Because of measurement problem, economists stayed out of this consequential evolution, and kept on tackling the role of ethnicity through the lens of indicators based on ethnic classifications. In the 1990s, a wide literature emerged around the effects of ethnic diversity on development and growth, presenting fractionalization as one of the main reasons for social unrest, political instability or economic underdevelopment. The founding milestone is the article by Easterly and Levine (1997), which depicts the "African growth tragedy" as a consequence of the high level of ethnic heterogeneity. The vast majority of papers that followed use variously sophisticated fractionalization indicators (see for example Bossert, D'Ambrosio, and La Ferrara (2006), Montalvo and Reynal-Querol (2005) or Esteban and Ray (1994)), taking fractionalization as an unvarying exogenous characteristic of a society and disregarding the variability of the *salience* of ethnic cleavages across time and space. Data availability of course explains why economists used these indicators rather than direct measures of ethnic salience. Until recently, no other measurement could be used than those based on classifications, as the subjective and evolutive dimensions of

ethnicity are much more complicated to capture quantitatively.

The poor adequacy of such *objective* measures is all the more striking as these studies consider the *subjectiveness* of individuals as the driving factor for the weak social cohesion. Indeed, because it impacts the individuals' more or less intense feeling of trust (Alesina and La Ferrara 2000a) and of membership to the community, heterogeneity is said to harm the quality of public policies (Alesina, Baqir, and Easterly 1999), the social and political stability (Easterly 2001), the quality of governance (Easterly, Ritzen, and Woolcock 2006), the level of investment (Montalvo and Reynal-Querol 2005) or infrastructures (Alesina et al. 2003), the prevalence of corruption (Olken 2006) etc. Fractionalization would lower the degree of empathy or trust that prevails in the society and therefore weaken the collective claim as well as the ability to define common goals or set up authority and solidarity mechanisms necessary to the implementation of public policies.

A recent series of works fortunately began to fill this gap. First, some papers focused on restricted areas to better disentangle the interactions between politics and ethnic salience. They showed convincingly how local politics could determine ethnic salience (Miguel 2004) (Posner 2004b) and how heterogeneity entails specific local equilibria (Miguel and Gugerty 2004) (Banerjee and Somanathan 2007).

As a second important improvement, the lack of appropriate measures was recently filled by a set of surveys - most of them realized in the frame of the Afrobarometer project - which include some data on subjective identification and on the salience of ethnicity in the political field. In this paper, we use an original set of surveys designed to analyze the informal sector in seven West-African main cities. These household surveys include "classical" information such as education, living conditions, health etc., but also several subjective questions on politics, governance or poverty. Among them is a question on the individual's ethnic identification, which made our study possible. We will come back to these data in section 2.1.

With this new material, it is now possible to seek what determines the relevance of ethnic boundaries and the strength of ethnic ties.

To the best of our knowledge, the political competition is the only explanatory di-

mension that has been investigated so far (Eifert, Miguel, and Posner 2007) (Norris and Mattes 2003). This approach focuses on the role of elites which may manipulate or at least exploit the feelings of ethnic loyalty and rivalry to achieve their goals (Posner 2006). It concurs with a variety of political science studies dedicated to the relationships between ethnicity and politics (Brass 1976) (Salamone 1985). In this top-down setting, the elites' quest for power appears as the driving force that fosters unity and mobilization of an ethnic group. This kind of studies also includes the attempts to draw classifications of "politically accurate ethnic groups" (see for example (Posner 2004a) or (Chandra 2005)) on the basis of a huge effort to compile information and evidence on the level of ethnic salience. The focus is put on the *collective* determinants of the mobilization of an ethnic group. Although we test some of these results in this paper (see Appendix 5), it is not our main axis.

We rather focus here on *individual* incentives or determinants of ethnic identification. We must explicit here the conception of the nature of ethnic groups that underpins and legitimates such an investigation.

On the one hand, ethnic group is strongly ascriptive. Even if some constructivist ethnological studies sometimes underline how some ethnic groups were divided, unified or even created from scratch for political purposes (Amselle and M'Bokolo 1985), we believe it is not the most common case. Ethnic groups and families may rather be seen as two aspects of the same reality - kinship - at different scales. In Africa, ethnic groups are very often structured by a common origin - mythic or not -, lineage patterns, rules of transmission and sophisticated genealogical structures. The *griots* (traditional singers and storytellers) carry out the function of genealogists, perpetuate the memory of extended families and contribute to cement ethnic groups by keeping alive the consciousness of common membership. An ethnic group may well be viewed as a set of embedded familial structures, and ethnic ties are best thought about in terms of kinship. It is thus sensible to assume that each individual is assigned to a given ethnic group at birth.

But even if individuals know which is their ethnic group, ethnicity may be either mobilized or neglected voluntarily by the individual. This is the property of what some

anthropologists called the duality of ethnicity (Van den Berghe 1976): it is both primordial to a certain extent - ethnic ties are innate, carry a duty of solidarity and reciprocity (Geertz 1963) and often have a sacred dimension (Shils 1957) - and it is however one of the many possible dimensions of identity that an individual can put forward. Fearon (1999) defined identity as the specific way an individual positions himself in the multiple social stratifications at a given moment. Identity may then evolve according to the individual's interest or need (Fearon 2002), and more or less involve ethnicity. Ethnic identification may thus be subject to rational choices by individuals.

Building on such a definition of ethnic identity, the relevant question becomes: what makes ethnicity be a facet of identity worth mobilizing by individuals? The microeconomics of social networks may provide many useful insights here. Social proximity - due to common ethnicity or to any other common characteristic - was shown to bring a lot to individuals in some specific social and economic contexts (Arrow 1972): solutions to agency problems in the enforceability of trade contracts (Greif 1993), formation of mutual insurance networks (Fafchamps 1992), intergenerational transmission of property (La Ferrara 2007), financial decisions (Karlan 2007) or integration on the job market (Granovetter 1974). Ethnicity may be a powerful feature to build such social networks. As Habyarimana et al. (2006) have shown recently on the ground of experimental methods, ethnicity may be used rationally as a "social focal point" that allows individuals to solve coordination problems, even if common membership did not create pre-existing social rules (Habyarimana et al. 2007a). This provides individuals a strong rationale for deciding to take advantage of the ethnic membership.

In this paper we investigate the individual conditions in which people tend to refer to their ethnic group[1]. After having presented the data in section 2.1, we first propose a general estimation of the individual determinants of ethnic identification (section 2.2). We show the impact of education and migration, as well as the intergenerational transmission of values. Our first results on the impact of the job market lead us to investigate that dimension further, which we do in section 2.3. When individuals are willing to experience

[1]We also examined some political factors that previous literature showed as also playing a role. The results are provided in Appendix 5

occupational mobility, they identify to their ethnic group if its insertion on the job market may help them reach a better job. We suggest in section 2.4 that these effects depend much on the fact that individuals have an initial deprivation of social capital, which makes ethnicity appear as a substitute. Section 2.5 concludes.

2.1 Data

In this paper we use a set of seven "1-2-3" surveys that were carried out by DIAL, AFRISTAT and the National Institutes of Statistics in the main cities of seven West-African countries: Cotonou (Benin), Ouagadougou (Burkina Faso), Abidjan (Côte d'Ivoire), Bamako (Mali), Niamey (Niger), Dakar (Senegal) and Lome (Togo). These surveys are identical and therefore strictly comparable. They were carried on in the early 2000s on large samples representative of the urban population.

The surveys all include the following question: *"which group (or community) are you the most proud to belong to?"*. Two answers are possible: the ethnic group or the nation. The survey in Dakar is the only one which includes religion as a third possible answer. This may not be mixed up with ethnicity, all the more as 92% of the sample in Dakar declares being Muslim. We thus considered that religious identification may more accurately be aggregated to national identification. This leads to quite homogeneous rates of ethnic identification in the seven main cities (Figure 2.1).

The way this question is formulated makes the answer disconnected from the arbitrary classifications that were used before. When he answers the question, the respondent may think of any ethnic group or sub-group as his reference group. The survey thus does not impose individuals an ethnic identity that may be inappropriate, but leaves the door open to their own interpretation of which ethnic group they belong to.

We then include a range of variables that describe the individual's situation in terms of education, occupation and migration status, along with classical demographical information. To study the alternative between national identification and ethnic identification, it makes sense to restrict the sample to adults - individuals older than 18 - who have the nationality of the country considered. Our final sample includes 30,042 individuals older

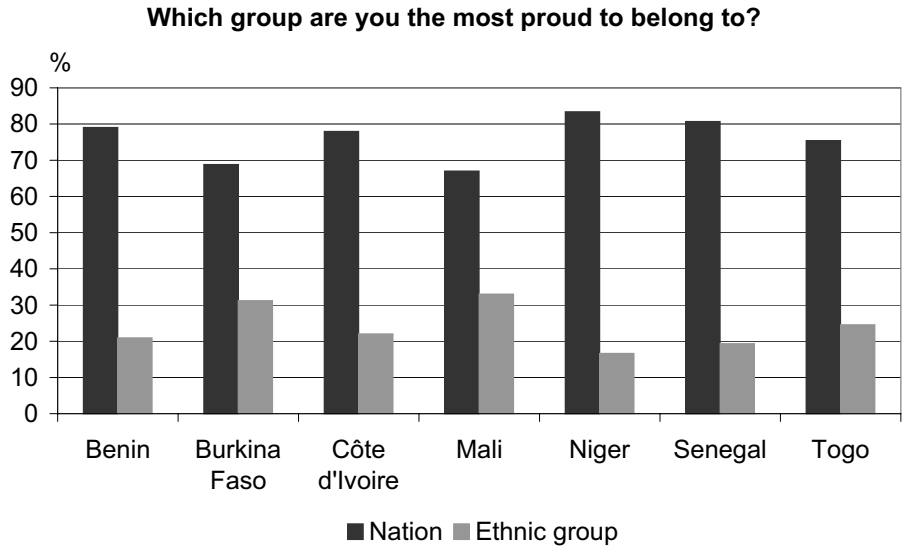


Figure 2.1: Frequency of ethnic identification in the main cities of seven countries

than 18. Descriptive statistics are provided in Table 2.1.

2.2 A first estimation of ethnic identification

We regress the binary variable "to be more proud of one's ethnic group" on the set of individual characteristics presented above. Our method is similar to the one used by Eifert, Miguel, and Posner (2007)[2]. We use Logit estimations. Results are displayed in Table 2.2.

[2]The authors use the recently published Afrobarometer surveys on twelve mainly English-speaking East- or Southern African countries, and focus on the effect of the proximity of an election. They find it to be a determinant of ethnic salience at the individual level. They also find that ethnic identification is a positive function of the degree of competition that individuals experience in their quest for protected jobs.

	Benin	Burkina Faso	Côte d'Ivoire	Mali	Niger	Senegal	Togo	Total
Demographical background								
Father farmer (%)	36.2	52.2	47.8	37.2	47.7	28.2	40.7	**40.7**
Female (%)	51.6	45.1	49.3	48.8	50.8	55.6	46.3	**50.8**
Age	34.5	35.2	31.9	35.2	35.0	35.4	35.5	**34.0**
Size of the household	5.8	7.1	6.8	7.9	8.0	9.9	4.7	**7.5**
Migration								
Born in the same place (%)	50.4	43.6	32.6	48.1	43.0	60.9	39.0	**47.63**
Migrant from an urban area (%)	29.4	43.8	58.7	35.0	31.5	28.5	46.4	**35.81**
Migrant from a rural area (%)	20.2	12.6	9.1	16.9	25.5	10.7	14.6	**16.56**
Education								
Never attended school (%)	21.5	42.1	21.5	48.0	43.4	35.2	17.5	**30.5**
At least attended primary school (%)	30.2	22.8	25.1	15.3	19.9	33.4	32.2	**26.1**
At least attended secondary school (%)	36.6	28.1	39.4	30.1	27.9	25.3	43.4	**33.4**
At least attended post-secondary school (%)	11.6	6.9	14.0	6.6	8.7	6.2	6.8	**10.0**
Occupation								
Inactive excl. students (%)	11.9	12.2	9.7	17.7	22.9	22.3	8.8	**15.1**
Student (%)	11.2	6.2	10.4	8.2	7.9	6.4	4.8	**8.7**
Unemployed (%)	5.8	13.4	15.6	9.9	16.0	15.9	9.7	**13.4**
Formal private sector (%)	7.9	7.4	14.4	8.2	6.6	8.8	8.3	**10.3**
Informal private sector (%)	56.0	49.6	43.8	48.1	36.1	41.7	60.9	**45.6**
Civil servant (%)	7.1	9.6	6.1	7.5	10.1	4.6	7.3	**6.6**
Observations	6,028	1,642	3,752	4,399	6,050	6,668	1,503	**30,042**

Table 2.1: Descriptive statistics

2.2.1 The impact of education, migration and position on the job market

We first examine the effect of demographical or origin variables. Females appear to identify more to their ethnic group. This result holds when we add other observable characteristics, meaning that it is not driven by the fact that being a woman is associated with some specific characteristics on education, migration, integration on the job market etc. Age appears to play a significant negative role. This is robust to such changes as introducing age in a quadratic function, introducing a discrete variable of age classes or dropping the education variables that could interact with the effect of age in a context where schooling rapidly increases over generations in Africa. The effect of age may surprise: older people show a lower propensity to ethnic identification, although they are often thought to be more attached to traditional values while younger people are seen as vectors of modernity.

	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.04***	0.04***	0.02***	0.03***	0.03***	0.02***
	(0.04)	(0.04)	(0.05)	(0.05)	(0.05)	(0.04)
Age	-0.00**	-0.00***	-0.00***	-0.00***	-0.00***	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Father farmer	0.05***	0.03***	0.02*	0.02*	0.02*	
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	
Size of the household	-0.00**	-0.00	-0.00**	-0.00*	-0.00	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Migrant from a rural area		0.03**	0.02*	0.02	0.02**	0.03***
		(0.07)	(0.07)	(0.07)	(0.07)	(0.06)
Migrant from an urban area		0.04***	0.04***	0.04***	0.04***	0.04***
		(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Attended primary school			-0.03***	-0.03***	-0.02**	-0.04***
			(0.06)	(0.06)	(0.06)	(0.05)
Attended middle or secondary school			-0.06***	-0.06***	-0.06***	-0.07***
			(0.06)	(0.06)	(0.06)	(0.05)
Attended post-secondary school			-0.09***	-0.09***	-0.08***	-0.09***
			(0.10)	(0.10)	(0.10)	(0.09)
Inactive				0.01	0.02	0.01
				(0.11)	(0.12)	(0.10)
Student				0.02	0.02	0.02
				(0.13)	(0.13)	(0.11)
Unemployed				0.04*	0.04*	0.04**
				(0.12)	(0.12)	(0.10)
Private informal sector				0.04**	0.04*	0.03*
				(0.10)	(0.10)	(0.09)
Private formal sector				0.04*	0.04*	0.03*
				(0.12)	(0.12)	(0.10)
Country fixed effects	no	no	no	no	yes	no
Observations	21596	20789	20733	20733	20733	27503
Log-likelihood	-11685.62	-11252.04	-11165.39	-11158.26	-11049.93	-14650.52

Logit estimations, with marginal effect estimates (at mean values for the explanatory variables). Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Omitted migration status: "born in the city". Omitted education level: "never attended school". Omitted occupation: "civil servant".

Table 2.2: A first estimation of the individual determinants of ethnic identification

The effect of the size of household also contradicts the view that there is a link between demographical transition and the loss of traditional values like ethnicity. Living in a more numerous household lowers the probability to refer to one's ethnicity, although the result does not seem very robust across specifications and is no more significant when country fixed effects are added to the regression. We will come back to these surprising results on age and the size of households in section 2.4, after having investigated the existence of an active identification. We will see how they may be interpreted as revealing the fact that ethnic identification is a resource of social capital for those who are deprived of it.

Having a father farmer (when the respondent is 15 years old) increases the probability to feel proud of one's ethnic group by 5% when this variable is introduced along with demographical indicators only, but the magnitude and significance of the direct effect are much more limited after controlling for the level of education. There may be a transmission of specific, more ethnic-oriented values to people with farming origin, but the main effect seems to be the intergenerational rigidity in schooling opportunities. We have shown that having a father farmer sharply decreases the probability to reach a high level of education in Africa (Bossuroy and Cogneau 2008). There may be both a direct and indirect effect here, and the fact that the significance and magnitude of the direct effect sharply decreases when other variables are added suggests that the indirect effect is important.

We then examine the impact of the migration status. Three categories may be constructed from the results of the survey: people born in the main city, people born in an other urban area (excluding the main city) and people born in a rural area. Table 2.1 shows that natives represent about a half of the population of the capitals, while urban migrants represent between 30 and 50% of the rest. Migrants from rural areas are the most numerous in Niger, where they represent more than one inhabitant of Niamey out of four. Being a migrant, wherever from, appears as a strong determinant for salience of ethnicity. A first explanation may be that for cultural reasons, people born in the main city have a different set of values and feel more proud of their nation. We could expect that this is an effect of living in open, cosmopolitan cities as opposed to remote hamlets. But this explanation is weakened by the fact that being a migrant from an urban area is as good a predictor of ethnic pride as being a migrant from a rural area. This result could be due to the fact that we control for the father being a farmer, but it holds even when we do not control for this effect (column 6). An other more convincing explanation may thus be that being a migrant entails a specific attitude to ethnic pride, ethnic identification being mobilized as (or reflecting) a strategy to get inserted in the society. Section 2.3 will provide evidence on this by analyzing the impact of ethnic groups' insertion on the urban job market, with a specific emphasis on the migrants' behavior.

Education stands out as a very robust and significant determinant of ethnic identifica-

tion, with the highest magnitude: whatever the specification of the model, being educated has a strong negative effect on the propensity to refer to the ethnic group. All education modalities included in the regression have significant negative impacts as compared to the omitted variable "having never attended school" (which concerns between 17.5% of the population in Lome, Togo, and 48.0% in Bamako, Mali). This finding is robust to shifts in the definition of education levels. Including the continuous variable *"number of school years"* instead of education classes also confirms the robustness of this result. Furthermore, the deterrent effect increases with the level attained: absolute values of marginal coefficient estimates increase. When all other parameters are controlled for (column 5), having attended primary school lowers the probability to refer to the ethnic group by 2%, having attended secondary level lowers it by 6% and post-secondary education (a level reached by less than 10% of the sample) by more than 8%. There may first be a direct effect of education on values and references. Education provides the knowledge and open-mindedness that allows people to refer more to their nation, and interactions with people of different backgrounds are frequent during education years, which may decrease the sense of ethnicity. But a high level of education also makes it less necessary to rely on ethnic solidarity to reach one's objectives, typically find a good job. We will discuss this effect in the following sections.

Including the individual's occupation status (column 4) reveals that the lower the level of integration on the job market, the higher the level of ethnic identification. With the most stable and protected occupational status - civil servant - taken as a reference, every modality appears to determine positively and significantly the level of ethnic identification. Maybe we only capture the fact that civil servants have a certain *ethos* that makes them more prone to refer to the nation for which they work on a daily basis. But it is striking that being out of the job market (either student or any other kind of inactive status) does not have any significantly impact on ethnic identification when compared to being a civil servant. Inactivity is specific in that it is a situation where low competition prevails, since individuals are not (or no more) competing in the job market. Competition does hold among students, but being successful in the studies is not the same as being integrated

on the job market: in principle, interpersonal connections and social networks are less necessary. So it may be that the level of precariousness that individuals experience on the job market determines their degree of ethnic identification, because of the will to experience an upward occupational mobility and the efficiency of strategies based on ethnic networks. The insertion of the ethnic group itself should therefore be examined, which we do in the next sections. Interestingly -and consistently-, introducing a revenue variable does not help to explain the salience of ethnicity (results not shown). The status is the driver.

The strategic dimension of ethnic identification for occupational mobility is tough to identify, since the effect is endogenous by nature: being in a precarious situation may lead people to strategically mobilize their ethnic membership, which in turn is supposed to improve their situation. However, one should note that this bias would cause the effects to be underestimated and not overestimated: since ethnic identification reduces the probability of, say, unemployment, the impact of unemployment on the propensity to refer to one's ethnic group should be even more important than what we observe. We thus may consider that the job market status appears to have an influence, which we suspect to be related to the will of upward mobility, and we will investigate this strategic identification in greater details in section 2.3. But we first turn to the role of the family.

2.2.2 The role of the familial background

We now try to investigate further the role of family background. In our initial estimation, we already introduced an occupation variable for the father, namely whether he was farmer at the time the respondent was 15 years old. The estimations show that having a father farmer increases the probability to refer to the ethnic group, more as a by-product of a low educational mobility than as the result of a specific intergenerational transmission of values. The surveys also include a question on the level of education of the father, but we have to take this variable with caution since the fairly low amount of missing values is very unequally distributed across the countries, with 43% in Senegal, 8% in Mali and not a single missing value in Burkina Faso or Côte d'Ivoire. The way it was coded is thus

unclear and may reveal differences between countries.

Aside with these two variables, in the cases where the father and his child are members of the same household, we can also use the father's own identification group. The problem is of course that having the father and the child in the same household - remember that we restrict our sample to people above 18 years old - does not occur very frequently, so that the number of missing values is very high. Besides, the observations selected by the availability of this variable are far from random for it requires that the child still lives at his father's place or that the father is hosted by one of his children. We are likely to select younger people who have not yet founded their own household, individuals whose retired parents cannot provide for their own subsistence, or more traditional families (as compared to the urban standard) in which several generations live together. But keeping these caveats in mind, it may be interesting to focus on younger people of our sample and have a look on how identification passes over from generation to generation.

We thus re-run our baseline regression on a sub-sample of young people (18 to 25 years old). Results are shown in Table 2.3. The sample size is smaller when the father's identification is introduced (Columns 1 and 4) because it requires that the father and the child live in the same household.

The father's identification to his ethnic group appears as a strong predictor of the son's identification. The magnitude is high: if the father identifies to his ethnic group, the probability that the child does the same is raised by more than 30%. The two other origin variables have the expected signs and are significant. The level of education of the father plays a role even when the school attainment of the child is controlled for. When we combine the explanatory factors, the direct effect of value transmission overshadows the other ones. This is not too surprising, value transmission being a more direct channel and the composite product of many unobservable determinants (education by the family, socialization schemes, parental influence...).

To have a clear view on the individual determinants of ethnic identification, we may control for this background family effect. We introduce household fixed effects in the regression, so as to highlight the determinants of individual's deviations from the household

	(1)	(2)	(3)	(4)
Father proud of his ethnic group	0.31***			0.32***
	(0.12)			(0.14)
Father farmer		0.04**		0.04
		(0.10)		(0.22)
Father uneducated			0.04**	0.02
			(0.08)	(0.16)
Female	0.01	0.03*	0.02	0.02
	(0.12)	(0.08)	(0.08)	(0.14)
Age	-0.01**	-0.01**	-0.01***	-0.01**
	(0.03)	(0.02)	(0.02)	(0.03)
Size of the household	-0.00	-0.00*	-0.00*	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Migrant from a rural area	-0.01	0.00	0.02	-0.01
	(0.30)	(0.13)	(0.12)	(0.34)
Migrant from an urban area	0.06**	0.04**	0.05***	0.09***
	(0.17)	(0.10)	(0.09)	(0.20)
Attended primary school	-0.02	-0.03	-0.03*	-0.01
	(0.18)	(0.11)	(0.10)	(0.21)
Attended middle or secondary school	-0.01	-0.02	-0.04**	0.00
	(0.18)	(0.12)	(0.11)	(0.22)
Attended post-secondary school	-0.02	-0.05	-0.04	0.01
	(0.32)	(0.21)	(0.20)	(0.36)
Inactive	0.13	0.05	0.12	0.10
	(0.62)	(0.37)	(0.39)	(0.73)
Student	0.12	0.01	0.08	0.09
	(0.60)	(0.37)	(0.38)	(0.70)
Unemployed	0.17	0.07	0.14*	0.14
	(0.61)	(0.37)	(0.38)	(0.72)
Private informal sector	0.16	0.06	0.11	0.13
	(0.60)	(0.36)	(0.38)	(0.71)
Private formal sector	0.11	0.03	0.12	0.08
	(0.65)	(0.40)	(0.41)	(0.78)
Observations	3356	6441	7437	2445
Log-likelihood	-1503.83	-3447.31	-3910.82	-1106.09

Logit estimations. Marginal effects are presented.
Coverage: 18-25 year old.

Table 2.3: Family background and ethnic identification

average. Results are presented in Table 2.7 in Appendix 1. This regression skims off and reveals the most powerful determinants of ethnic identification, those which significantly make the individual deviate from his "natural" inherited reference group. These factors are migration from a rural area, high education and unemployment. The impact of being a woman obviously stays unaffected by controlling for household fixed effects.

One more piece of evidence suggests that ethnic identification is not essential and

permanent but may vary according to the individual's particular situation at a given moment. When the individual is married and the spouse(s) is present in the household, we can determine whether the marriage if exogamous or endogamous. Surprisingly, we observe no difference in the level of ethnic identification between people who married a co-ethnic and people who married someone from an other ethnic group (Table 2.4). This shows how ethnic identification may be disconnected from the core cultural values that shape an individual's destiny and be more determined by the individual's particular situation and objectives.

	Endogamous marriage (77.0%)	Exogamous marriage (23.0%)
Is proud of his ethnic group (%)	75.6	75.0
Is proud of his nation (%)	24.4	25.0
Observations	8 716	2 781

Table 2.4: Exogamous marriage and ethnic identification

This section thus highlights the importance of education and migration as key determinants of individual identification. But some determinants related to the individual's particular position at a given time seem to play a role. The insertion on the job market is a noticeable example, those being unemployed or in a poorly protected job being incited to identify to their ethnic group. The occupation status may foster a strategic identification through the mobilization of kinship networks to improve the individual's position. This is the effect we now try to investigate more deeply.

2.3 Ethnic identification and occupational mobility

So far we have highlighted two main dimensions that drive ethnic identification. Our first estimation revealed the role of education and migration, and we showed the influence of the family background. But the results of the first estimation also suggested that an other factor may be at stake concerning the position on the job market: the use of an "active"

or strategic identification. In this section we try to investigate this point.

We would have liked to show that identifying to the ethnic group actually improves the individual's well-being and that for a given initial situation, ethnic identification brings positive returns. This would have required to solve the inherent endogeneity problem which we brought up above. Not surprisingly, a naive regression - of revenue or job position on a vector of regressors including ethnic identification - reveals the opposite result. We tried to find an instrument that would impact the level of ethnic identification but not the revenue or job position. Unfortunately, the surveys do not allow us to find any convincing instrument. Though it would have been far from perfect, the best we could think of is the occurrence of an event that strengthens the ties within a community, like a birth or the death of a member of the group. In the expenditure part of the 123 surveys, the expenses for celebrations are mentioned as well as their purpose. But these data were collected several months after the rest of the survey used in this paper, so that we cannot use these expenses to predict the observed ethnic identification.

We thus try to identify the active dimension of identification by showing that it is significantly more used by the individuals whose characteristics make the most likely to implement these strategies. The channel through which the occupational position may determine the level of ethnic identification is the possibility for the individuals to try and take advantage of their ethnic belonging to make their way on the job market. People who do not have a sufficient amount of human capital or social capital may play the ethnic card to find a new job or have a promotion. This story has to do both with an initial deprivation of human capital and a will to experience occupational mobility. We thus take these two factors into account so as to reveal the active or strategic dimension of identification.

The initial deprivation of human capital is largely captured by the individual's level of education. The will to experience mobility may be observed thanks to the fact that our surveys include a section on occupational perspectives for the individual. Any employed worker declares whether he intends to find a new job in the same firm - having a promotion -, to find a new job in a different firm, or to keep the position he has at current time. In

the first two cases, the individual is asked in how many years he thinks he will obtain this new position. We define people "eager to change job" as those who want to change their position and intend to obtain it within a year. The other ones are said "non eager" either because they are not looking for mobility or because it is an abstract desire for which no strategy is likely to be implemented.

All sample	30.7	Female	32.2	Unemployed	65.9
		Male	29.4	Informal	27.4
				Formal	24.6
				Civil servant	15.3
Non-educated	27.6	Father		Father	
Primary	30.5	non-educated	29.3	farmer	29.0
Middle / sec	33.5	Father		Father	
Post-sec	31.7	educated	33.6	non-farmer	32.4

Coverage: active people

Table 2.5: Share of employed workers eager to find/change job (%)

The share of people eager to find or change their job - around 30% of active people - is quite homogenous across the sub-groups presented in Table 2.5, except for the sub-group of unemployed who of course are massively willing to change their situation. Not surprisingly, civil servants also stand out with a lower will to change their position. If we let aside these two exceptions, eagerness to move does not seem to reflect any other observable characteristics.

If we simply introduce this variable in the benchmark regression, it turns out being non significant. The fact that ethnic identification may be used differently according to the level of education of the individual may account for this. So we try to see if being looking for occupational mobility modifies the way the job-market position affects the people's identification. As we explained above, this effect may differ according to the level of education. We test this possibility by introducing interaction terms in the regression. We provide the results in Table 2.8 in Appendix 2, but the number of civil servants who are uneducated and eager to change their job is much too low (23) for our results to be robust. They suggest that being unemployed or working in the informal sector significantly raises the probability that an individual identifies to his ethnic group provided that he is not

educated and that he is willing to find a job rapidly or to obtain a promotion. For those who don't long for occupational mobility, being unemployed or informal worker does not push them to identify to their group. Those who are educated have other ways to get a (better) job, so that their occupation status is not a key determinant. A poor insertion on the job market fosters ethnic identification for those people who want to improve their situation and are cornered to use this ethnic strategy because of a lack of human capital.

A more robust strategy has to do with the insertion of the ethnic group itself. Since individuals may use their ethnic group as a stepping stone for reaching a favorable position in the society or enter the job market, their strategic implication in the ethnic group might depend on how far the group itself is well inserted. People will all the more ask for help in their job search as their co-ethnics actually are in position to do something for them. We thus examine the effect of certain characteristics of the ethnic groups on the propensity of their members to identify with them. For doing this, we rely on the ethnic group classification used in the questionnaires which is quite similar to the ones used in the DHS national surveys. Of course, like any classification they are built upon somewhat arbitrary choices and methodologies. Table 2.9 in Appendix 3 presents the ethnic groups retained for each of the seven countries.

A decisive parameter in the individual's ethnic identification may be the share of his ethnic group that is in a good position on the job market and could help him. The relevant group characteristic may vary from an individual to an other. For example, if identification is strategic, unemployed could all the more identify to their group as the employed share of this group is high: if their primary objective is to find a job, this parameter will be the first one considered. And they may be less influenced by the share of ethnic group that is employed in the public sector. But while finding a job in the public sector appears as a second order aspiration for unemployed, it might be of first order for informal workers while the share of employed people would be less important for them since they already are employed.

We also saw in our core estimation in section 2.2 that migrants have a specific relationship to ethnic identification. This led us to also distinguish the migrants and people

who were born in the city. If groups of migrants actually develop a specific solidarity, the migrant's strategic identification might depend on whether his ethnic group is represented by an important share of migrants in the city. The larger it will be, the more likely the individual would be to play the ethnic card.

In order to test these hypotheses, we run regressions including the relevant shares of the ethnic group (one by one for they are embedded) in our baseline regression along with interaction terms involving the migration status, the will to find or change job, and the occupational status. For robustness reasons, we only compute these characteristics on the 42 ethnic groups represented by at least 50 persons in the sample. Results are displayed in Table 2.6.

The share of the ethnic group employed is a powerful incentive for people to identify to their ethnic group (first column). We expected this effect to be higher for the people eager to find or change their job. This is true only for the migrant people (the share of employed co-ethnics pushes the ethnic identification of the eager ones, and not of the non-eager). The distinction between eager and non-eager does not hold among the native. This pattern is clearer if we concentrate on unemployed people. The share of employed co-ethnics has a strong significative effect on the ethnic identification of unemployed people if they declare being actively looking for a job. This holds both among migrants and natives.

Among native people eager to change or find a job, the share of co-ethnics working in the civil service (middle column) has a strong effect on the ethnic identification of employed workers, either informal or formal. But it has no effect on the unemployed, for whom the decisive variable is the share of employed people. For all people non eager to find or change their job (migrant or native), the share of co-ethnics in the civil service does not have any impact. The negative effect found for migrant unemployed people admittedly does not fit this pattern.

We finally turn to the share of co-ethnics who are employed migrants. This share has a strong positive effect on the people who themselves are migrant, either unemployed or working in the informal sector, and who are looking for a (better) job. All other categories

Female	0.03***	0.03***	0.03***
	(0.01)	(0.01)	(0.01)
Age	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)
Father farmer	0.02*	0.02	0.01
	(0.01)	(0.01)	(0.01)
Size of the household	0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
Attended primary school	-0.04***	-0.03***	-0.03***
	(0.01)	(0.01)	(0.01)
Attended middle	-0.06***	-0.06***	-0.07***
or secondary school	(0.01)	(0.01)	(0.01)
Attended post	-0.09***	-0.09***	-0.09***
-secondary school	(0.01)	(0.01)	(0.01)
	Share of the ethnic group employed	**Share of the ethnic group in the civil service**	**Share of the ethnic group migrant and employed**
Native			
Eager to change job			
Unemployed	0.65**	0.49	-0.00
	(0.01)	(0.64)	(0.98)
Informal worker	0.51**	1.29*	0.21
	(0.01)	(0.08)	(0.19)
Formal worker	-0.16	4.55***	0.27
	(0.77)	(0.00)	(0.32)
Non eager to change job			
Unemployed	0.29	0.63	-0.14
	(0.41)	(0.61)	(0.54)
Informal worker	0.42***	-0.36	0.31***
	(0.00)	(0.47)	(0.00)
Formal worker	1.11***	-2.07	0.55*
	(0.00)	(0.14)	(0.07)
Migrant			
Eager to change job			
Unemployed	0.84***	-2.34**	0.53**
	(0.00)	(0.03)	(0.02)
Informal worker	0.45**	-0.33	0.43***
	(0.01)	(0.60)	(0.00)
Formal worker	0.94**	-2.26	0.56
	(0.05)	(0.23)	(0.12)
Non eager to change job			
Unemployed	0.01	-1.63	0.06
	(0.98)	(0.24)	(0.83)
Informal worker	0.21*	-0.22	0.15
	(0.05)	(0.62)	(0.11)
Formal worker	0.20	-1.17	0.15
	(0.49)	(0.26)	(0.49)
Observations		18698	

Logit estimations with interaction terms. Marginal effects are presented.
Lower panel: $P > \chi^2$ in parentheses.
Coverage: active people.

Table 2.6: Ethnic identification and group's insertion on the job market

are unaffected by this variable, if we except one outlying coefficient for the informal "non eager" native people. If we introduce the more general variable "share of co-ethnics who are migrants" (results not shown), there is no effect on ethnic identification.

Though imperfectly, these results seem to sketch a fairly consistent picture. People tend to identify all the more to their ethnic group as a large share of their co-ethnics is in a good position to help them get a job or improve the job they already have. Migrants are responsive to the share of their co-ethnics who are also migrants and employed. This provides suggestive evidence on the existence of a strategic and active ethnic identification, echoing some sociological theories that emphasize the role of interpersonal ties in job search like the seminal work by Granovetter (1974). Our results suggest that his framework fully applies to the role of ethnicity for job search in African urban contexts, the "weak ties" of co-ethnicity being strategically mobilized to reach a more protected position. Recent economic studies have shown how social networks and kinship ties could be part of a deliberate strategy to integrate the job market (Luke and Munshi 2006). We go further by investigating how this may even involve the feeling of ethnic membership.

The findings on migrants also echo a branch of sociology on ethnicity and migration that was initiated by the American urban sociology of the 1920s. The Chicago School of Sociology typically studied thoroughly how ethnic groups would help the migrants to be integrated in American cities (see for example Louis Wirth's works on social integration of Jewish migrants in Chicago (Wirth 1927)). Our results concur to one of the most important results of these sociological works, namely that ethnic groups help their members getting integrated in the urban society and find a place on the job market. Here also, recent empirical economic studies have highlighted the role of ethnic networks to help migrants integrate the job market (Munshi 2003).

This section shed light on the existence of an active identification to the ethnic group as a strategy to improve one's situation on the job market. Individuals who want to have an occupational mobility are pushed to identify to their ethnic group by the precariousness of their job, and they do even more so as an important share of their group is positioned on the rung of the ladder just above the one where they stand, and may therefore help

them climb it.

2.4 Is ethnicity a resource in social capital?

We saw how a poor education and being a migrant lead to a higher ethnic identification. We also studied how individuals are incited to identify to their ethnic group if a large share of co-ethnics is in good position to provide help on the job market, this effect being all the stronger as individuals are less educated or migrant. These results appear to form a coherent picture if we consider the hypotheses that an initial deprivation of social capital fosters the use of ethnic identification as an investment in a specific form of social capital.

In this short section, we discuss how ethnicity may be considered as a resource of social capital, in which people may invest when they are deprived of it and feel they need it. We refer to the notion of social capital as it is defined by Bourdieu as a measure of the individual's amount of relationships or size of networks (Bourdieu 1986) rather than to Putnam's definition of social capital as the set of norms, the level of trust, the density of interpersonal ties that one may observe at the level of a community or society[3](Putnam 1995). We try to identify what are the incentives for an individual to voluntarily invest in that kind of capital and accumulate it. By doing this, we refer to the works by Glaeser, Laibson, and Sacerdote (2002) who try to formalize individual investment in social capital. We built a small theoretical framework to illustrate how our results may concur to this view (see Appendix 4).

Ethnic identification may be seen as a form of investment in a particular form of social capital: ethnic capital. It aims at extending an individual's network beyond the set of relationships integrated in an already accumulated stock of social capital. In this simple framework, the background of each individual is key for understanding its propensity to identify to it ethnic group. A person who enjoys a high initial level of social capital has little incentives to invest in ethnic relationships: since he already has an important network, the marginal benefit he could derive from his implication in ethnic groups is

[3]For a comprehensive survey on this notion, see Coleman (1990), Putnam (1995) and Sobel (2002). For a discussion on its interactions with development, see Woolcock (1998).

limited, whereas its cost remains at the same level - getting involved in such networks is time-consuming and implies to be plausibly asked for reciprocity. This need to reciprocate is also the argument raised by Luke and Munshi (2006) to explain why high-ability individuals are less likely to get married: they do not really need marriage to get employed but would still bear the cost of high remittances to be sent to the extended family. A second key factor is the level of integration of the ethnic group in the job market.

The nature of the initial stock of social capital is manifold. Two main dimensions were highlighted in the empirical estimations: education and local integration. Being native may help the individual have a better integration in the neighborhood and a better knowledge of local know-how (DiPasquale and Glaeser 1999), independently from his implication in his ethnic group. It also favors the creation and consolidation of a friendship network. Education gives access to information and integrates the individual in a network of other educated people. Education and local integration provide social capital, making ethnic identification less necessary.

Conversely, ethnic identification is peak when the deprivation of social capital is maximum. Non educated people and uprooted migrants who arrive in the main city appear as the most likely to claim their belonging to the ethnic group. Moving to the city engenders a shift in the reference group and a destruction of the stock of social capital: individuals leave their relationships and a familiar environment, and have to reconstruct a network in order to meet the challenges of arriving in the big city to earn a living. In an urban multiethnic environment, ethnicity becomes a distinctive element that helps people reconstitute the amount of social capital necessary for successful social interactions (Habyarimana et al. 2006).

The intergenerational transmission of value may partly be the reflection of the effect of the initial stock of social capital, which might indeed be inherited from the family background. The rigidity in intergenerational transmissions of occupations and education levels in the African context (Bossuroy and Cogneau 2008) accounts for the effects of the father's characteristics. This intergenerational rigidity may as well fully apply to the level of social capital (Bourdieu and Passeron 1979). The father's deprivation of social capital

drives him to show a high level of ethnic identification, but also determines the child's own deprivation of social capital and thus his ethnic identification.

This framework also helps understand the role of age. Time creates social capital by stabilizing individual's work trajectory and social group. Social integration consolidates with age and the competition on the job market decreases over the life-cycle, because the upward moves occur early in a work career (Bossuroy and Cogneau 2008) and because of the path-dependency of occupational trajectories. In sum, the deprivation of social capital from other sources decreases with age, while the need to mobilize this capital on the job market also decreases. This makes ethnic identification less necessary, and the salience of ethnicity decreases subsequently.

2.5 Conclusion

This study is a first attempt to analyze which characteristics pushes an individual to identify to his ethnic group. We provide empirical evidence on the roles played by the level of education, the family background,, migration and the use of identification as an instrument for job search and occupational mobility. The two dimensions of identification - one being an inheritance of the educational and family background, the other being strategic - may however be parts of the same reality: in a society where a fierce competition prevails, the initial deprivation of social capital due to a poor education or to migration creates the need to implement strategies based on ethnic ties to experience upward mobility. Since the intergenerational reproduction of social positions is high, this deprivation might be massively inherited.

This chapter admittedly suffers from shortcomings, mostly due to the complexity of the phenomenon under study. Pinning down the economic determinants and implications of such a subjective concept as ethnic pride turned out being much more complicated than expected. But we hope to have uncovered some suggestive results on the fact that ethnic salience is not only the product of the political manipulation of masses by the elite, but may also be a rational response of individuals facing such economic constraints as the lack of education or the difficulty to get integrated on the job market.

Our results contribute to the analysis of the effects of modernity and development on identities. We provide empirical support to Bates' thrust that modernity raises the importance of ethnic groups because it stirs the competition between individuals and makes ethnic ties strategic. Our analysis also contributes to the sociological analysis of the interactions between an individual and his social group. The importance of intra-group solidarity reveals, especially among migrants. The destruction of social capital provoked by migration makes it often necessary for the individual to get involved in the community of migrant co-ethnics that would help him to make his way in the city of settlement.

Identity choice therefore appears closely linked to some core characteristics of the economy. The rigidity on the job market and the returns to education appear as key parameters to understand why it is rational for individuals to cling to their ethnicity for improving their situation. Much has been said on politics being a determinant of the salience of ethnic cleavages. We suggest that the interaction may as well be analyzed the other way round. Social and economical contexts lead individuals to have a certain relationship to their ethnic group, and social rigidity causes the reproduction of these attitudes over generations. The impact of individual ethnic salience on politics is huge, for it determines the feeling of citizenship, the importance of patronage ties and the motives for voting. The capacity of the State to provide people with a fluid job market that adequately rewards education partly determines the citizen's attitude to the nation. In this respect, the openness of a society, as measured by intergenerational mobility and open access to education and protected jobs, may appear as a pre-requisite for the construction of a nation and the settlement of democracy.

2.6 Appendix

Appendix 1

	(1)
Female	0.31***
	(0.05)
Age	-0.00
	(0.00)
Migrant from a rural area	0.24**
	(0.11)
Migrant from an urban area	0.07
	(0.08)
Attended primary school	-0.12
	(0.07)
Attended middle or secondary school	-0.29***
	(0.08)
Attended post-secondary school	-0.54***
	(0.13)
Inactive	0.10
	(0.13)
Student	0.15
	(0.14)
Unemployed	0.31**
	(0.13)
Private informal sector	0.15
	(0.12)
Private formal sector	0.10
	(0.14)
Observations	7923
Log-likelihood	-2897.55

Conditional Logit regression with household fixed effects. Marginal effects are presented.

Table 2.7: Baseline estimation with household fixed effects

Appendix 2

Female		0.02**	
		(0.06)	
Age		-0.00*	
		(0.00)	
Father farmer		0.01	
		(0.06)	
Size of the household		-0.00	
		(0.01)	
Migrant from a rural area		0.01	
		(0.08)	
Migrant from an urban area		0.04***	
		(0.06)	
Attended primary school		-0.01	
		(0.32)	
Attended middle or secondary school		-0.04	
		(0.32)	
Attended post-secondary school		-0.08*	
		(0.05)	
Uneducated	**Yes**	**Yes**	**No**
Eager to change job	**Yes**	**No**	**Yes**
Unemployed	0.54**	0.07	0.02
	(0.02)	(0.35)	(0.80)
Private informal sector	0.52**	0.06	0.06
	(0.02)	(0.25)	(0.17)
Private formal sector	0.48*	0.10	0.03
	(0.06)	(0.17)	(0.60)

Logit estimations with interaction terms.
Marginal effects are presented.
Lower panel: $P > \chi^2$ *in parentheses.*
Coverage: active people.

Table 2.8: Effect of the position on the job market interacted with the level of education and the eagerness to change job

Appendix 3

Benin		**Burkina Faso**		**Côte d'Ivoire**		**Mali**	
Fon	61.9	Mossi	80.8	Akan	45.3	Bambara	35.1
Adja	20.3	Other Mandings	4.4	North Mande	19.2	Malinke	18.1
Yoruba	10.8	Bissa	4.1	Kru	18.9	Fula	17.0
Other	3.3	Gurunsi*	3.0	Gur	9.7	Sarakole	11.4
Dendi	1.5	Other*	1.9	South Mande	6.9	Senufo	4.2
Yoa/Lopka	1.1	Fula*	1.8			Dogon	4.0
Bariba*	0.6	Dagari/Lobi*	1.3			Songhai	3.6
Betamaribe*	0.3	Gurmanche*	1.2			Bobo	3.1
Fula*	0.3	Bobo*	1.1			Other	1.9
		Senufo*	0.5			Arab	1.3
						Tuareg*	0.3
Niger		**Senegal**		**Togo**			
Zerma	52.0	Wolof	41.28	Adja/Ewe	74.0		
Hausa	32.0	Fula	18.87	Kabye/Tem	15.8		
Fula	7.4	Serer	13.06	Para/Gurma/Akan	5.0		
Tuareg	5.0	Lebou	7.63	Ana/Ife*	2.7		
Other	1.6	Jola	5.19	Akposso/Akebou*	1.9		
Kanuri	1.4	Other	4.8	Other*	0.7		
Gurma*	0.5	Mandinka	3.86				
Tubu*	0.1	Sarakole	2.88				
Arab*	0.1	Mandyak/Balanta	2.43				

Table 2.9: Ethnic groups (% of the population in the capital)
**: ethnic group represented by less than 50 individuals in the sample*

Appendix 4: A small model of investment in ethnic capital

Hypotheses

We consider a single individual who belongs to an ethnic group and cannot change to another. His revenue or utility depends positively on his level of human capital, which is a combination of an initial stock of capital $K_0 \geq 0$ and a flux of social capital on which decisions are made. K_0 typically depends on the individual's level of education, and is exogenous. The flux of social capital depends on the implication of individuals in ethnic networks, what we call investment in ethnic capital and note $\theta \geq 0$. It corresponds intuitively to the number of persons contacted for help on the ground of common membership, the time spent in meeting other members of the ethnic group, the energy spent on seeking information from the ethnic group. The returns to such an investment are determined by the extent to which the ethnic group is well inserted in the urban world, typically on the job market. S_ϵ is the share of the ethnic group ϵ that is in position to help the individual. This parameter is exogenous as well. In our framework, ethnicity is similar to a non rival public good. The returns to investment are not affected by any queuing effect.

The level of human capital is given by

$$R(\theta, K_0) = (K_0^{\frac{1}{S_\epsilon}} + \theta)^{S_\epsilon} \tag{2.1}$$

.

Note that the returns of investments in ethnic capital are positive and marginally decreasing: $\frac{\partial R}{\partial \theta} \geq 0$, $\frac{\partial^2 R}{\partial \theta^2} \leq 0$. Imagine an individual who seeks an increase in social capital and gets in touch with all the persons he can think of on the ground of common membership to the ethnic group. The first person will presumably help him make the first steps in the ethnic network, give him the basic information he has to know about the job market for instance, and may open many doors. If the individual continues to invest in ethnic capital and increase θ, the next person contacted may help but the bulk

of the information would have been already transmitted. The tenth person might provide little returns, even if it happens that she is the one who provides the marginal surplus that helps the individual go beyond the threshold required for, say, get a job in the formal sector. It is thus sensible to assume that returns are marginally decreasing.

Without any investment in ethnic capital ($\theta = 0$), a person will have access to an amount of social capital corresponding to the initial stock accumulated $K_0 > 0$: literacy, people met during the schooling years, access to information thanks to reading skills... Conversely, an individual who has never been to school can only rely on the returns to his ethnic investment to increase his level of social capital. We can see that K_0 and θ are substitutes in a marginally decreasing production function. The higher K_0, the lower the returns to a given amount of θ: investment in ethnic capital only helps to reach out to the people who are not already part of the network initially accumulated.

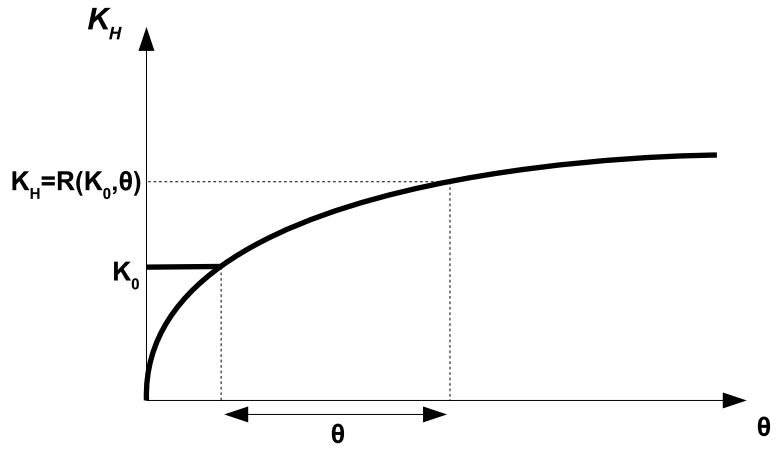


Figure 2.2: Returns of θ for a positive K_0

Resorting to ethnic investment however has costs: it is necessarily time-consuming and creates a duty of reciprocity. Being involved in social networks and taking advantage of them implies that the individual might be later asked to give back some of his time, information, contacts etc. Investing in ethnic capital creates a social bond with an obligation to reciprocate. The set of obligations created by the investment θ - its cost $C(\theta)$ - corresponds to the sum of a series of reimbursements, which we sensibly assume convergent to a finite limit c - an infinite limit would imply an infinite obligation to reimburse and thus

deter any positive investment in ethnic capital.

$$C(\theta) = c\theta \tag{2.2}$$

We assume that the cost function is linear, contrary to the returns function: when the individual establishes a contact with any relationship or relative, he opens a form of drawing right for this person, no matter if he or she is the first or tenth person contacted. Moreover, the time and energy spent in such an increase in ethnic capital have no reason to decrease. The liability created is the same for the individual, whatever the low level of returns granted.

An optimal level of investment in ethnic capital

The individual's program is the following:

$$\max U(\theta) = R(\theta, K_0) - C(\theta) = (K_0^{\frac{1}{S_\epsilon}} + \theta)^{S_\epsilon} - c\theta$$

The first order condition determines the optimal level of investment in ethnic capital $\theta^\star$:

$$\theta^\star = \begin{cases} (\frac{S_\epsilon}{c})^{\frac{1}{1-S_\epsilon}} - K_0^{\frac{1}{S_\epsilon}} & \text{if } K_0 \leq (\frac{S_\epsilon}{c})^{\frac{S_\epsilon}{1-S_\epsilon}} \\ \\ 0 & \text{if } K_0 > (\frac{S_\epsilon}{c})^{\frac{S_\epsilon}{1-S_\epsilon}} \end{cases} \tag{2.3}$$

The individual's utility is thus $U(\theta^\star) = R(\theta^\star, K_0) - C(\theta^\star)$, and is given by

$$U(\theta^\star) = \begin{cases} cK_0^{\frac{1}{S_\epsilon}} + c(\frac{1-S_\epsilon}{S_\epsilon})(\frac{S_\epsilon}{c})^{\frac{1}{1-S_\epsilon}} & \text{if } K_0 \leq (\frac{S_\epsilon}{c})^{\frac{S_\epsilon}{1-S_\epsilon}} \\ \\ K_0 & \text{if } K_0 > (\frac{S_\epsilon}{c})^{\frac{S_\epsilon}{1-S_\epsilon}} \end{cases} \tag{2.4}$$

It may be easily verified that $U(\theta^\star)$ is a positive function of S_ϵ and K_0, and a negative function of c. The level of ethnic identification is positively impacted by the benefits provided by the investment and negatively by its costs. A rise in K_0 lowers the level of

ethnic identification. Beyond a certain threshold $(\frac{S_\epsilon}{c})^{\frac{S_\epsilon}{1-S_\epsilon}}$, investment in ethnic capital would only provide negative returns because of the too weak marginal gains compared to the costs. Individuals with a high initial stock of capital thus do not invest in their ethnic relationships. In terms of identification, these people would tend to claim less their belonging to the ethnic group, for they know they can rely on the high level of integration they already reached and thus prefer to avoid the costs attached to an investment in ethnic capital.

This small model constitutes an illustrative framework which helps understand how our empirical results may form a consistent picture.

Appendix 5: Some results on the impact of the political context

In this paper we chose to investigate the individual determinants of ethnic identification. But much of the existing literature concentrates on the effect of political contexts on ethnic group mobilization, which is said to be a critical factor. We try to see if our data concur to this view and therefore examine how the share of ethnic groups in the population affects the level of ethnic identification of its members. African politics is shown to be at least partially determined by the relationships and the balance of power between ethnic groups. On the one hand, the fact that nations are divided into different ethnic groups paves the way to rivalries between these groups to increase their influence on the central power. Large groups may confront to secure their position, minority groups may fight for being recognized and for their identities to be preserved. This may be seen as a kind of grassroot rivalry, that may be determined by the relative weight of each group. On the other hand, it is very well documented that political elites try to mobilize their co-ethnics to increase their influence at the national level. This other top-down channel is likely to play a role when political confrontations occur at the national level, noticeably in election times. These are the two effects we want to test in this Appendix.

We first try to see if the share of ethnic groups within a population has an impact. Several different effects may be expected. Larger groups may have a higher degree of mobilization than smaller ones, if they are involved in rivalries at the central level, whereas smaller ones would not be affected by this incentive and may even feel more protected by claiming a high level of integration in the national level, to the detriment of their ethnic pride. But oppositely, larger groups may less need to claim their identity because they do not feel threatened, and rather claim that they embody the whole nation, while smaller groups may present a "defensive" pride and try to have their specificities acknowledged by the nation. Many historical examples may be brought up to illustrate these two opposite effects (Horowitz 1985).

The effect may be quadratic as well: a U-shape would suggest that the small ethnic

groups feel excluded from the nation or struggle to defend their identity, while large groups may show a high level of ethnic identification due to their dominant position. An inverted U-shape would suggest that the ethnic mobilization occurs when middle-size groups are involved in a competition for power. We thus introduce a quadratic function of the share of ethnic group in the benchmark regression presented in section 2.2 (first panel). To check for the robustness of the results, we drop the countries one by one (second panel) and run the same regression on each country separately (third panel). To see which ethnic group drives the effects, we present the results obtained (if significant) when ethnic dummies are added in country-specific regression, the reference modality being always the majority group (bottom panel). Results are presented in Table 2.10.

The first regression tends to support the existence of a U-shape relationship between the numerical importance of ethnic groups and their degree of mobilization. This effect is relatively robust to dropping countries one by one, but it disappears when we analyze each country separately. Moreover, the only significant results obtained in country-specific analysis - in Benin and Senegal - contradict the general result. Our data does not allow us to draw a general robust picture on this issue. Is it really surprising? A number of works concur to the view that the salience of ethnicity within an ethnic group strongly depends on the political institutions, the policy implemented in the specific region, the geographical distribution of ethnic groups or the level of inequalities. This is why we were legitimate to expect a variety of credible though contradictory effects. These contextual effects make the search for a general pattern based on numerical proportions rather vain, all the more on a very limited number of countries.

We now test the effect of the political context, and therefore follow Eifert, Miguel, and Posner (2007) by including the distance to the most proximate election (either already held or forthcoming). Table 2.11 displays the timing of elections in the countries under study.

We also add some other national variables of which many wonder whether they influence the salience of ethnicity: country wealth, fractionalization or democracy indicators. Some Afrobarometer datasets that include a much more important number of countries

	All countries						
Share of ethnic group	-1.11***						
	(0.27)						
(Share of ethnic group)^2	1.06***						
	(0.38)						
Observations	20417						
Log-likelihood	-10841.38						
	All countries but...						
	Benin	Burkina Faso	Cote d'Ivoire	Mali	Niger	Senegal	Togo
Share of ethnic group	-1.14***	-0.95***	-1.22***	-1.15***	-1.23***	-0.77**	-1.18***
	(0.28)	(0.28)	(0.26)	(0.32)	(0.29)	(0.34)	(0.29)
(Share of ethnic group)^2	0.97**	0.74*	1.26***	1.11**	1.23***	0.68	1.18***
	(0.42)	(0.40)	(0.37)	(0.44)	(0.41)	(0.45)	(0.43)
Observations	16308	19466	17453	17248	16282	16419	19326
Log-likelihood	-8693.88	-10276.88	-9087.26	-8955.83	-8811.12	-8901.03	- 10234.29
	Only...						
	Benin	Burkina Faso	Cote d'Ivoire	Mali	Niger	Senegal	Togo
Share of ethnic group	1.71*	-80.66	0.89	-0.65	0.60	2.01**	-0.82
	(0.96)	(51.33)	(1.33)	(0.99)	(0.62)	(1.00)	(2.51)
(Share of ethnic group)^2	-2.37*	95.96	-2.54	0.24	-1.49	-7.15***	0.48
	(1.27)	(60.90)	(2.29)	(2.33)	(1.01)	(2.10)	(2.91)
Observations	4109	951	2964	3169	4135	3998	1091
Log likelihood	-2101.37	-586.83	-1614.00	-1924.91	-1758.91	-1897.38	-603.98
	Benin	Burkina Faso	Cote d'Ivoire	Mali	Niger	Senegal	Togo
	Ref: Fon Yoruba (+)	*Ref: Mossi* Other Mande (-)	*Ref: Akan* North Mande (+++) Gur, South Mande (+)	*Ref: Bambara* Dogon, Sarakole, Senufo Malinke (++)	*Ref: Zerma* Fula (++) Hausa (+)	*Ref: Wolof* Sarakole (+) All other groups (+++) (+++) (+++)	*Ref: Adja* Kabye (+)
Observations	5 762	1 504	3 742	4 224	5 910	6 342	1 422
Log likelihood	- 2 913.4	- 881.0	- 1 935.7	- 2 603.0	- 2 570.1	- 2 803.1	- 786.9

Logit estimation, with marginal effect estimates. Standard errors in parentheses.

Table 2.10: Effects of the share of ethnic groups in the urban population

are more adapted to such an inquiry (Norris and Mattes 2003) (Eifert, Miguel, and Posner 2007), and the seven countries of our sample do not allow us to do much on this. But we try to introduce national variables one after another, and be very cautious with the results we obtain. We use Fearon's indicator of ethnic fractionalization (Fearon 2002), which crosses several criteria for defining an ethnic group and thus constitutes an improvement as compared to the only linguistic criterion used in the first classifications. But since our sample is restricted to the main cities, we also compute a local fractionalization Herfindhal

	Polls held before the survey			Polls held after the survey	
	Presidential	**Parliamentary**	**SURVEY**	**Presidential**	**Parliamentary**
Benin	March 2001	March 1999	**October 2001**	March 2006	March 2003
	7	31		53	17
Burkina Faso	November 1998	May 1997	**October 2001**	November 2005	May 2002
	35	53		49	7
Côte d'Ivoire	October 2000	January 2001	**May 2001**	*Not known*	*Not known*
	7	4			
Mali	August 1997	May 1997	**October 2001**	May 2002	July 2002
	50	53		7	9
Niger	November 1999	November 1999	**September 2002**	December 2004	December 2004
	34	34		27	27
Senegal	March 2000	April 2001	**October 2002**	February 2007	June 2007
	31	18		52	56
Togo	June 1998	March 1999	**September 2001**	June 2003	October 2002
	39	30		21	13

Reading: in Benin, the election closest to the survey was a presidential election held 7 months earlier. We thus retain 7.

Table 2.11: Preceding and following polls, and distance (in months) to the date of the survey

indicator based on our sample following the same formula as the classical ELF. We also include the civil rights indicator drawn up by *Freedom House*, and the GDP per capita PPP level available in the *World Development Indicators* contemporary to each survey. Table 2.12 provides descriptive statistics.

	Benin	**Burkina Faso**	**Côte d'Ivoire**	**Mali**	**Niger**	**Senegal**	**Togo**
GDP per capita ($)	920	960	1540	740	740	1480	1380
Fractionalization	0.62	0.70	0.78	0.75	0.64	0.73	0.88
Local fractionalization	0.55	0.35	0.71	0.79	0.62	0.78	0.43
Civil rights	48	34	15	43	29	37	24
Distance to the most proximate election (months)	7	7	4	7	27	18	13

Sources: 1-2-3 surveys, author's computations, WDI, James Fearon's database, Freedom House

Table 2.12: National variables

The variables are added one by one to the core regression presented in section 2.2. Coefficients of national variables are presented in Table 2.13.

The very limited number of countries notwithstanding, we find that the wealth of the country and the level of civil rights have no effect on the average level of ethnic identification. The national fractionalization index plays positively, which contradicts the

GDP per capita	-0.00				
	(0.00)				
Fractionalization		0.33***			
		(0.27)			
Local fractionalization			-0.00		
			(0.16)		
Civil rights				0.00	
				(0.00)	
Distance to the most proximate election					-0.00***
					(0.00)
Observations	20733	20733	20733	20733	20733
Log-likelihood	-11156.53	-11132.35	-11158.26	-11158.12	-11101.09

Logit estimation, with marginal effect estimates. Standard errors in parentheses.

Table 2.13: Effect of national variables

findings by Eifert, Miguel, and Posner (2007) - they find exactly the opposite. But the local indicator turns out being non significant. This tends to confirm that the role of this measure in determining the level of ethnic salience is far from clear, although it has long been used almost as a proxy for it. But we confirm the result on the distance to a national election, which significantly lowers the salience of ethnicity. Put the other way round, the closer people are from a political event, the more they refer to their ethnic group. Log-likelihoods show that the distance to elections is the best explaining factor when compared to the other national variables.

This short study of the effect of political determinants shows that the share of ethnic groups, wealth and fractionalization present highly ambiguous effects. Our results tend to confirm that an intense political contexts, like in election times, push to the mobilization of ethnic groups and raises the level of ethnic identification.

Chapter 3

Ethnicity and Election Outcomes in Ghana

For about a decade, a wide scope of economic literature deals with the effect of ethnicity on development. It tends to demonstrate that the heterogeneity of a given population deters its capacity to set up the institutions suitable for economic growth and poverty reduction. The core of the argument at least implicitly centers on the specific political economy of such societies. A first kind of explanation deals with conflicts: conflicts would be more likely to occur in more heterogenous societies. This idea, supported by qualitative works like those by Horowitz (1985), is the main argument invoked by Easterly and Levine (1997) in their influential paper, and is investigated by a number of papers (Hegre and Sambanis 2006) (Collier, Hoeffler, and Rohner 2006). An other channel through which ethnicity may impact development pertains to the possible rivalry and non-cooperative relationships between groups. A range of papers investigates the properties of such a political economy, and shows that more heterogenous communities are associated with a lower access to development (Miguel 2006), (Dayton-Johnson 2000). This would be due to the difficulties they have to work together (Alesina and La Ferrara 2000b) in a context where the provision of public goods is determined by the specific balance of power between the different groups (Banerjee and Somanathan 2007). Such mechanisms entail less financed states and less efficient public policies (Alesina, Baqir, and Easterly 1999).

Likewise, the rivalry between groups in a fragmented society impacts the aggregate social choice generated by democratic processes. Robinson (2001) investigates the impact of fractionalization on a materialistic rational choice model of conflict, that may well be applicable to votes. He shows that ethnic identity may substitute to social class belonging and determine individuals' choice. Roemer (1998) directly focuses on a voting model in which he introduces a non-economic issue (typically a religious affiliation). He shows that if there are two issues at stake instead of only one (e.g. the level of redistribution), the political platform of competing parties may change dramatically. Roemer even refers to Marx by saying that a non-economic issue may be purposely introduced by elites to divert the people's attention from the issue of class domination. By focusing on a non-economic debate, people would vote against their own economic interest and allow the perpetuation of unequal relationships.

In this framework, ethnicity and ethnic rivalries are typical non-economic issues that may prevail on economic ones in African democracies, and help understand some key features of the political economy of these countries. First, in a context of huge inequalities (Cogneau et al. 2007), African elites very often manipulate ethnic cleavages to win elections (see for example Norris and Mattes (2003), Glaeser (2005) or the comprehensive work by Posner (2006)). Second, the pattern of election results in African countries is commonly said to follow ethnic lines. Third, the weakness of civil societies shows that African poor are little organized while elites tend to stay in power and secure their position. Should we then conclude that ethnic cleavages are one of the outstanding explanatory factors for the political weakness of the poor, whose attention is diverted from the reality of political and economical oppression? In other terms, following Roemer's paraphrase of Marx, is ethnicity the opium of the masses?

If this was true, votes would be overwhelmingly determined by ethnic structures of the population, while economic and political determinants would play a secondary role. By economic and political determinants, we mean both class and evaluative determinants. Class vote refers to the vote cast by a citizen on the ground of his position in the wealth distribution. Typically, if class vote prevails, poor people tend to vote for liberal pro-

redistribution party while rich people tend to vote for a conservative party. Class vote and ethnic vote are independent as soon as every ethnic group is heterogeneous enough in terms of social and economic outcomes (ie. ethnic lines do not reproduce class lines). Evaluative vote refers to the vote cast on the ground of an assessment of the quality of the policy implemented by the incumbent government. It may have the same pattern as class vote if the policy was significantly class-oriented, or as ethnic vote if clientelism or geographical favoritism provided incentives for ethnic groups to vote for a given candidate. But at a macro level, ethnic and non-ethnic voting are likely to be different.

Whether ethnic or non-ethnic determinants prevail is a key question about African countries, and much is said on this topic without rigorous analysis. Indeed, quantitative studies are extremely scarce on developing countries in general and African countries in particular, contrary to the number of those dealing with election outcomes in industrialized countries (see among many others Alesina and Rosenthal (1996) on American presidential and congressional elections, and Goux and Maurin (2004) or Lewis-Beck (1997) on French elections).

African elections have been little studied until very recently. Some recent papers analyze them through the lens of non representative individual level surveys. For example Erdmann (2007) uses descriptive statistics of a series of electoral results in Zambia as well as survey data on about a thousand people. He concedes ethnicity plays an important role but also evokes the relative political mobilization of ethnic groups and program evaluation as of a certain importance. Likewise, Lindberg and Morrison (2008) use survey data and qualitative data from focus groups to contest the importance of ethnicity or clientelism in Ghanaian elections. They emphasize the role played by evaluation of candidates and parties.

An important series of papers derives from the Afrobarometer surveys held in a growing number of African countries, with small samples stratified to be nationally representative. Political alignment was studied in Malawi (Ferree and Horowitz 2007), Nigeria (Lewis 2007), Benin (Battle and Seely 2007) or Kenya (Bratton and Kimenyi 2008). They provide insightful analysis on the individual motives for party alignments and often relate them

to the political institutions or party structures. The shortcoming of such studies is that they use declarative information that may be subject to severe biases, for individuals may not declare what they really think or may have a biased perception of their own motives. For example, in a recent paper on Kenya, Bratton and Kimenyi (2008) present somewhat paradoxical results with about 90% of individuals denying that they vote on ethnic motives but yet a majority acknowledging that ethnicity is a major determinant of election outcomes. In such cases, the conclusions may be severely affected by the conditions in which information was collected. A solution to that problem is the post-poll surveys carried right after people voted in an election. This kind of information is much more reliable, since people at least cannot shut their eyes on their political behavior - they may only lie consciously, which is much less frequent. That kind of surveys unfortunately does not exist in most African countries.

The use of aggregate electoral data allows to circumvent this declarative fallacy. Studies which involve such data (generally at the constituency or district level) are sometimes called "ecological studies", for their unit is a geographical area and not individual behaviors. They have the advantage to allow a wider coverage and to use the actual results of a given poll, but present the drawback to be subject to another fallacy sometimes called the "ecological fallacy", *i.e.* to misleading interpretations of the effect of aggregate characteristics on aggregate outcomes. We will of course try not to fall into this pit, and mention whenever such fallacious conclusions may be drawn. In the absence of reliable individual information, researchers are only free to choose between two different possible fallacies. Although papers using these two methods compete and denigrate each other, their complementarity is obvious.

Electoral outcomes were not used very frequently to study African elections, mainly because of the lack of reliable datasets aggregated on an appropriate level. Ecological studies include the one by Posner and Simon (2002) on the Zambian case, which shows that the electoral results are little influenced by economic conditions except the changes in poverty between two polls. On Ghana, a recent paper (Fridy 2007) used aggregate electoral data to disentangle the roles of ethnicity, economics and politics. This paper

seems us to try and answer the good question, but the data and method involved do not allow the author to properly identify the effects of each of these factors, as we will try to show here.

The fact that Ghana was chosen as a field of research in two of the rare studies on African countries is not surprising. Politics in Ghana is especially interesting when it comes to analyzing the role of ethnicity in a democratic country: Ghana fulfills every pre-requisite for such a study. First, Ghana is democratic. After a long period of political turmoil in the 1970s and a "soft" dictatorship by Jerry Rawlings in the 1980s, multipartism and democracy were installed at the beginning of the 1990s and endure from then on. Free and fair elections were held and progressively recognized as "the only game in town", as we will see in section 3.1. In 2000, power shift peacefully from one of the two main parties to the other, which may be considered as the sign of a mature democracy. Second, politics in Ghana is made clearer by the fact that the political field is structured along a two-party system anchored in history. As we will see in section 3.1, the two main parties in Ghana somehow form a left-right or conservative-liberal scheme, which makes the study of economic voting accurate. Third, there is a historical background of ethnic rivalries in Ghana. Such rivalries originate in the period where Ashanti, Ewe or Fante kingdoms competed for occupying territories and selling slaves to the Europeans. Compromise, balance of powers and distrust between ethnic groups have always been key to understand Ghanaian politics. Although peace prevails for about a century, the ethnic factor exists and inter-ethnic violence frequently bursts locally (Tsikata and Seini 2004). Fourth, Ghana may be considered as an "average" African country. Its size, fractionalization, density and history make it quite comparable to most African countries, and its level of development make it appear as an "upper-middle class" African country. This makes this country a fascinating field for the study of African democracy.

In this paper we intend to investigate the respective weight of ethnic and non-ethnic determinants of votes in a national election in Ghana. This is made possible by the collection of several district-level datasets from various sources, which allow to identify precisely the non-ethnic determinants of vote. The remainder of the paper is organized as follows:

in section 3.1, we propose a historical survey of politics in Ghana and especially trace the origins and key features of the two-party pattern. Section 3.2 presents the different data sources used in the empirics and provides some descriptive statistics. We then estimate the determinants of vote following two different and complementary strategies: in section 3.3 we first analyze the results of the presidential election 2004 and show that ethnicity is a better explaining factor than non-ethnic characteristics, but does not account for the whole heterogeneity of votes, by far. Then in section 3.4 we examine the determinants of the evolution of votes and try to identify what made districts vote more or less for a given party than four years earlier in the previous presidential scrutiny. Thereby we control for the structural correlation between ethnicity and party affiliation and show that non-ethnic voting is key to understand the evolution of votes. These two methods (analysis of the structure or of the evolution) provide us two ways to reconstruct the voting outcomes and see which of the models (ethnic or non-ethnic) is the most accurate, which we do in section 3.5. Section 3.6 provides some robustness checks for these results and section 3.7 concludes.

3.1 Historical background

3.1.1 The origins of the two-party system

The Ghanaian two-party system is deeply rooted and dates back from the liberation movements under the colonial power (Buah 1998). In 1947, lawyer and journalist Joseph B. Danquah founded the first political party, the United Gold Coast Convention (UGCC). It included members of the African elite (mostly lawyers) and invited a young intellectual settled then in the United Kingdom: Kwame Nkrumah. The unity of this movement only lasted a year, the time necessary for six of the main UGCC leaders (the "Big Six") to be imprisoned in what remained as a milestone episode on the path to independence. But in 1949, Nkrumah broke away from the party and inaugurated his own party, the Convention People's Party (CPP). The CPP presented a more radical nationalist programm, calling for "Self-government NOW", while the UGCC appeared by contrast more compromised

with the colonial power. Besides, while UGCC leaders were almost all Ashanti and closely linked with Ashanti traditional chiefs, the CPP leaders appeared selfless and dedicated solely to the liberation of the people without any connection to a specific ethnic group. The CPP rapidly increased its influence among the people and obtained overwhelming majorities in the elections held in 1951 and 1956. It defeated the National Liberation Movement (NLM), which was created by Danquah and Kofi Busia in 1954 and succeeded to the UGCC.

The rivalry between the CPP and the NLM in the 1950s and 60s crystallized all major splits in Ghanaian politics. The NLM (also more generally referred to as "the Busia/Danquah tradition") had its strongholds in the Ashanti region. Its main supports were to be found among the cocoa growers and the traditional chiefs, whose interests were defended. It recruited among the educated elite and proposed a rather conservative project for Ghanaian society. By contrast, the CPP (and later all nkrumahist parties) defended the "masses" and presented a more radical political position. During his presidency (1957-1966), Kwame Nkrumah opposed the interests of cocoa growers by raising taxes on exports and contested the power of Ashanti traditional rulers (Higazi 2006). He made socialism the official ideology of the regime and drew his country closer to the Eastern bloc (although he remained as one of the first and most influential pan-africanist leaders).

After the fall of Nkrumah, overthrown by a coup in 1966, Kofi Busia came to power in 1969 and implemented a very different policy. He offered financial support to the revenues of cocoa growers, broke off with communist countries and leaned on the Akan majority group (of which Ashanti form a sub-group). But the economic crisis accelerated his fall and he was dismissed by a military coup in 1972. We thus see that as early as in the immediate aftermath of independence, the two main political forces were facing each other and implemented quite different political projects when they successively came to power.

The 1970's remained as the "kalabule" years, which refers to the variety of petty informal activities that the population had to devote to in times of economic anarchy (Chavagneux 1997). On the political level, military governments and coups attempts

succeeded one another, until a last coup was successfully held by Flight Lieutenant Jerry Rawlings in 1979. He remained 112 days in power, just the time necessary to enforce a "house cleaning exercise" (restoring state authority through symbolic and sometimes violent decisions like executing the former military chiefs) and organize elections. Hilla Limann, a "Northerner" who professed to represent the inheritance of Nkrumah's CPP, became President but rapidly faced social unrest and discontent. In 1981 Rawlings came back at the head of the State as the power was almost left vacant.

Jerry Rawlings does not fall into one of the two political categories that we mentioned above. His presidency thus introduced some modifications in the two-party system but did not abolish it, quite the contrary. Rawlings tried (and eventually succeeded) to diminish the influence of the nkrumahist forces and integrate them in his own camp. The movements of young partisans who claimed their faithfulness to Kwame Nkrumah represented a threat for Rawlings, for they surely would oppose his project to carry on an economic adjustment under the supervision of the IMF and the World Bank. And yet this adjustment was deemed absolutely necessary to get off the economic crisis and have access to international aid flows. In the early years of his presidency, Rawlings made gestures of goodwill towards these revolutionary forces by creating People' and Worker's Defence Committees seemingly designed to enforce the revolution. Thereby he kept control on these potentially threatening activists. By determinedly imposing the economic adjustment during the 1980s, Rawlings sidelined nkrumahists.

In the opposition between nkrumahism and the Busia/Danquah tradition, nkrumahism was thus progressively replaced by Rawlings and his heirs. This activated the rivalry between Ashanti and Ewe, this latter group being strongly supportive of its member Jerry Rawlings, while Ashanti and to a larger extent Akan remained resolute opponents. But since these two conflicting main parties at least agreed upon the broad macroeconomic strategy (adjustment and international openness), nkrumahist movements represented a radical criticism of this system and progressively became protest parties under the Fourth Republic.

3.1.2 Political developments under the Fourth Republic

In 1992, a new constitution was adopted by referendum. It lifted the ban on political parties and opened the way to a presidential election. Jerry Rawlings was candidate in the name of the National Democratic Congress (NDC). He was challenged by Professor Abdu Boahen from the New Patriotic Party (NPP) which represents the follow up of the NLM as the heir of the Busia/Danquah tradition. The nkrumahist side was much divided between several parties and presented three candidates to this election, among whom former President Hilla Limann. To oppose Rawlings who benefited from his incumbent position, Limann paradoxically reached an agreement with Boahen, i.e. with the political party to which nkrumahists were the traditional opponents. This may have accelerated the loss of credibility and influence of nkrumahists on the Ghanaian political field (Chavagneux 1997).

Rawlings largely won the 1992 elections, at the first round (see Table 3.1). He benefited from a large support by the political elite for his adjustment and democratic policy. The opposition was severely beaten, and some of its partisans in Ashanti region began to commit violence. Traditional Ashanti chiefs appealed to appeasement. Although the poll was said "free and fair", the opposition boycotted the parliamentary election that immediately succeeded and denounced a "stolen verdict". In this 1992 presidential election, nkrumahists were severely defeated.

	1992			1996			2000			2004	
Rawlings	NDC	58%	Rawlings	NDC	57%	Kufuor	NPP	48%	Kufuor	NPP	52%
Boahen	NPP	30%	Kufuor	NPP	40%	Atta-Mills	NDC	45%	Atta-Mills	NDC	45%
Limann	PNC	7%	Mahama	PNC	3%	Mahama	PNC	2.5%	Mahama	PNC	2%
Darko	NIP	3%				Hagan	CPP	2%	Aggudey	CPP	1%
Erskine	PHP	2%				Tanoh	NRP	1%			
						Lartey	GCPP	1%			
						Brobby	UGM	0.5%			
						2nd Round					
						Kufuor	NPP	57%			
						Atta-Mills	NDC	43%			

Table 3.1: Results of the 1992, 1996, 2000 and 2004 presidential elections

The 1996 scrutiny saw the confirmation of the two-party system and the decline of nkrumahist parties. In spite of their effort to present a unique candidate, they could only

gather 3% of the votes and most of their activists joined the NPP in the already mentioned paradoxical alliance to defeat Rawlings. But 1996 also saw the consolidation of democracy. Although the opposition was almost as severely beaten as four years earlier, it did not boycott the parliamentary elections that took place right after. Besides, the logistical aspects of the elections were much better organized than in 1992. Overall, 1996 was a time of deepening democracy and two-party system (Nugent 1999). The 2000 elections perpetuated and intensified it, although the acrimony between the two competing parties was intense and ethnic hype was "at its worst" (Frempong 2007). In 2000, for the first time in the Fourth Republic, power shift from NDC to NPP peacefully, which may be considered as the sign of an accomplished democracy. This peaceful changeover of political power in 2000 anchored democracy in the Ghanaian reality and in the consciousness of citizens: in 2002, a clear majority of Ghanaians perceive their political regime as fully democratic or democratic with only minor problems (Gyimah-Boadi and Mensah 2003).

In this paper we will focus on the 2004 presidential election. This election brought together outgoing President John Kufuor, representing the NPP, and opponent John Atta-Mills from NDC. The NPP represents the rather conservative Busia/Danquah tradition in Ghanaian politics. It took the succession of the NLM. Its natural support are the middle or upper class, educated people and pro-business circles. On the other hand the NDC traditionally represents a more leftist pro-poor tradition, although it shares with the NPP the conviction that economic adjustment and international openness are vital. This economic opposition was sharpened during the 2004 presidential campaign, mainly on the initiative of the NDC which opposed its vision of a "social democracy" in the interest of the people to the so-called "owner democracy" it accused the NPP to impose (Nugent 2005). We call this first opposition an economic opposition. It may be one of the motives for voters to chose between the two parties.

A second opposition is the ethnic one: while the NPP represents the Akan tradition and is mostly supported by the heart of Ashanti regions, the NDC gathers supports from the Northern regions and from the Volta region where non-Akan people are a majority. This ethnic cleavage is likely to have played a role during this 2004 election, since the political

campaign partly revolved around such themes. The NDC denounced the relationship between the King of Ashanti (the *asantehene*) and stoked fears among non-Ashanti that John Kufuor would enthrone the *asantehene* as king of Ghana. Moreover, the NDC tried to capitalize on the resentment felt by populations in the North after the NPP administration seemed to meddle in a long-lasting violent succession crisis in the Dagbon kingdom and did not prevent the beheading of the King and the massacre of dozens of members of his clan. This ethnic opposition between Akan and non-Akan could thus well be a second possible driver for voters in the 2004 election.

Last, the issues at stake in the campaign included the judgement that Ghanaians would have on the achievements and failures of the Kufuor administration since 2000. Two main features stand out. First, Ghana experienced a rapid growth episode during these years with a real GDP increasing yearly by more than 5%, leading to a decrease in measured poverty (Aryeetey and Kanbur 2006). Ghana benefited from massive debt reductions in the frame of the HIPC initiative, of which it reached the decision (starting) point in 2002 and the completion point in 2004. This may be put to the credit of the incumbent administration and to the outgoing president, John Kufuor. Although a serious problem remained in urban areas with high and enduring unemployment rates (Nugent 2005), the outgoing president put forward this good economic achievement as one of the main reasons for him asking voters to renew his mandate. But a second element is the poisonous atmosphere created by a number of corruption cases that undermined the reputation of the government. The NDC led a very tough and somewhat slanderous campaign against corruption affairs in the NPP party, like NPP ministers having built luxurious mansions they could not afford on the only basis of their official salary. The NDC also denounced and blew up cases of unclear financing sources for the NPP. These two main elements are possible drivers for a positive or negative evaluation vote by the Ghanaian citizens.

We thus see that the setting of the 2004 presidential election opens the way to both ethnic and non-ethnic voting.

3.2 Data and method

Our study relies on an original compilation of several datasets that we match at the district level. This provides an important amount of information on the demographical, social and economic situation of every district. The lack of such accurate data may account for the rather weak results obtained by previous studies. In this section, we first present the electoral data that we use, then the social, economic and demographic data. We finally present the method implemented and discuss the multicollinearity problems that we might face in this study.

3.2.1 Electoral data

We first collected a set of electoral results on seven major national polls between 1992 and 2004 in Ghana: the 1992 presidential elections and the 1996, 2000 and 2004 presidential and parliamentary elections. These results are available at the constituency level.

Ghana used to be divided into 200 constituencies until the 2000 presidential and parliamentary polls. In 2004, a reform divided and rearranged the electoral map up to 230 constituencies. This change of boundaries does not impact our matching: since all socio-economic variables are only available at the district level, we aggregate the constituency data by simply summing them at the district level. This is made possible by the fact that every constituency (both before and after the boundary changes) is strictly included in a district.

For each of these polls, we know how many voters were registered, how many actually cast a ballot, how many of these votes were deemed valid, how many votes each of the candidates obtained as well as the party they represented - and of course who was eventually elected.

But in this paper we do not use all these electoral data. First, since all other variables used in our empirical strategy are drawn from the Census held in 2000 and a national survey held in 2003, the only electoral results that may be accounted for are those of 2004. But we will also use the 2000 results as a point of comparison and seek the determinants of the evolution of votes between these two polls. Second, in this paper we will concentrate

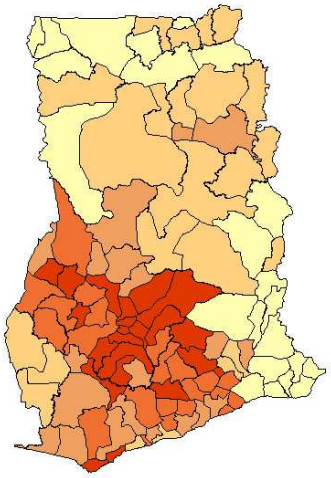


Figure 3.1: Vote for the NPP in 2000

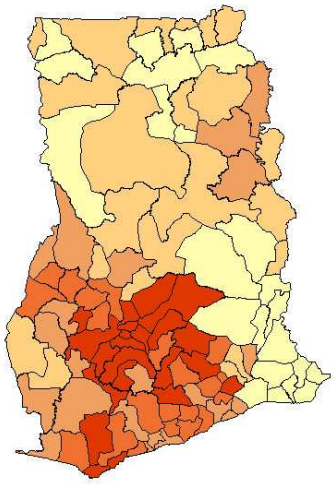


Figure 3.2: Vote for the NPP in 2004

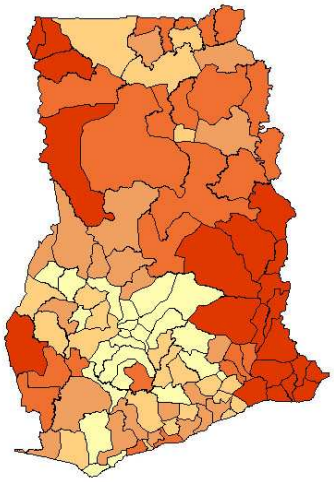


Figure 3.3: Vote for NDC in 2000

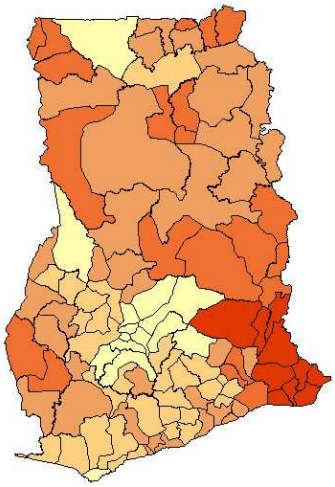


Figure 3.4: Vote for the NDC in 2004

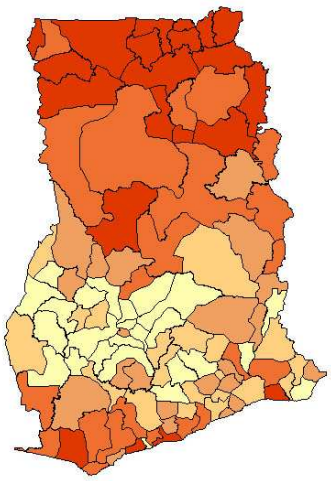


Figure 3.5: Vote for Nkrumahists in 2000

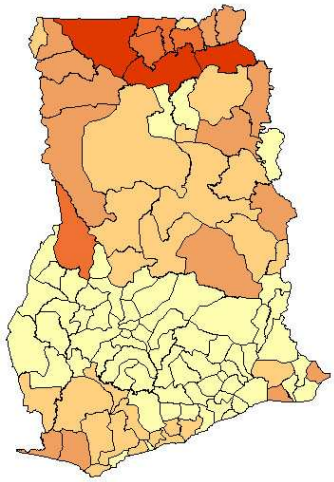


Figure 3.6: Vote for Nkrumahists in 2004

on the determinants of vote to the presidential election, the institutions and the political preeminence of presidential elections (held just before the parliamentary ones, that are generally just a confirmation of the choice) making Ghanaian regime a presidential one. The analysis of parliamentary results are left for further research. The pattern of votes in 2000 and 2004 presidential elections are presented in Figures 3.1 to 3.6.

3.2.2 Social, economic and demographic data

Along with electoral data, we use social, economic and demographical data collected from three different sources: the 2003 Core Welfare Indicators Questionnaire (CWIQ) Survey, the 2000 Census and the 2000 Facility Census. The CWIQ survey is a nationally representative large sample household survey elaborated by the World Bank and carried out by the Ghana Statistical Service in 2003. It is a district-based probability sample that covered a total of 49,003 households (more than 210,000 individuals) nationwide, with 405 households (about 1000 individuals) drawn from each district, except for the metropolitan areas, where the numbers of households were as follows: Accra, 2,430; Kumasi, 1,620; Shama/Ahanta East, 1,215; Tema Municipal Area, 810. We use this survey to compute variables at the district level: occupational structure and average levels of expenditures in a variety of goods. The fair number of households in each district allows us to compute information on inequality and poverty such as Gini indicators, percentile ratios, or population under a certain poverty line. This survey also includes subjective questions on the degree of "happiness", sources of discontent and social cohesion.

These district-level results are completed by the regional paper reports of the 2000 Census Survey brought back from Accra. They provide cross-tabulations of some major socioeconomic dimensions for the whole population of every district, including education and the share of formal, informal and public sectors. The ethnic structure of each district is also drawn from there. We created a modality "Other Northern ethnic groups" that gathers the Mande, Gur and Grusi groups, each of which represent less than 4%. Most of this information at the district level is here used for the first time for the purpose of political analysis.

Variable	Source	Mean	St. Dev	Min	Max
Akan (%)	Census 2000	49.6	31.8	0.9	96.6
Mole (%)	Census 2000	16.4	25.2	0.2	96.4
Ewe (%)	Census 2000	12.5	20.7	0.0	92.7
Ga (%)	Census 2000	7.9	14.2	0.0	85.9
Other northern groups (%)	Census 2000	7.2	11.9	0.2	74.9
Guan (%)	Census 2000	4.3	8.7	0.0	51.7
Others (%)	Census 2000	2.1	3.4	0.0	21.0
Uneducated (%)	Census 2000	41.8	18.9	16.0	84.3
Primary education (%)	Census 2000	21.7	5.3	8.0	34.3
Middle education (%)	Census 2000	23.0	9.6	2.6	35.8
Secondary education or more (%)	Census 2000	13.5	7.6	3.9	29.9
Formal private sector (%)	Census 2000	15.3	6.1	3.9	27.5
Public sector (%)	Census 2000	7.7	4.0	1.7	18.2
Informal private sector (%)	Census 2000	77.0	9.4	58.8	94.2
Unemployed active workers (%)	CWIQ Survey 2003	10.3	9.1	0.5	54.7
Employed active workers (%)	CWIQ Survey 2003	73.3	10.7	28.6	92.6
Inactive workers (%)	CWIQ Survey 2003	16.4	4.3	6.9	33.6
Food exp.: Gini index	CWIQ Survey 2003	39.6	6.9	29.9	63.9
Food exp.: Share of the district in d10 (%)	CWIQ Survey 2003	8.4	13.7	0.0	69.6
Food exp.: Share of the district in d90 (%)	CWIQ Survey 2003	12.0	9.6	0.2	34.3
Feeling happy (%)	CWIQ Survey 2003	60.2	13.3	24.4	94.8
Complain on immorality (%)	CWIQ Survey 2003	5.9	4.7	0.0	16.9
Find most people helpful (%)	CWIQ Survey 2003	43.1	19.6	10.3	95.8
Share of the 5 main cities (%)	Facility Census 2000	31.7	13.6	10.8	86.5
Distance to a post office (km)	Facility Census 2000	15.2	11.4	0.0	54.4

Note: Results are individual level data aggregated up to the district level. Means and standard deviations are weighted by the population of each of the 110 district to be nationally representative.
Alternative modalities not used in the regressions are in italics.

Table 3.2: Descriptive statistics for the main socio-economic variables

We also use information from the 2000 Facility Census that we obtained from the Ghana Statistical Service in Accra: this part of the 2000 Census gathers information on local amenities, public goods and equipment for the more than 70 000 localities of the country. The total population of each locality is provided, as well as information on the access to some basic amenities: the presence of (or distance to) such equipments as a post office, hospital or primary school is mentioned. We thus have indicators both on the level of urbanization of every district (the share of the population which lives in cities for example) and on access to public goods. In dualist countries like Ghana, the level of urbanity may play a key role in structuring the political field. Likewise, as it derives from the policies implemented by central or local authorities, the availability of public goods or lack thereof might determine the opinion of citizens about the incumbent party.

Descriptive statistics on the variables used in the remainder of the paper are provided in Table 3.2. They all include 110 observations corresponding to the 110 districts, and come from three different sources. Results show how heterogenous the 110 districts are. Differences between the minimum and the maximum of each variable are very large, which corresponds to the gap between urban populous areas and rural ones, the coast in the South and arid landscapes in the North, the heart of Akan territories and the Ewe regions. This variance is necessary to identify properly the impact of these social and economic variables on the pattern of votes.

3.2.3 Methodological issues

We presented a framework in which Ghana is divided into two ethnic groups, Akan and non-Akan, and politics in Ghana is divided into two traditions, a conservative one and a more progressive one, which correspond to a class cleavage. Two parties compete, each of which broadly represents one political profile and one ethnic group: put in a very rough way, the NPP represents Akan and the rich, the NDC represents non-Akan and the poor. At the level of the political supply, the ethnic and economic divisions overlap. If it was the same in the population, we would have two groups and the outcome of elections would always reflect the weight of each of these two groups. It would be impossible to know which of the motives is the main driver for voters to make their choice, and this question would anyway have little sense. But if the ethnic and class cleavages do not exactly correspond to each other, then changes in political majorities are possible and we may try to determine which of the two possible drivers prevails.

The first empirical pre-requisite for our study to be feasible is thus that the ethnic factor and the socio-economic factor do not present a too high correlation. We would indeed be unable to say anything if high shares of Akan were always associated with, say, wealthier or more educated districts on average, the districts with the weakest shares of Akan being the ones left behind. To check for this possibility, we first break up our sample into sub-samples determined by the shares of Akan in the population and compute the same descriptive statistics as in Table 3.2.

Share of Akan (%)	[0;20[	[20;40[	[40;60[	[60;80[	[80;100[
Number of districts	41	6	8	32	23
Uneducated (%)	64.0	41.7	22.7	35.6	35.0
Formal private sector (%)	13.1	11.6	21.8	14.7	14.5
Unemployed active workers (%)	14.7	6.7	13.1	7.3	6.7
Food exp.: Gini index	45.2	37.8	33.6	39.2	37.5
Food exp.: Share of the district in d10 (%)	21.4	3.9	1.7	4.1	2.1
Food exp.: Share of the district in d90 (%)	5.5	8.1	26.9	9.9	12.7
Feeling happy (%)	61.3	50.0	56.7	62.3	60.5
Complain on immorality (%)	4.3	4.1	9.3	6.5	4.7
Find most people helpful (%)	58.8	34.2	37.1	38.1	34.0
Share of the 5 main cities (%)	28.7	39.9	33.0	30.5	35.3
Distance to a post office (km)	22.8	15.8	5.6	14.2	13.5

Table 3.3: Descriptive statistics by share of Akan

We may first notice that the share of Akan presents a quite polarized geographical distribution, with only 14 districts having an Akan population between 20 and 60% of the overall population. 41 districts are below 20%, the rest (55) having a vast majority of Akan. The results presented in Table 3.3 show that these different districts classes present similar profiles on average, except for the first class and the third class to which the two major cities of the country (Accra and Kumasi) belong. The share of uneducated population is significantly higher in the first class and lower in the third. The availability of public goods, as documented by the distance to the nearest post office, follows the same pattern. The first class also stands out as having the largest share of its population included in the poorest 10% and the weakest share being among the richest 10%, while the group of the two capitals has more than a quarter of its population in this last national decile. The share of formal sector is much higher in this group as well. Our robustness checks in section 3.6 will assess the sensitivity of our results to these specificities. The four other classes present a homogenous profile on average with respect to our explanatory variables. Since a given share of Akan is not always associated with given socioeconomic characteristics, we should be able to disentangle the effects of the ethnic dimension and the other variables.

The aim of this paper is to regress the political behavior of a district (turnout and vote results) on a set of characteristics, some related with ethnicity, some related with social and economic conditions. A major concern with the "ecological" studies like this paper is the

possible multicollinearity between explanatory variables. Since most of the variables we introduce in our regressions describe aspects of a same reality (say the level of development of each district), these variables are likely to form coherent sets of characteristics (wealth, public goods, education) that could make them correlated. This may all the more be an issue as using district-level data makes the sample size rather limited, so that we might not be able to properly disentangle the effects of our variables. This may lead to biased estimators or underestimated standard errors.

In order to investigate this multicollinearity issue, we compute the classical Variance Inflation Factor (VIF). The share of the variance unexplained after regressing each of the explanatory variables on the others is called the tolerance index for this variable. The VIF index is the inverse of this tolerance index. It it straightforward that the more explanatory variables are introduced in a model, the higher the VIF. We compute these indicators on the largest set of variables we will use. It is thus an upper bound for the multicollinearity we will face in the econometric models.

	VIF	Tolerance (1/VIF)
Akan (%)	2.13	0.47
Uneducated (%)	4.60	0.22
Formal private sector (%)	3.19	0.31
Unemployed active workers (%)	2.53	0.39
Food exp.: Gini index	3.50	0.29
Food exp.: Share of the district in d10 (%)	4.52	0.22
Food exp.: Share of the district in d90 (%)	2.23	0.45
Feeling happy (%)	1.35	0.74
Complain on immorality (%)	1.81	0.55
Find most people helpful (%)	1.65	0.60
Share of the 5 main cities (%)	1.20	0.84
Distance to a post office (km)	2.67	0.38

Table 3.4: Indices of multicollinearity

It is generally admitted that multicollinearity is a matter of concern when the VIF indicator exceeds 5 (some papers also retain 10 as a relevant threshold), ie. when more than 80% of the variance of a given variable is accounted by a linear combination of the others. As shown in Table 3.4, the variables used in the general model do not fall in this case, although the correlation between the share of uneducated people and the other variables may be considered as worrying. We will take this matter of concern into account

when coming to the robustness checks in section 3.6, by dropping the variables which have the highest VIF.

3.3 Estimating the results of the 2004 presidential election

3.3.1 Confronting general, ethnic and non-ethnic models

The NPP and NDC scored a total of 97% in the 2004 presidential election. We may thus consider that the results for one of the two parties almost determines the results of the other, so that we may only estimate one of the two results to have a (almost) complete picture of this election. This is why we focus on the vote for the incumbent and ultimately winning NPP candidate, John Kufuor. But in section 3.3.2 we will also pay attention to the determinants of voting for the two other political groups, the NDC and the Nkrumahists.

We begin this analysis by simply seeking which are the determinants of the voting pattern in the 2004 presidential election. Our econometric model is the following:

$$y_{j2004} = \alpha\theta_j + \beta U_j + \gamma V_j + \epsilon_j$$

where y_{j2004} is the share of votes obtained by the NPP in district j in 2004, θ_j is the ethnic composition of the district, U_j is a vector of non-ethnic characteristics of the district population (level of education, occupational structure, wealth, subjective well-being) and V_j a vector of characteristics of the district (public goods, urbanity). If ethnic voting is an overwhelming determinant, we should have α highly significant while β and γ would be non significant. Adding non-ethnic variables would hardly improve the share of variance explained.

Besides this general model, we estimate an ethnic model and a non-ethnic model, both of them being nested in the general model. The ethnic model is obtained with $\beta = \gamma = 0$ while the non-ethnic model is obtained when $\alpha = 0$.

The NPP represents the Busia/Danquah tradition which is closely related to the Akan people. The geographical patterns of votes clearly reveal it: Figures 3.1 and 3.2 show that the highest scores were obtained by the NPP (more precisely by its candidate John Kufuor, himself an Ashanti) in Ashanti region. The share of Akan (of which Ashanti form a sub-group) could thus play a role in explaining the votes - we show in section 3.6 that taking Ashanti rather than Akan does not affect our results. But as we also explained, the NPP represents the rather conservative wing of Ghanaian politics. Its traditional supports are to be found among the educated well-off citizens who are economically and socially integrated, while NDC tried to gather the votes of people who feel left behind. These two dimensions are confronted in the regressions presented in the first three columns of Table 3.5.

The first striking results is that ethnicity has a very strong effect on the patterns of votes (first three columns). When the share of Akan is introduced alone in the regression (column 2), it accounts for almost 70% of the variance of the share of votes for the NPP. The coefficient has the expected positive sign. But this effect does not rule out the role of socio-economic variables, which by themselves account for 55% of the NPP vote pattern (column 3). When these two dimensions are added (column 1), the R-squared raises to about 80%, revealing a strong predicting power of our general model. The fact that the coefficient of the share of Akan slightly decreases when the other variables are introduced in the model shows that there is some collinearity but its magnitude seems to remain low.

The political picture drawn by these estimations deserves comments. After having controlled for the ethnic dimension (ie. in the general model), the social and economic variables that positively drive the vote for NPP are the share of formal sector, the share of educated people and the feeling of happiness. The first two dimensions are classical indicators of the level of development of a district. The latter subjective variable tends to confirm that voting for the NPP reveals a conservative attitude, but it may also be related to the fact that John Kufuor was the outgoing President. Regardless of the positions he or his party defended during the campaign - conservative or not -, general satisfaction is

	Depending variable: share of votes for the NPP			Depending variable: turnout rate		
	(1)	(2)	(3)	(4)	(5)	(6)
Akan (%)	0.47***	0.52***		-0.00	0.02	
	(0.04)	(0.03)		(0.02)	(0.01)	
Formal sector (%)	0.61**		0.52	0.07		0.07
	(0.25)		(0.38)	(0.10)		(0.10)
Uneducated (%)	-0.45***		-1.01***	-0.05		-0.05
	(0.10)		(0.13)	(0.04)		(0.03)
Unemployed (%)	0.03		-0.03	-0.17***		-0.17***
	(0.16)		(0.25)	(0.06)		(0.06)
Food exp.: Share of the district in d10 (%)	0.24*		-0.10	0.01		0.01
	(0.14)		(0.21)	(0.06)		(0.06)
Food exp.: Share of the district in d90 (%)	-0.17		-0.60***	-0.08		-0.08*
	(0.13)		(0.18)	(0.05)		(0.05)
Food exp.: Gini	0.18		0.76**	0.02		0.02
	(0.24)		(0.36)	(0.10)		(0.09)
Share of the population in the five biggest cities (%)	0.02		-0.05	-0.00		-0.00
	(0.07)		(0.10)	(0.03)		(0.03)
Distance to the nearest post office (km)	0.00		0.00	-0.00**		-0.00**
	(0.00)		(0.00)	(0.00)		(0.00)
Feels happy (%)	0.17**		0.39***	0.01		0.01
	(0.08)		(0.11)	(0.03)		(0.03)
Complains on immorality	-0.03		-0.36	0.13		0.13
	(0.24)		(0.36)	(0.10)		(0.10)
Finds most people helpful	0.07		-0.08	0.08***		0.08***
	(0.06)		(0.08)	(0.02)		(0.02)
Observations	110	110	110	110	110	110
R-squared	0.80	0.69	0.55	0.30	0.02	0.30

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.5: General, ethnic and non-ethnic models for NPP votes and turnout

likely to be put to his credit and increase the share of citizens who wish he carries on the job.

An other variable enters positively though less significantly in the general model: the share of people in the district who belong to the poorest 10% at the national level, *i.e.* a measure of the incidence of poverty. It may be considered paradoxical given the political platform that the NPP put forward, or more exactly given the pro-poor platform that the opposing party NDC tried to embody. But it may appear as the results of an evaluative vote, for growth in Ghana allowed significant poverty alleviation during the years previous to the poll.

We also tried to introduce non-linear effects, like a quadratic function of the share of

Akan or interaction terms between the ethnic dimension and non-ethnic variables. None of the results obtained is significant. We thus keep the purely linear model.

An other important determinant of election outcomes is the level of participation in the vote. The differences in political mobilization among groups may be critical. Turnout may first be determined by the social and economic conditions of voters. The level of education and the remoteness of the residence areas are examples of determinants of participation. But it may also be that the participation is mostly determined by ethnic identities, if some groups are more prone to defend their interests or feel closer to the national political field. We thus try to account for the level or turnout that was observed in the Ghanaian districts during the 2004 presidential election. Results are displayed in the last three columns of Table 3.5.

Ethnicity appears to play no significant role, event without controlling for the other variables. The key determinants of turnout in a district are the level of unemployment (plays negatively), the average distance to the nearest post office (plays negatively) and the share of the population that finds most people helpful (as opposed to looking out for themselves - plays positively). Although we cannot assert that unemployed participate less in the vote (this would typically be an ecological fallacy), but only that districts where unemployment is high participate less on average, the role played by the unemployment variable suggests that political participation is eased by economic and social integration. This is an even more general result than the one already established that participating in civil society activities increases the propensity to vote (see Brady, Verba, and Schlozman (1995) or Bratton (1999) on Zambia). The effect of the average distance to the nearest post office underlines the logistical component of turnout, while also capturing the subjective implication of citizens in the political issues, of which remoteness might be deterrent. Finally, the impact of the share of people who find others helpful suggests that the level of trust and social cohesion at the local level plays a role, which confirms results obtained for example in the US (Knack and Kropf 1998) or India (Krishna 2002). This is in line with numerous economic studies that present trust as a determinant of collective influence and political claim. We tried to see if ethnic heterogeneity is a determinant of this level of

trust and/or of participation, as is documented in other contexts (Alesina and La Ferrara 2000b), (Miguel 2006), and computed local indicators of ethnic fractionalization. But we do not find any significant effect, although the sign is negative as expected (results not shown).

	Share of votes for the NPP		**Turnout rate**	
	(1)	(2)	(3)	(4)
Akan (%)	0.38***		-0.00	
	(0.04)		(0.01)	
Formal sector (%)		0.61**		0.07
		(0.25)		(0.10)
Uneducated (%)		-0.45***		-0.05
		(0.10)		(0.04)
Unemployed (%)		0.03		-0.17***
		(0.16)		(0.06)
Food exp.: Share of the		0.24*		0.01
district in d10 (%)		(0.14)		(0.06)
Food exp.: Share of the		-0.17		-0.08
district in d90 (%)		(0.13)		(0.05)
Food exp.: Gini		0.18		0.02
		(0.24)		(0.10)
Share of the population		0.02		-0.00
in the five biggest cities (%)		(0.07)		(0.03)
Distance to the nearest		0.00		-0.00**
post office (km)		(0.00)		(0.00)
Feels happy (%)		0.17**		0.01
		(0.08)		(0.03)
Complains on immorality		-0.03		0.13
		(0.24)		(0.10)
Finds most people helpful		0.07		0.08***
		(0.06)		(0.02)
$\widehat{\text{Vote}}_{\text{NPP, non-eth}}$ (%)	0.47***			
	(0.09)			
$\widehat{\text{Vote}}_{\text{NPP, eth}}$ (%)		0.89***		
		(0.08)		
$\widehat{\text{Turnout}}_{\text{non-eth}}$ (%)			1.00***	
			(0.15)	
$\widehat{\text{Turnout}}_{\text{eth}}$				-0.03
				(0.91)
Observations	110	110	110	110
R-squared	0.75	0.80	0.30	0.30

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*),95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.6: J-tests of the ethnic vs. non-ethnic model

We now try to determine which of the two models (ethnic or non-ethnic) best explains

the pattern of votes. The two models are non-nested, so that we can use the J-test as suggested by Davidson and McKinnon (1981) and used for example by Collier and Hoeffler (2004). The J-test is based on an artificial nesting procedure. We first calculate the reconstructed shares of votes for the NPP by our two models, and obtain $\widehat{\text{Y}}_{\text{eth}}$, $\widehat{\text{Y}}_{\text{non-eth}}$. We then add these reconstructed values to the alternative models and regress $y_{j2004} = f(\text{ethnic}, \widehat{\text{Y}}_{\text{non-eth}})$ and $y_{j2004} = f(\text{non-ethnic}, \widehat{\text{Y}}_{\text{eth}})$. If, say, $\widehat{\text{Y}}_{\text{eth}}$ is significant in the non-ethnic model and $\widehat{\text{Y}}_{\text{non-eth}}$ is not significant in the ethnic model, we reject the non-ethnic model in favor of the ethnic model.

Table 3.6 shows that we cannot reject any model in favor of the other to explain the share of vote for the NPP. Values predicted by each model turn out to be significant in the alternative model. We thus stick to the share of variance explained by each of the two models as an indicator of which is the most powerful, and see that the ethnic model is slightly ahead. But we cannot reject the accuracy of the non-ethnic one. On the other hand, the J-tests lead to reject the ethnic model in favor of the non-ethnic one as far as turnout is concerned. The value reconstructed by the non-ethnic model is highly significant in the ethnic regression, whereas the contrary does not hold. In section 3.5 we will try to stack the two levels of estimation (turnout and party choice) and see which of the ethnic or non-ethnic models overall fits best to the actual results.

In order to enhance the parsimony of the model, reduce the collinearity and better identify the significant variables, we propose a reduced form of the three models. These were obtained through an automatic "drop the least significant" procedure until all variables are significant at the 90% threshold. Results are shown in Table 3.11 in Appendix. These restricted general models confirm that the effect of ethnicity is strong but does not rule out the impact of other non-ethnic variables on party affiliation, while ethnicity does not help to understand the level of turnout.

3.3.2 Votes for the NDC and the Nkrumahists

As we explained in section 3.1.2, the 2004 election brought together outgoing President John Kufuor, who represented the NPP, NDC candidate John Atta-Mills and two other

candidates: Edward Mahama for the PNC and George Aggudey for the CPP. These two candidates claimed their relation to nkrumahism. In our analysis, we add the results they obtained, for they pretty much represent the same political family and play the similar role of "anti-system outsider". Determinants of votes for the NDC and the Nkrumahists are displayed in Table 3.7.

	Share of votes for the NDC			**Share of votes for the Nkrumahist parties**		
	(1)	(2)	(3)	(4)	(5)	(6)
Akan (%)	-0.45***	-0.46***		-0.01	-0.06***	
	(0.04)	(0.04)		(0.02)	(0.02)	
Formal sector (%)	-0.80***		-0.71*	0.19		0.19
	(0.27)		(0.38)	(0.12)		(0.12)
Uneducated (%)	0.44***		0.98***	0.01		0.03
	(0.11)		(0.13)	(0.05)		(0.04)
Unemployed (%)	-0.19		-0.13	0.16**		0.16**
	(0.17)		(0.25)	(0.08)		(0.08)
Food exp.: Share of the district in d10 (%)	-0.31**		0.02	0.06		0.07
	(0.15)		(0.21)	(0.07)		(0.06)
Food exp.: Share of the district in d90 (%)	0.19		0.62***	-0.03		-0.01
	(0.13)		(0.18)	(0.06)		(0.06)
Food exp.: Gini	-0.41		-0.97***	0.23**		0.21*
	(0.26)		(0.36)	(0.11)		(0.11)
Share of the population in the five biggest cities (%)	-0.00		0.06	-0.02		-0.01
	(0.07)		(0.10)	(0.03)		(0.03)
Distance to the nearest post office (km)	-0.00*		-0.00	0.00		0.00
	(0.00)		(0.00)	(0.00)		(0.00)
Feels happy (%)	-0.15*		-0.36***	-0.03		-0.03
	(0.08)		(0.11)	(0.04)		(0.03)
Complains on immorality	0.19		0.51	-0.16		-0.15
	(0.26)		(0.37)	(0.11)		(0.11)
Finds most people helpful	-0.03		0.11	-0.04		-0.04
	(0.06)		(0.08)	(0.03)		(0.03)
Observations	110	110	110	110	110	110
R-squared	0.76	0.59	0.49	0.46	0.12	0.46

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.7: Models for the NDC and Nkrumahist votes

Not surprisingly, the pattern of votes for the NDC (columns 1 to 3) is quite symmetrical to the one obtained for NPP. This reflects the fact that the two-party system represents a tremendous share of votes, nkrumahist parties obviously failing to shake up this pattern. The negative sign and the high significance of the share of people in the first decile shows that the NDC failed in its attempt to attract the votes of the poor. The ethnic model

explains a higher share of the variance than the non-ethnic one.

But the vote for the nkrumahists, as low as it may be, seems to have a quite clear political meaning and may not be considered as a residual white noise on the margins of the two-party system. Quite the contrary, votes for these anti-system candidates appear to be driven by political concerns that push them to cast a protest vote. Ethnicity appears to very poorly explain the vote for the nkrumahists. Its coefficient is not significant in the general model, and its explaining power is low when economic variables are controlled for. The economic variables have the decisive effect on this protest vote: the level of inequality has the largest positive and significant effect, while the rate of unemployment ranks second. These results converge on the idea that votes for the nkrumahist parties are frequent in the most fragile part of the population in Ghana. People who are (either themselves or people close to them) excluded from the labor market and who witness a high level of inequalities are prone to vote for these candidates. This makes the determinants of voting for the nkrumahist parties typically non ethnic. The economic and political explaining factors clearly and consistently dominate and account for 46% of the variance, ethnicity being of very little help to understand this vote.

The ethnic factor thus seems to have a strong influence on the structure of votes in the 2004 presidential election in Ghana. But it does not rule out the accuracy of economic factors to account for these results, and does not help to explain the turnout rate.

3.4 Assessing the evolution of votes and turnout

In the previous section, we saw that the ethnic model was slightly better than the non-ethnic one for explaining the general structure of votes in Ghana. But it is also important to try and explain what drives the evolution of votes in a district. It may well be that the structure of the results is determined by ethnicity, just as voting patterns in industrialized countries often present geographical regularities, but that the outcome of the election is determined by the deviation from this pattern in one sense or the other. The way votes may change marginally from an election to the next one may be decisive and these marginal changes may be driven by other determinants than those impacting the gross distribution

of votes. This is all the more important in countries like Ghana, where changeovers of power occurred in the past.

One can find it obvious that ethnicity does not play a role in the evolution of votes. If the ethnic composition of a district is stable between two elections, i.e. if we suppose that internal migration flows and differential population growth rates between ethnic groups do not imply significant evolutions of the shares of ethnic groups in a given district, any change in the election outcomes may only result from other determinants than the ethnic one. But this relies on the assumption that the political system is perfectly ascriptive. There would be no possible evolution in the political affiliation of ethnic groups, for example in the fact that being Akan prompts people to vote for the NPP. Yet a large share of literature on this topic underlines how politicians try to build alliances with such and such ethnic group, how a party may loose the support of a given group etc. (see the seminal work by Horowitz (1985)). The importance of differential mobilization is also put forward, with electoral campaigns keen to play the ethnic card and stimulate the support and participation of a given group.

If these strategies are decisive, ethnicity should also be the main factor behind the evolution of votes between two presidential elections. Politicians would try to increase the support of ethnic groups that lacked them and raise the turnout level among his supporters. Campaign would revolve around ethnic rivalries or splitting themes, and the ethnic factor would appear key for the evolution.

We thus now try to explain the evolution in the share of votes obtained by the NPP between two elections. We would have liked to estimate a model in difference:

$$\Delta y_j = \alpha X_j + \beta \Delta X_j + \epsilon_j$$

where $\Delta y_j = y_{j,2004} - y_{j,2000}$ and $\Delta X_j = X_{j,2004} - X_{j,2000}$. But the right-hand side variables, which include the ethnic and non-ethnic determinants, are only observed at one point in the time, so that we can only estimate $\Delta y_j = \alpha X_j + \epsilon_j$. However, the very limited variation that one could expect in such a short period of time makes it likely that β is null. The effect we capture here is thus an effect of the mobilization of groups, which may increase

or decrease their support in response to political campaigning or the appreciation they make of the candidates involved.

We thus estimate the same model as in the previous section, except that the depending variable is now $\Delta y_j = y_{j,2004} - y_{j,2000}$. Table 3.8 shows the results.

	Evolution in the share of votes for the NPP			**Evolution in the turnout rate**		
	(1)	(2)	(3)	(4)	(5)	(6)
Akan (%)	0.02	-0.03		-0.02	-0.01	
	(0.02)	(0.02)		(0.02)	(0.01)	
Formal sector (%)	-0.13		-0.14	-0.07		-0.07
	(0.13)		(0.13)	(0.10)		(0.10)
Uneducated (%)	0.07		0.04	0.05		0.07*
	(0.05)		(0.05)	(0.04)		(0.04)
Unemployed (%)	0.09		0.08	-0.13*		-0.13*
	(0.09)		(0.09)	(0.07)		(0.07)
Food exp.: Share of the district in d10 (%)	0.16**		0.15**	-0.05		-0.03
	(0.08)		(0.07)	(0.06)		(0.06)
Food exp.: Share of the district in d90 (%)	0.08		0.06	-0.02		-0.00
	(0.07)		(0.06)	(0.05)		(0.05)
Food exp.: Gini	-0.08		-0.05	0.00		-0.02
	(0.13)		(0.12)	(0.10)		(0.10)
Share of the population in the five biggest cities (%)	-0.07**		-0.08**	-0.08***		-0.08***
	(0.04)		(0.04)	(0.03)		(0.03)
Distance to the nearest post office (km)	0.00		0.00	-0.00		-0.00
	(0.00)		(0.00)	(0.00)		(0.00)
Feels happy (%)	0.00		0.01	-0.07**		-0.08**
	(0.04)		(0.04)	(0.03)		(0.03)
Complains on immorality	-0.75***		-0.77***	0.43***		0.44***
	(0.13)		(0.13)	(0.10)		(0.10)
Finds most people helpful	-0.11***		-0.11***	0.04		0.05*
	(0.03)		(0.03)	(0.02)		(0.02)
Observations	110	110	110	110	110	110
R-squared	0.62	0.02	0.61	0.32	0.01	0.31

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.8: Models for the evolution of NPP vote and turnout

Our results show clearly that the ethnic factor is of very poor help when it comes to explaining the evolution of votes between two elections (columns 1 to 3). The coefficient is not significant even when the variable is introduced alone in the regression, and the R-squared of the ethnic model is very low. The non-ethnic model explains about 60% of the variance in voting evolutions. The NPP increased its scores in the poorest areas, which seems to confirm that the good economic results were put to the credit of the

incumbent while the opposing party did not manage to benefit from the discontent of the most disadvantaged sections of the population. This seems to be the main reason why John Kufuor increased its results from 48% of the votes in the first round of 2000 up to 52% in the first and only round of 2004. The NPP lost support in the most urbanized districts, where discontent about the economic policy was the highest. The share of people who quote items linked to immorality (corruption, reprehensible behaviors of politicians, violence...) as one of the main current problems has a strong negative impact on the results for the NPP. John Kufuor seems to have suffered from the tough campaign led by the NDC that denounced corruption in the incumbent party.

Similarly, the ethnic card that was played during the campaign does not seem to have had a differential impact on the political mobilization of different groups (columns 4 to 6). The evolution of turnout between the two polls was not affected by the ethnic composition of the groups. This evolution is rather determined by the fact that urban districts participated less than in 2000, which may have partly offset the fact that they voted less for the NPP. The districts where a large discontent exists on moral problems appear to have participated significantly more than others. Last, everything else being equal, districts where people feel happy have voted less. Kufuor may have reached an even better result if he had managed to stimulate the support of the ones who would have cast a positive evaluative vote on his action.

The J-tests (see Table 3.9) unambiguously lead to reject the ethnic model in favor of the non-ethnic one to account for the evolutions of both turnout and support to the NPP.

3.5 Election outcomes reconstructed by the two models

Our ethnic and non-ethnic models give us a set of results both on political choice and on participation. The ethnic model is superior in the structural analysis but does not rule out the accuracy of the non-ethnic one, while the turnout rate is much better explained by the non-ethnic model. In the analysis of the evolution of votes, the non-ethnic model gives much better results in the party choice regression and in the turnout regression. We now try to stack these results and provide a comparison of the predicted values they

	Evolution in the share of votes for the NPP		**Evolution in the turnout rate**	
	(1)	(2)	(3)	(4)
Akan (%)	0.01		-0.01	
	(0.01)		(0.01)	
Formal sector (%)		-0.13		-0.07
		(0.13)		(0.10)
Uneducated (%)		0.07		0.05
		(0.05)		(0.04)
Unemployed (%)		0.09		-0.13*
		(0.09)		(0.07)
Food exp.: Share of the		0.16**		-0.05
district in d10 (%)		(0.08)		(0.06)
Food exp.: Share of the		0.08		-0.02
district in d90 (%)		(0.07)		(0.05)
Food exp.: Gini		-0.08		0.00
		(0.13)		(0.10)
Share of the population		-0.07**		-0.08***
in the five biggest cities (%)		(0.04)		(0.03)
Distance to the nearest		0.00		-0.00
post office (km)		(0.00)		(0.00)
Feels happy (%)		0.00		-0.07**
		(0.04)		(0.03)
Complains on immorality		-0.75***		0.43***
		(0.13)		(0.10)
Finds most people helpful		-0.11***		0.04
		(0.03)		(0.02)
$\widehat{\Delta}_{\text{NPP, eco}}$	1.01***			
	(0.08)			
$\widehat{\Delta}_{\text{NPP, eth}}$		-0.58		
		(0.64)		
$\widehat{\Delta}_{\text{Turnout, eth}}$			0.99***	
			(0.14)	
$\widehat{\Delta}_{\text{Turnout, eth}}$				1.34
				(1.20)
Observations	110	110	110	110
R-squared	0.62	0.62	0.32	0.32

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.9: J-tests of the ethnic vs. non-ethnic model of evolution

generate. To do this, we simply compute the number of votes obtained by each party as predicted by the two different models, following the two different methods. To compute the results derived from, say, the ethnic model, we calculate the number of votes obtained by the NPP in each district as follows: $\hat{N}_{1\text{eth}} = \hat{y}_{i,\text{eth}} * \hat{t}_{\text{eth}} * N_{\text{registered}}$ for the first method, $\hat{N}_{2\text{eth}} = (y_{2000} + \hat{\Delta y}_{\text{eth}}) * (t_{2000} + \hat{\Delta t}_{\text{eth}}) * N_{\text{registered}}$ for the second one, $N_{\text{registered}}$ being

the number of people registered on the electoral roll in every district, $\hat{y}$ and $\hat{t}$ being respectively the predicted levels of vote for the NPP and turnout, and $\hat{\Delta}y$ and $\hat{\Delta}t$ their evolutions. Of course, $\hat{N_1}$ and $\hat{N_2}$ may not be properly called predictions in a strict sense, since our regressions were run on the 2004 results, so that our parameters are calibrated conditionally to the result. They are more reconstructions than predictions.

Since the OLS estimator is an unbiased estimator, the national turnout rate is perfectly reconstructed by the turnout regression and the national share of votes for the NPP is perfectly reconstructed by the party regression. So $\hat{N_1}$ and $\hat{N_2}$ only differ from the real number of votes N because the error terms of the two regressions cumulate when turnout rate and vote share multiply, but this does not provide any accurate information on the predicting power of our procedure. So we rather compute an absolute deviation measure by summing the absolute values of the differences by district between the number of votes reconstructed and the real number. The results are displayed in Table 3.10.

	$\hat{N}_{\text{gen}}$	$\hat{N}_{\text{eth}}$	$\hat{N}_{\text{eco}}$
$\sum j\lvert\hat{N}_{1,j} - N_j\rvert$	608 795	824 154	878 146
(structure method)	13.5%	18.2%	19.4%
$\sum j\lvert\hat{N}_{2,j} - N_j\rvert$	265 877	416 583	265 192
(evolution method)	5.8%	9.2%	5.8%

Table 3.10: Deviation of the reconstructed numbers of votes from the real numbers, according to the different methods

Results confirm the superiority of the ethnic model in the first method, although turnout was shown to be better reconstructed by the non-ethnic one. The ethnically reconstructed results deviate only by 18.2% whereas the results of the non-ethnic model are 1 percentage point worse. This illustrates the fact that the non-ethnic model is slightly poorer than the ethnic one for reconstructing the pattern of votes in the 2004 presidential election in Ghana. But the non-ethnic model is much more accurate to reconstruct the votes according to the second method, with almost 95% of the votes accurately predicted. The distribution of errors even makes the non-ethnic model slightly better than the general model, though it is a special case of the latter: overestimated shares of voices must be

offset by underestimated turnout rates, and vice-versa. Anyway, the accuracy of the non-ethnic model to reconstruct votes on the basis on their evolution from the previous poll appears clearly.

3.6 Robustness checks

The method employed in this paper and the limited number of observations make robustness checks necessary. Our preliminary investigation of multicollinearity problems in section 3.2.3 rose a first concern: the fact that some districts may have special characteristics that intertwine ethnicity and socioeconomic factors and may drive the results while making it impossible to disentangle the two possible factors. For example, if the districts with less than 20% Akan are the poorest and less educated, and all vote overwhelmingly against the NPP, they could determine our results and make the comparison between the ethnic and the non-ethnic model irrelevant. In order to check for this possibility, we re-run our regressions on different sub-samples of districts, and drop the observations that could have such a decisive effect. Results are presented in Appendix.

Tables 3.12 and 3.13 present the regression results on different sub-samples, one on the shares of votes and the other on their evolution. We first exclude the districts that have less than 20% Akan in their population, for they seem to have certain characteristics of their own (remind Table 3.3). We then do the same with the districts where Akan represent more than 80% of the population. Since we examine the evolution of votes, we also try to identify the "swing districts" as the ones where the NPP votes increased or decreased by more than 5 percentage points. Their voting behaviors may respond to peculiar incentives, which may be of crucial importance given the role they played in the general outcome. We also investigate the determinants of vote in districts where turnout rose especially fast.

Because of the gap between the Northern regions and the rest of the country (in terms of wealth, education, ethnic composition), we try to see if our results hold when these areas are excluded from the analysis. Because the Volta region (the Eastern part of the country) presents specific characteristics and is a stronghold of the NDC, we also try to

exclude it from the sample. Last, because of the importance of the rural-urban divide, we drop the districts of the two main cities of the country, and go further by excluding the districts with a population higher than 250 000.

These checks show that our results are very robust to these changes in the sample. The variables that stand out as the most significant to explain the share of votes for the NPP are the share of Akan, the share of uneducated people and the share of formal sector. Their significance holds in almost every sub-sample considered. The signs of the coefficients do not vary. The results on the share of population in the first decile are also robust but seem mainly driven by the opposition between the Northern regions and the two main cities of the country, for the variable loses its significance when these regions are withdrawn from the sample. This opposition also seems to overlap the role of the subjective happiness variable: this variable also loses its significance in the sub-samples that exclude Northern regions or the capitals.

The non significant role of the share of Akan for explaining the evolution of votes is also very robust. The only variable that appears key throughout the sub-samples is the share of people who feel concerned by morality issues like violence, corruption, which drags down the support to the NPP. It is even the only significant variable when the sample is restricted to districts where NPP strongly increased or decreased its results. But the other variables appear quite sensitive to changes in the sample. The share of poor is significant only in the general sample and when the capitals are dropped. The decrease in support from urban districts (share of the population in the five biggest cities) seems driven by the raising support of Northern regions, since this variable is no more significant when these regions are dropped. The share of formal sector appears in several sub-samples as significantly associated with a decrease in support for the NPP, which did not appear in the full sample. This may appear as a mechanical bouncing effect after pro-business sections of the population strongly supported John Kufuor in 2000.

Overall, the main finding appears robust (ethnicity having no incidence on the evolution of votes) but only few of the determinants appear robust across the sub-samples.

But maybe the non-significance of the ethnic variable only comes from the fact that

we did not choose the appropriate ethnic group. It may be that the evolution of votes for the NPP followed ethnic lines, but not the cleavage between Akan and non-Akan. To test for this possibility, we replace the share of Akan by the share of the six other groups and see whether they play a significant role. We also include the share of Ashanti, an Akan sub-group whose empire used to dominate most of current Ghana, and which remains the core of NPP strongholds. Table 3.14 in Appendix shows that most of these groups have no significance either, with the exception of the share of Mole (plays negatively) and the share of other Northern ethnic groups (Mande, Gur and Grusi, plays positively), these two variables having a poor significance. These variables may artificially hide the fact the the poorest districts increased their support to the incumbent candidate, since the Northern ethnic groups generally belong the the poorest sections of the population. But we try to see if these variables could play a more important role than the non-ethnic model to explain the evolution of votes for the NPP. The J-tests (see Table 3.15) show that it is not the case. The superiority of the non-ethnic model appears robust to changes in the ethnic group considered.

Last, we try to provide a robustness test for the potential multicollinearity problem between variables. In section 3.2.3 we saw that some variables have high VIF, *i.e.* they are close to a linear combination of the other variables. The three main variables for which this problem may exist are the share of uneducated people, the share of people in the first decile and the share of people who work in the formal sector. In Table 3.16 we drop these three variables one after another. If the multicollinearity was major, some of our results would change dramatically. They do not. Only the share of those who feel happy becomes non significant when the share of uneducated is dropped in the first method, and the share of unemployed becomes significant when the share of poor is dropped in the second method. But the signs, significance and magnitude of all other effects are quite stable across the different specifications.

3.7 Conclusion

In this paper we tried to investigate empirically the common view that in African democracies, political cleavages would follow ethnic cleavages and votes would be overwhelmingly determined by ethnicity. Ghana is an excellent example for such a story, since results of the two main parties are quite precisely located on the map, and their natural support is to be found among the two main rival groups of the country, Akan and Ewe. But these two parties also present quite different political platforms, one being more conservative and the other one being more poor-oriented. Moreover, one is the incumbent while the other at least tries to embody change.

Our empirical results indicate that ethnicity plays an important role in the structural pattern of voting distribution. But it does not rule out the effect of economic determinants, which account for a slightly lower share of the variance but may certainly not be ruled out. These determinants draw an informative picture of the political affiliations in the different sections of the population, as defined by the position on the job market, the fact to live in urban or rural areas or the level of education. Evaluative voting also exerts a significant effect: having benefited from good economic conditions increases the support for the incumbent candidate, while being upset by moral issues linked to politics encourages to vote for the opposing party.

Moreover, ethnicity stops being a decisive factor when we investigate the determinants of the evolution of votes between two elections. Evaluative votes relative to the political and economic context make the difference. The marginal increase or decrease in the support to a party is proven to be key, for Ghana experienced a changeover of political power very recently.

This work tends to show that it is necessary to have a balanced ethnic structure for non-ethnic determinants to play a role. Indeed, the fact that Akan represent about 50% of the population in Ghana makes it possible that marginal changes driven by non ethnic issues entail a shift in power. Would it be the case if the main group in a country represented 80% of the population? The example of Burkina Faso tends to invalidate it: Mossis form a vast majority and President Blaise Compaoré has been staying in power

for more than 20 years, although the political scene is very lively and segmented. But as Posner (2004b) or Miguel (2004) argue convincingly, the specific political and institutional contexts determine the ethnic cleavage that will end up being salient in the quest for power, every ethnic group being divided into a number of sub-groups that may form alliances to reach power. But this requires a genuinely democratic system and institutions that grant a balanced access to voice and empowerment. More than the ethnic structure, the fact that Ghana is much more fluid (Bossuroy and Cogneau 2008) and democratic than most of its neighbors may account for the open political field and even for the fact that the politically salient ethnic cleavage divides the country into two halves.

This work anyway contributes to rejecting a too naive grid of analysis on elections in Africa. The point is not to deny the fact that ethnicity plays a tremendous role. We even bring evidence on that. But the role of ethnicity is circumscribed and economic or political factors may constitute the nexus in the battle for power. In any democracy, even the more so-called "mature", non-economic issues may be emphasized such as regionalism, traditional identity or religion. But a well established democracy allows to circumscribe these effects and open the way to class or evaluative political voting. An African country like Ghana makes no exception to this rule.

3.8 Appendix

	Share of votes for the NPP	**Turnout**
Akan (%)	0.48***	
	(0.04)	
Formal sector (%)	0.39**	
	(0.17)	
Food exp.: Share of the district in d10 (%)	0.41***	
	(0.10)	
Uneducated (%)	-0.35***	
	(0.08)	
Feels happy (%)	0.19***	
	(0.07)	
Distance to the nearest post office (km)		-0.00***
		(0.00)
Finds most people helpful		0.08***
		(0.02)
Unemployed (%)		-0.17***
		(0.04)
Complains on immorality		0.17*
		(0.09)
Observations	110	110
R-squared	0.79	0.27

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.11: Restricted models of votes for the NPP and turnout

Depending variable: share of votes for the NPP	Districts with less than 20% Akan dropped	Districts with more than 80% Akan dropped	Only districts where NPP score increased/ decreased by more than 5 pct points	Only districts where turnout rose by more than 20 pct points	Northern regions (*) dropped	Northern regions (*) + Volta dropped	Accra and Kumasi districts dropped	Only districts with population less than 250 000
Akan (%)	0.34***	0.51***	0.39***	0.49***	0.47***	0.36***	0.47***	0.42***
	(0.07)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)	(0.04)	(0.05)
Formal sector (%)	0.59*	0.30	0.37	0.80**	0.56*	0.56*	0.58**	0.71**
	(0.34)	(0.31)	(0.32)	(0.31)	(0.29)	(0.31)	(0.26)	(0.28)
Uneducated (%)	-0.40**	-0.36***	-0.20*	-0.50***	-0.65***	-0.49***	-0.44***	-0.53***
	(0.19)	(0.11)	(0.11)	(0.12)	(0.10)	(0.17)	(0.10)	(0.11)
Unemployed (%)	-0.39	0.13	-0.09	-0.15	-0.43	-0.74*	0.05	-0.11
	(0.45)	(0.17)	(0.18)	(0.26)	(0.39)	(0.43)	(0.17)	(0.19)
Food exp.: Share of the district in d10 (%)	0.04	0.38**	0.34*	0.38**	-0.34	-0.41	0.20	0.28*
	(0.41)	(0.15)	(0.18)	(0.18)	(0.31)	(0.46)	(0.15)	(0.16)
Food exp.: Share of the district in d90 (%)	-0.35**	-0.06	-0.14	-0.11	-0.26**	-0.32**	-0.17	0.06
	(0.15)	(0.16)	(0.20)	(0.15)	(0.13)	(0.13)	(0.17)	(0.20)
Food exp.: Gini	0.30	-0.04	-0.12	-0.01	0.51*	0.55*	0.20	0.11
	(0.32)	(0.26)	(0.30)	(0.30)	(0.28)	(0.32)	(0.24)	(0.25)
Share of the population in the five biggest cities (%)	-0.01	0.10	0.13	0.02	-0.02	-0.02	0.09	0.05
	(0.07)	(0.08)	(0.13)	(0.09)	(0.07)	(0.07)	(0.09)	(0.09)
Distance to the nearest post office (km)	-0.00	0.00	0.00	0.00	-0.00	-0.00	0.00*	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Feels happy (%)	0.11	0.15*	0.29**	0.18*	0.06	0.09	0.16**	0.21**
	(0.09)	(0.08)	(0.11)	(0.10)	(0.08)	(0.08)	(0.08)	(0.09)
Complains on immorality	-0.06	0.05	0.38	0.01	0.11	0.18	-0.22	-0.12
	(0.34)	(0.28)	(0.30)	(0.31)	(0.32)	(0.32)	(0.29)	(0.38)
Finds most people helpful	0.12	-0.00	-0.15	0.14*	0.12**	0.13*	0.09	0.13**
	(0.07)	(0.07)	(0.11)	(0.07)	(0.06)	(0.07)	(0.06)	(0.06)
Observations	69	87	65	76	86	74	108	103
R-squared	0.62	0.81	0.79	0.84	0.84	0.72	0.78	0.78

OLS estimation, with constant. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels.
(*) Northern regions = Upper East, Upper West and Northern.

Table 3.12: General model of vote for the NPP tested on different sub-samples

Depending variable: evolution of votes for the NPP	Districts with less than 20% Akan dropped	Districts with more than 80% Akan dropped	Only districts where NPP score increased/ decreased by more than 5 pct points	Only districts where turnout rose by more than 20 pct points	Northern regions (*) dropped	Northern regions (*) + Volta dropped	Accra and Kumasi districts dropped	Only districts with population less than 250 000
Akan (%)	0.05	-0.03	0.03	0.03	0.03	0.03	0.02	0.01
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Formal sector (%)	-0.39**	0.12	-0.11	-0.26*	-0.36**	-0.44***	-0.12	0.00
	(0.16)	(0.15)	(0.18)	(0.14)	(0.14)	(0.14)	(0.13)	(0.14)
Uneducated (%)	0.09	-0.04	0.03	0.08	0.04	0.07	0.06	0.08
	(0.09)	(0.06)	(0.07)	(0.06)	(0.05)	(0.08)	(0.05)	(0.06)
Unemployed (%)	0.52**	0.03	0.14	0.27**	0.25	0.37*	0.08	0.16
	(0.21)	(0.08)	(0.10)	(0.12)	(0.18)	(0.20)	(0.09)	(0.10)
Food exp.: Share of the district in d10 (%)	0.12	0.09	0.16	0.09	0.12	-0.35	0.19**	0.13
	(0.20)	(0.07)	(0.10)	(0.08)	(0.15)	(0.21)	(0.08)	(0.08)
Food exp.: Share of the district in d90 (%)	0.09	-0.08	0.01	0.07	0.09	0.05	0.11	0.07
	(0.07)	(0.08)	(0.12)	(0.07)	(0.06)	(0.06)	(0.09)	(0.10)
Food exp.: Gini	-0.36**	0.06	0.11	0.01	-0.23*	-0.12	-0.09	-0.07
	(0.15)	(0.13)	(0.17)	(0.14)	(0.13)	(0.15)	(0.13)	(0.13)
Share of the population in the five biggest cities (%)	-0.05	-0.11***	-0.03	-0.15***	-0.05	-0.06*	-0.11**	-0.09**
	(0.03)	(0.04)	(0.07)	(0.04)	(0.03)	(0.03)	(0.05)	(0.05)
Distance to the nearest post office (km)	0.00	0.00**	-0.00	0.00	0.00*	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Feels happy (%)	0.02	0.01	0.04	-0.06	0.00	0.01	0.01	-0.01
	(0.04)	(0.04)	(0.06)	(0.05)	(0.04)	(0.04)	(0.04)	(0.05)
Complains on immorality (%)	-0.90***	-0.90***	-1.14***	-0.72***	-0.70***	-0.82***	-0.68***	-0.25
	(0.16)	(0.14)	(0.17)	(0.15)	(0.15)	(0.15)	(0.15)	(0.19)
Finds most people helpful (%)	-0.09**	-0.06*	-0.09	-0.11***	-0.07**	-0.08**	-0.11***	-0.11***
	(0.04)	(0.03)	(0.06)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	69	87	65	76	86	74	108	103
R-squared	0.69	0.70	0.77	0.72	0.61	0.68	0.53	0.38

OLS estimation, with constant. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels.
(*) Northern regions = Upper East, Upper West and Northern.

Table 3.13: General model of the evolution of vote for the NPP tested on different sub-samples

	Share of votes for the NPP						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Asante (%)	-0.04						
	(0.03)						
Mole (%)		-0.06*					
		(0.03)					
Ewe (%)			-0.02				
			(0.03)				
Ga (%)				0.02			
				(0.04)			
Other northern ethnic groups (%)					0.09*		
					(0.05)		
Guan (%)						0.01	
						(0.06)	
Others (%)							0.11
							(0.17)
Formal sector (%)	-0.10	-0.10	-0.14	-0.13	-0.12	-0.14	-0.13
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Uneducated (%)	0.02	0.07	0.06	0.05	0.04	0.04	0.05
	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)	(0.05)
Unemployed (%)	0.08	0.09	0.08	0.08	0.07	0.08	0.08
	(0.09)	(0.08)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Food exp.: Share of the district in d10 (%)	0.13*	0.20**	0.14*	0.15**	0.13*	0.15**	0.15**
	(0.08)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Food exp.: Share of the district in d90 (%)	0.02	0.07	0.07	0.05	0.05	0.06	0.06
	(0.07)	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)	(0.06)
Food exp.: Gini	-0.00	-0.03	-0.08	-0.05	-0.06	-0.05	-0.07
	(0.13)	(0.12)	(0.13)	(0.13)	(0.12)	(0.13)	(0.13)
Share of the population in the five biggest cities (%)	-0.09**	-0.06*	-0.07**	-0.07**	-0.07**	-0.08**	-0.07**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)
Distance to the nearest post office (km)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Feels happy (%)	0.03	0.03	-0.00	0.01	0.00	0.01	0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Complains on immorality (%)	-0.75***	-0.74***	-0.77***	-0.77***	-0.79***	-0.77***	-0.78***
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Finds most people helpful (%)	-0.10***	-0.11***	-0.11***	-0.11***	-0.11***	-0.11***	-0.11***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	110	110	110	110	110	110	110
R-squared	0.62	0.63	0.62	0.61	0.63	0.61	0.62

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.
(*): Other Northern groups = Mande, Gur, Grusi.

Table 3.14: General model of the evolution of vote for the NPP tested on different ethnic groups

	Share of votes for the NPP			
	(1)	(2)	(3)	(4)
Mole (%)	-0.02			
	(0.02)			
Other northern ethnic groups (%)			0.07	
			(0.04)	
Formal sector (%)		-0.10		-0.12
		(0.13)		(0.13)
Uneducated (%)		0.07		0.04
		(0.05)		(0.04)
Unemployed (%)		0.09		0.07
		(0.08)		(0.09)
Food exp.: Share of the		0.20**		0.13*
district in d10 (%)		(0.08)		(0.07)
Food exp.: Share of the		0.07		0.05
district in d90 (%)		(0.06)		(0.06)
Food exp.: Gini		-0.03		-0.06
		(0.12)		(0.12)
Share of the population		-0.06*		-0.07**
in the five biggest cities (%)		(0.04)		(0.03)
Distance to the nearest		0.00		0.00
post office (km)		(0.00)		(0.00)
Feels happy (%)		0.03		0.00
		(0.04)		(0.04)
Complains on immorality (%)		-0.74***		-0.79***
		(0.13)		(0.13)
Finds most people helpful (%)		-0.11***		-0.11***
		(0.03)		(0.03)
$\widehat{\Delta}_{\text{NPP, eco}}$	1.02***		0.95***	
	(0.08)		(0.08)	
$\widehat{\Delta}_{\text{NPP, Mole}}$		-1.73*		
		(0.93)		
$\widehat{\Delta}_{\text{NPP, Other northern}}$				0.36*
				(0.21)
Observations	110	110	110	110
R-squared	0.62	0.63	0.62	0.63

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.15: J-tests of the ethnic vs. non-ethnic model of evolution tested on other ethnic groups

	Share of votes for the NPP			Evolution of votes for the NPP		
	(1)	(2)	(3)	(4)	(5)	(6)
Akan (%)	0.56***	0.45***	0.46***	0.01	0.01	0.02
	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)
Formal sector (%)	0.88***	0.63**		-0.17	-0.12	
	(0.27)	(0.25)		(0.13)	(0.13)	
Uneducated (%)		-0.46***	-0.51***		0.06	0.08
		(0.10)	(0.10)		(0.05)	(0.05)
Unemployed (%)	-0.15	0.16	0.22	0.12	0.17**	0.05
	(0.17)	(0.15)	(0.15)	(0.08)	(0.08)	(0.08)
Food exp.: Share of the district in d10 (%)	0.29*		0.26*	0.16**		0.16**
	(0.16)		(0.15)	(0.08)		(0.08)
Food exp.: Share of the district in d90 (%)	0.04	-0.20	-0.10	0.05	0.05	0.06
	(0.13)	(0.13)	(0.13)	(0.06)	(0.07)	(0.06)
Food exp.: Gini	-0.19	0.40*	0.18	-0.02	0.07	-0.08
	(0.25)	(0.21)	(0.25)	(0.12)	(0.11)	(0.13)
Share of the population in the five biggest cities (%)	0.07	0.00	-0.02	-0.08**	-0.08**	-0.07*
	(0.07)	(0.07)	(0.07)	(0.03)	(0.04)	(0.03)
Distance to the nearest post office (km)	0.00	0.00*	0.00	0.00	0.00*	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Feels happy (%)	0.10	0.18**	0.18**	0.01	0.01	-0.00
	(0.08)	(0.08)	(0.08)	(0.04)	(0.04)	(0.04)
Complains on immorality (%)	0.12	-0.09	0.14	-0.78***	-0.79***	-0.79***
	(0.26)	(0.24)	(0.24)	(0.13)	(0.13)	(0.12)
Finds most people helpful (%)	0.05	0.09	0.07	-0.10***	-0.09***	-0.10***
	(0.06)	(0.06)	(0.06)	(0.03)	(0.03)	(0.03)
Observations	110	110	110	110	110	110
R-squared	0.76	0.80	0.79	0.61	0.60	0.61

OLS estimation. Standard errors in parentheses. Significantly different than zero at 90% (*), 95% (**), 99% (***) confidence levels. Regressions include a constant.

Table 3.16: General model for NPP votes and their evolution with some potentially multicorrelated variables dropped

Chapter 4

Power and Society in Africa: the Economics of Change

Fifty years after the wave of independence, the political economy of African[1] countries is still massively described as an ethnicized neopatrimonialism, inherent to the essence of the post-colonial state, as unfortunate and discouraging as any birth defect may be. As an exogenous historical legacy, an illegitimate State full of cynical elites organizes the extraction of rents and secures the support of a starving, ethnically divided population. The successive doctrines of the international aid community contributed to emphasize these flaws: inefficient, plethoric and corrupt African states were viewed as the main hindrance to economic development in the 1980s and were thus put on a severe diet. More recently, the focus on good governance entailed a renewed attention to the State and its endemic corruption, its lack of democratic legitimacy, its failure to enforce the rule of law.

For economists and policymakers, this one-size-fits-all concept had the noticeable advantage to provide a convenient explanation for the failures of economic development and international strategies in Africa. There may be solutions, but what kind of economic success can be expected from states crippled with patronage? As long as the regimes are non-democratic, as long as ethnic divisions and clan arrangements persist, as long as

[1] Throughout this paper, "Africa" refers to Sub-Saharan Africa.

corruption is pervasive, economics would be powerless.

Yet such a blanket grid of analysis is insufficient to account for the diversity of political and economic destinies of African countries. It is the case that (almost) all African countries were colonized, experienced partly exogenous delimitation of their borders, and are ethnically heterogenous. But it is not the case that they are equally non-democratic, corrupt and economically backward. It seems that countries took different paths in the post-colonial time, as if each of them deviated from the core model inherited from the colonial period. The analysis of these inherited and persisting structures, albeit fruitful and necessary, does not provide much insight on the dynamics of their trajectories, nor do they provide any clue for considering the future of African countries. Now that we know the structures, what are the driving forces?

This paper is an attempt to identify the dynamics of change in the African political economy. Building on the results of our previous works and on recent literature, it proposes to better investigate the interactions between social structures, individual incentives and power arrangements. We claim that contemporary strands of economics literature provide illuminating foundations for reassessing the roles of social networks, inequality and education in the analysis of states and democracy in Africa.

In section 4.1, we describe the dominant framework in which the political economy of Africa is studied: patronage. We trace back its origins to the establishment of colonial states and argue that the importance it took in political science is partly due to the limited knowledge available on the social structures in Africa. We then show the shortcomings of this approach and make the case for a renewed perspective centered on the individual incentives that shape social and power structures. In section 4.2, we highlight the diversity and the dynamics of social cleavages. We emphasize the existence of deep economic inequalities in Africa which deserve much more attention than they usually receive, and then focus on the dynamic endogenous formation of social groups as a response to economic incentives. In section 4.3, we argue that political structures and power arrangements are shaped by the interactions between social groups and by the nature of economic constraints. We use this framework to analyze the diverging patterns of Ghana and Côte

d'Ivoire, and show how the dynamics of economic and social interactions provide insightful explanations for the contrasted power arrangements in these two countries.

Joseph Schumpeter once described the role of economists in the following terms: "when we succeed in finding a definite causal relation between two phenomena, our problem is solved if the one which plays the "causal" role is non-economic. We have then accomplished what we, as economists, are capable of in the case in question and we must give place to other disciplines". It seems that in dealing with Africa, economists inclined to consider their job done a bit too quickly.

4.1 The historical legacy of patronage structures

In this section, we show how African studies typically focused on the importance of political mechanisms and mostly investigated the role of elites, in an extensive discussion on patronage. In spite of the accuracy of this approach to analyze the structures of power inherited from the colonial period, its relevance for contemporary developments appears questionable. Understanding the dynamics of power structures requires a renewal of perspective.

We first try to elucidate why the political analysis of the role of elites took the lion's share in African studies. First, the specificities of state building in colonial and post-colonial Africa played a great role in pushing scholars to investigate the establishment and the functioning of exogenous power structures (i). But we may also trace the origins of such an academic perspective to a poor knowledge of African societies except in their most picturesque components (ii). These factors incited to view the African political economy as a face-to-face between a remote and cynical elite and an indistinct population, and to strongly emphasize the system of patronage (iii). The set of explanatory factors proposed by this approach fails to account for the diverse and evolutive reality of the political economy of African countries. This makes the case for a renewed perspective centered on the dynamics of change at the grassroots level (iv).

4.1.1 The post-colonial state: a hypnotizing oddity

The system of power in Africa is the product of many historical layers stacked one on another, but the penultimate one is of particular thickness: the colonial period delimited African countries, shaped the modern State, imposed rules, norms and languages. All African countries were colonized, with the exception of Ethiopia (if we let aside the short intervention by Mussolini in the late 1930s), Liberia being a special case of recolonization by freed slaves from America. A great deal of studies focused on analyzing the political consequences of the colonial episode on the power structures in Africa.

Colonizers first shaped the boundaries of African modern states. After independence, security concerns led the Organization of African Unity to decide the preservation of the boundaries inherited from the colonial period - and thereby "eliminated any hope that the idea explicit in its name could actually be realized" (Herbst 2000, p.104). The polity shaped by the arbitrary borders can thus not be considered as en endogenous creation of the history of these societies. Englebert, Tarango, and Carter (2002) claim that African countries subsequently suffered either from the partition of pre-existing political groupings (dismemberment) or from the artificial grouping of distinct pre-colonial political cultures (suffocation).

Furthermore, colonizers established the administrative structures and inspired the Constitutions of independent countries. Their influence was anchored institutionally but also ideologically: the European system inspired the structure of political parties and the identity of political leaders, who often got educated in France or in Great-Britain and made their first political steps as representatives of their country in the colonizer's legislative assembly. This entailed the establishment of a structure of political lines and symbols inspired by the colonizers' political field:

> "Symbols, structures, programs and ideologies of these [newly created African] parties were learned and conveyed by the first Africans who sat as Members of Parliament at the Palais-Bourbon [the French Legislative Assembly], like Félix Houphouët-Boigny, Modibo Keita or Hubert Maga. They often appear as reproductions of left-wing French political parties. This imitation

> was all the more necessary as independence could only be successful for these elites... if it was both strongly political, thus including a deliberate ignorance of the traditional socio-cultural parameters, and based on imitation, which gave these elites a higher institutional competence than other possible authorities." (Badie 1992, p.179, my translation).

Englebert (2000) considers that the discrepancy between the post-colonial state apparatus and the society is the nexus of the political economy in Africa, because of the states' lack of historical and political legitimacy. He reminds that many African states, as colonial creations, have imported origins and therefore frequently enter in conflict with pre-existing political institutions. He concludes: "These new African states are not the endogenous creations of local history. They are not embedded in domestic power relations. They lack legitimacy." (Englebert 2000, p.5).

The discrepancy between the European type of State and the African context appeared all the more striking as a number of African leaders of the post-independence era were keen to play the traditionalist card just to offset the fact that they were heading imported structures. Leaders like Jean-Bedel Bokassa in the Central African Republic, Mobutu Sese-Seko in Zaire or Idi Amin in Uganda adopted grandiloquent and theatrical behaviors to cling to a tradition of chieftaincy although their constituencies were ruled by European-like constitutions. This symbolic mismatch appeared very strikingly to any analyst of post-colonial Africa.

> "Over time, leaders sought to legitimize their nondemocratic rule by multiplying the symbolic references to an imagined traditional style of rule. Leaders adopted African titles or nicknames: President Mobutu renamed himself Sese Seko Kuku Mgbendo Wazabanga (meaning roughly 'the all-powerful warrior who by endurance and determination will go from conquest to conquest, leaving fire in his wake') and encouraged the press to call him 'the guide'... President Eyadema of Togo encouraged rumors about his occult powers". (van de Walle 2001, p.117)

In a similar vein, Idi Amin titled himself as "Lord of All the Beasts of the Earth and

Fishes of the Seas and Conqueror of the British Empire in Africa in General and Uganda in Particular" (Appiah and Gates 1999).

Other leaders, oppositely, built their legitimacy with a modernist radical rhetoric by which they disqualified the traditional authorities, and insisted on the disruption they embodied. Sekou Toure (though taking the name of Almany Samory Toure, the great leader and resistance fighter to colonialism) in Guinea, Julius Nyerere in Tanzania or Kwame Nkrumah are representative of this radical breed of young African leaders, but more classical figures like Felix Houphouët-Boigny adopted the same attitude by the time of independence (Badie 1992, p.75). These radical stands even strengthened the perceived inadequacy between the states and the societies.

Either because of the striking mismatch between imported institutions and traditional authorities, or because of the emphasis on the radical change it was supposed to symbolize, the African elite was viewed as disconnected from the population and ill-adapted to the state structures they were ruling. The typical African state appeared as "suspended, as if it were in mid-air above society" (Hyden 1983, p.69).

This odd reality, produced by a unique chain of historical events, powerfully attracted the attention of political scientists. This was all the more natural as the state machinery was much easier to observe than the modern African society itself, on which very little was known.

4.1.2 A limited knowledge of African societies

The structure of African societies is much more difficult to observe than the structure of the typical African State. The first anthropologists who worked on Africa conveyed the vision of an atomized anomic society, probably influenced by Durkheim's sociology.

> "In the simplest societies, there is little more than the very important differentiation on the basis of sex and age. As we pass from the simpler to the more complex societies, we find increasing differentiation of individual from individual and usually some more or less definite division of the community into classes" (Radcliffe-Brown 1940, quoted by Ekeh (2004, p.25))

Consistently, African societies are generally supposed to be quite equal, or - to better say - quite equally poor. In the absence of any quantitative assessment of the actual wealth distribution, this sheer guesswork may have been influenced by the famous Kuznets curve (which predicts a inverted-U relationship between inequality and development, and thus associates under-developed societies with a relatively even distribution of wealth) and maybe by a cheesy image of primitive societies derived from philosophers like Jean-Jacques Rousseau (Cogneau 2007, p.11) or Voltaire who used the myth of the Virtuous Savage to better criticize Western civilization.

Until today, scholars frequently suppose that African societies are equal and disregard the socio-economic cleavages, as typified by this quotation from one of Robinson's papers:

> " The results also help to understand why there is so much conflict in Africa despite the fact that many African countries appear to be rather equal (at least compared to countries in Latin America). This is because the salient cleavage in Africa is ethnicity and the conventional data on income distribution do not well capture the relevant nature of inequality" (Robinson 2001, p.89)

In section 4.2 we will come back in details to these deceptive assumptions, which recent research largely invalidated (Cogneau et al. 2007).

As this quotation by Robinson suggests, the only cleavage that is typically deemed accurate on Africa is the ethnic one.

> "...the theoretical orientations that influenced African studies in the 1960s were essentially collectivistic. They led to the recognition of such ideational ensembles as state, society, ethnic groups and tribes." (Ekeh 2004, p.22)

A variety of political science works deal with this important issue (Posner 2006) (Chandra 2005). The focus on ethnic fragmentation as the only relevant social cleavage was even reinforced by the famous article by Easterly and Levine (1997), which explains Africa's growth tragedy by its high level of ethnic fragmentation. Although the authors assure

that their result does not only apply to Africa[2], the very striking bottom line of the paper remains that "high ethnic diversity is closely associated with low schooling, underdeveloped financial systems, distorted foreign exchange markets, and insufficient infrastructure" (Easterly and Levine 1997, p.1241) and that, for example, its direct effect "alone explains about one percentage point of the 3.4 percentage point East Asia-Africa growth differential" (Easterly and Levine 1997, p.1236). Such a striking result on such an unknown reality could only accentuate the idea that ethnicity is the only relevant feature of African societies. This led economists to repeatedly use the ethno-linguistic fractionalization index, in spite of the important conceptual evolutions made by anthropologists regarding the determinants of identity, the variability of ethnic salience or the complex definition of what an ethnic group is (Bossuroy 2009a).

This description of African societies provided some further incentives to the analysis of the neopatrimonial structure of power in Africa, which massively dominates the literature on African political economy.

4.1.3 The political economy of neopatrimonialism

With a powerful, cynical and exogenously established elite facing a homogenous and indistinct - or at most ethnically fragmented - population, the views on the African political economy were bound to focus on neopatrimonialism. Most studies in this field examine how elites try to secure the largest share of power possible, while citizens try to maximize the benefits they could reap from the protection of a member of the elite. This face-to-face between big men and ordinary people leads to pay much attention to the quest for power and to the struggles within the very small homogenous group of elites. In this framework, the driving forces of African countries are the elite's quest for power and the citizens' wish for protection.

Neopatrimonialism is a term derived from the concept of patrimonial authority, which Max Weber used to designate the principle of authority in the smallest and most tradi-

[2] "Though motivated by Africa's growth tragedy and its considerable ethnic diversity, none of the results is particular to Africa since we conduct the analysis on a broad cross section of countries." (Easterly and Levine 1997, p.1205)

tional polities (Weber 1922). A definition of neopatrimonialism in the African context is provided by Englebert:

> "The point is for the contemporary leadership to establish alliances with other elites, be they regional, ethnic, customary, or otherwise, who control the loyalty of some segments of society. In doing so, these loyalties are co-opted for the national regime, which thereby stabilizes its rule and reaches some level of social foundations. These competing elites are enticed into the national system with political sinecures, financial largesse, pork, and other forms of patronage." (Englebert 2000, p.98)

In a - weberian - nutshell, "the characteristic feature of neopatrimonialism is the incorporation of patrimonial logic into bureaucratic institutions" (Bratton and van de Walle 1997, p.62).

Most scholars relate the apparition and persistence of patronage to the weakness and illegitimacy of post-colonial African states. To remedy this shortcoming, new elites tended to choose policies efficient to gather political support but inimical to development. This is the crux of Englebert's thesis:

> "My central argument, therefore, is one of power, with elites choosing policies as a function of their respective power payoffs. These payoffs, in turn, depend on the degree of legitimacy of the state. When there is minimal conflict between precolonial and post-colonial political structures, leaders find greater power payoffs from choosing policies and forging institutions that foster development.... But under conditions of weak initial state legitimacy, bureaucrats are insufficiently loyal to the state and private agents distrust its institutions. This raises the relative returns, for the elites, of neopatrimonialism over developmental statehood." (Englebert 2000, p.6)

Herbst (2000) puts the emphasis on the weak internal control of African states over their artificially delimited territories, which led the leaders to use selective redistribution to keep control on their population. This echoes the situation in Europe between the 5th

and the 8th century, when a too weak central authority delegated the task of protection to regional lords.

Although the role of the ordinary people in this political scheme is generally disregarded, some scholars assume that they also benefit from patronage ties.

> "Most people are primarily worried about their everyday living conditions and are more concerned about finding new patrons (or old recycled elite) than about changing the complexion of the political order" (Chabal and Daloz 1999, p.44, quoted by Platteau (2007))

The African political economy is thus analyzed in a very similar way as feudalism in ancient Europe. Elites build up a pyramidal network of allegiance relationships to access a resource and gain control over the population. The people seek the protection of a lord for earning their subsistence. While in the feudalist system, the resource is an economic one - arable land -, it is related to power - political support - in contemporary Africa. But the similarity between the two sets of analysis is striking.

In the context of an exogenous State, a divided population, and artificial boundaries, patronage may be viewed as the only system able to maintain a cohesive system. It appears as a balance to the ethnic divisions.

> "In the case of ethnicity, perceptions of mutual interest are dependent upon, and limited by, perceptions of cultural affinities; clientelism, on the other hand, extends these perceptions beyond the realm of primordial loyalties and establishes vertical links of reciprocity between ethnically or socially discrete entities... clientelism may provide the cement by which ethnic identities are amalgamated within the boundaries of a more inclusive political system." (Lemarchand 1972, p.70)

The logic of clientelism and its impact on development has been studied on a theoretical level by several economic papers. As Englebert underlines it (see quotation above), the nature of the elite's gifts may be manyfold. For example, Robinson and Verdier (2003) propose a model in which elites provide jobs to people in exchange of their political

support, and discuss the conditions under which this strategy is attractive to the elite. Robinson and Torvik (2005) show how massive and useless public investments in physical capital (generally referred to as "white elephants") create a binding incentive for the people who benefit from them (through job creations for example) to support the government, since the very nature of the investments makes them very likely to be reverted in case of a change of power. These are some examples of what Acemoglu and Robinson (2001) called "inefficient redistribution" and describe as a way to maintain the political cohesiveness of a group in the elite's interest.

Qualitative evidence on neopatrimonialism and clientelism has been provided by several authors, like Bates (1981) who analyzed the programs designed to boost agricultural production in Africa. He describes the incentives to set up inefficient production schemes which require hiring officials in various localities, instead of just allowing prices to increase which would not allow politicians to target any spoils. Bayart (1989) provides a comprehensive discussion of the clientelistic arrangements in Africa, which he calls "the politics of the belly". More recently, Lindberg (2003) builds on interviews with Members of the Ghanaian Parliament to show that democratization may have reinforced the use of patronage. With a more rigorous approach, Wantchekon (2003) performed a very interesting controlled experiment during the presidential election in Benin. He shows how efficient a clientelistic campaign is to increase the share of votes for a given candidate. The impact of the elite's competition on patronage and on ethnic fragmentation of the population has been particularly investigated (Brass 1976) (Salamone 1985) (Eifert, Miguel, and Posner 2007) (Norris and Mattes 2003) (Chandra 2005).

To sum up, the usual approach of African political economy is based on three main axioms: states are historically illegitimate; African societies are divided in ethnic groups; elites are cynical and crave for power. Whether these features are specific to African countries is highly questionable (especially the last one). Jean-Philippe Platteau (2007) argues that the specificity or African moral explains why political competition and ethnic rivalries are fierce and merciless[3]. This argument appears to be much debatable, since

[3] "In Europe, moral constraints have been defined primarily in divine terms prescribed by a universalist religion, or in terms of civic duties associated with the idea of law and implied by written codes promul-

interethnic cooperation is pervasive in Africa (Fearon and Laitin 1996) and traditional moral rules often include a definition of the righteous peaceful behavior towards other ethnic groups (see for example the institution of the inter-group "joking kinship" in West-Africa). But more importantly, it should be discussed whether these simple axioms teach us a lot on the reality of power structures in contemporary African countries. On can doubt it.

4.1.4 Explaining diversity and change: the shortcomings of the neopatrimonial framework

By focusing on the importance of the state and of the elite, many studies present some kind of a paradox: on the one side, African countries are scarcely populated, states are weak and do not have the capacity to control their territory and tax efficiently their population, the government appears as a remote institution that does not have any influence on the daily life of citizens. On the other hand, elites are viewed as paramount chiefs able to use symbols, ideologies and redistribution to gain support of a politically and economically dependent population. Power structures in any remote village would be directly impacted by the political struggles within the small urban ruling elite. This paradox was summed up by Callaghy (1987) who called the African state a "Lame Leviathan" (quoted by Badie (1992, p.23)). The formula is witty but contradictory, and the conceptual gap between a stunted, remote state and an almighty elite is wide.

Furthermore, the diversity of African political systems contradicts the almost universal historical phenomenon, namely colonization and state illegitimacy, which is supposed to be their cause. The classification of African political systems and cultural traits by Fortes and Evans-Pritchard (1940) reveals an impressive diversity. Claiming that Africa, because of its recent colonial history, shares a general failure in governance and developmental

gated by a national state. In Africa, by contrast, morality remains founded upon the necessity for the reciprocal adjustment of the interests of the individual to the interests of the concrete others represented by relatives and fellow members of the native community... When inter-community or inter-regional relations are thus embittered by the game of "political tribalism",... morality remains restricted to members of the reference group defined in ethnic terms, while the wider sphere of relations is conceived as the space of amorality where all sorts of tricks are allowed and the common good cannot prevail." (Platteau 2007, p.14)

capacity does not account for the diversity of governance and economic performance on the continent (Englebert 2000, p.63).

Let us illustrate this point by the comparison between Ghana and Côte d'Ivoire. These two countries were colonized during about the same time span, their independence leaders, Houphouët-Boigny and Nkrumah, both belong to the Akan ethnic group and were influenced by their respective colonial powers (Nkrumah studied in United Kingdom, Houphouët-Boigny made his political debuts in Paris), both were quite radical anti-colonial fighters until independence. The discrepancy between the post-colonial Ghanaian or Ivoirian states and their societies had no reason to be different, nor the illegitimacy of the elite.

And yet, although both economically successful when compared to their immediate neighbors, these two countries have experienced contrasted post-colonial trajectories. Côte d'Ivoire long appeared as a stable and prosperous country, while Ghana was facing slow growth and an unstable political field. Since the 1990s, Ghana became one of the best performing African states and progressively set up a genuine democracy, while Côte d'Ivoire faced an economic slowdown and a severe political crisis. Understanding these differences requires more than an analysis of the impact of colonization as such or of the role of exogenous elites, even if of course these two countries also have some neopatrimonial structures in common.

In order to understand the diverging paths of these two comparable countries, and more generally to better account for the building and evolution of power structures, it may be time to go back to the first theories of political science. In his seminal and groundbreaking *Leviathan*, Hobbes (1651) examined the formation of power structures as a result of the individuals' incentive to set up group arrangements suitable for protecting each of its members from the war against every one else. The states originally derive from individual decisions.

The individual's aspiration for an improvement of his condition and the decision he takes as a response to a given economic context may be considered as the main drivers behind the dynamics of social and political structures.

> It is clear that the individualist perspective does play an essential role in understanding social phenomena... Any attempt to understand disequilibrium dynamics must require the understanding of the information and strategy choices available to individual actors. (Arrow 1994, p.3)

Individuals shape the dynamics of social structures, networks building, class formations. The microeconomics of group formation may thus be a first source of inspiration. The formation and empowerment of groups may be viewed as the driver of institutional change, which cannot be properly accounted for by the structural analysis of historical legacies. Yet this perspective of group building was very little studied in political economic studies on Africa.

> "Having disputed the relevance of [the Hobbesian] political philosophy's methodology of inquiry for examining Africa's political circumstances, social anthropologists studying Africa did not ask any existential questions pertaining to the individual's autonomy in African societies."(Ekeh 2004, p.25)

A closer look to the dynamics of group formation questions the simplistic opposition between the elite and the mass. A first necessary step is to provide empirical evidence on the nature of this division. This would lead either to transcend it, or at least to provide explanations for its persistence. Is the elite really unified? If it is, how come that no competing group appears to try and appropriate a share of the rent? Is the polity homogenous or are there patterns of power concentration and wealth accumulation that shape political arrangements? How can we analyze the process of social choice and the dynamics of democracy in that context?

> "The approach of methodological individualism... is largely one that is useful in a dynamic setting. It is concerned with how one gets from one situation to another. What alliances form, how do struggles occur, who wins the battles (if not the war). It is only by knowledge of that mechanism that one can have a good description of disequilibrium (that is, what transpires in the passage from one equilibrium to another)... "(Roemer 1982, p.514)

Understanding the trajectories of African states and their evolution since the end of the colonial period requires to analyze the deviations from the core model of post-colonial patronage structures. It appears necessary to look for empirical evidence on the nature and the determinants of social structures (section 4.2), which paves the way to better understand the dynamics of power arrangements (section 4.3). It turns out that economics has much to teach on these subjects.

4.2 The economics of social structures and their evolutions

In this section, we show that social structures are diverse and evolutive, and are often determined by economic cleavages and by the adaptation of individuals to the economic constraints they face. We first put the emphasis on the recent empirical evidence on the level and features of economic inequalities. We show that inequalities are not only very high in African countries, but they also vary a lot from a country to another. This major dimension of social cleavages appears to have been a bit overlooked regarding Africa (i). We then argue that social networks are not an essential and permanent feature of African societies, but often appear as a response to economic difficulties. Microeconomic works provide compelling evidence on the formation on social networks based on kinship or ethnic ties, and on their responsiveness to such dynamic factors as migrations (ii).

4.2.1 Dualism, inequalities and social mobility

Although wealth inequality may well be the most thoroughly discussed kind of social fragmentation, African societies are rarely studied through this lens. Some recent works fortunately fill this gap and show how diverse and fragmented they are with respect to economic characteristics. We now present the main results on rural-urban dualism before we turn to the more general features of economic inequality.

The rural-urban dualism of income levels is one of the most striking features of inequalities in developing countries (Bourguignon and Morrisson 1998), and it is especially

the case in Africa. In a study of the level and components of inequalities in five countries, Cogneau et al. (2007) find that "per-capita income differentials between agricultural households and non-agricultural households... are particularly disparate [and] constitute a strong explanatory factor for the total level of inequalities" (Cogneau et al. 2007, p.27). In Côte d'Ivoire in the end of the 1980s, the average income of non-agricultural households is 2.4 times higher than the one of agricultural households. The factor is 3.6 in 1994 Guinea. By contrast, Ghana circa 1990 only presents a very small wage gap with a difference of only 11%. We thus show that the level of dualism is thus not only huge in some countries, it is also much variable between African countries. In particular, a difference between Ghana and Côte d'Ivoire stands out strikingly. The differences are also important when inequalities of opportunities are considered (Cogneau and Mesplé-Somps 2008).

Furthermore, our study on social mobility (Bossuroy and Cogneau 2008) shows that the level of intergenerational mobility for the access to non-agricultural jobs may be very low, with Côte d'Ivoire, Guinea and Madagascar presenting lower levels of social mobility than Brazil or China. The situation here again is variable between countries. In Côte d'Ivoire, the level of cross-sectional dualistic inequalities is supplemented by a high intergenerational dualism which leads to high inequalities of opportunities. In Ghana conversely, the transversal level of inequalities is low and their dynamics (as measured by social mobility and inequalities of opportunities) tends to keep them at this low level.

While the level of inequalities between agricultural households is not very high, in keeping with the relatively low level of land distribution inequalities, we show that the inequalities within the non-agricultural sector are much higher and correspond to an unequal distribution of education - Sub-Saharan Africa ranks first in this respect when compared to other regions of the world (World Bank 2005).

Overall, the simple unweighted average of national Gini indices puts Sub-Saharan Africa second behind Latin America in terms of income inequalities (World Bank 2006). But when differences between countries are taken into account, i.e. if the Gini index is computed on the African population as a whole, it appears by far as the most unequal region with 0.61 (Latin America is left far behind with 0.52) (Cogneau 2007). "An African

belonging to the wealthiest quarter consumes more than four times more than an African belonging to the poorest quarter. This ratio is lower in Latin America and Europe, and even lower (below three) in Asia." (Cogneau 2007, p.11, my translation)

Although the first compilation of international income inequality statistics covering a significant number of Sub-Saharan African countries was already published ten years ago (Deininger and Squire 1996), the reality of African inequalities has not become part of the economic debate (except for some specific countries like South Africa or Zimbabwe where it was aggravated by a discriminating policy on a race basis).

A recent paper by Milanovic, Lindert, and Williamson (2007) further makes the case for a better consideration of the level of inequalities in Africa. The authors propose a new concept for analyzing the level of inequalities and compare it accurately across time and countries: the *inequality possibility frontier* and its correlate, the *inequality extraction ratio*. Under the assumption that there is a subsistence income level under which people cannot survive, the Gini index of income inequality is maximum when a single individual captures all the surplus, and this peak is all the higher as the surplus is high. In other terms, the potential - or frontier - for inequality is a positive function of the average income in the population. One can then compare the actual level of income inequality with the maximum possible level, which gives a sense of how the elite succeeded in extracting the surplus for itself. The authors use this concept to show that the level of inequalities *relative to this frontier* was much higher in ancient societies than in more recent periods.

These results are suggestive on the African case. Milanovic, Lindert, and Williamson (2007) provide some modern comparators that include some African countries[4]. If the subsistence income is set at $PPP 300, Tanzania and the Democratic Republic of Congo stand out with the highest ratios of actual Gini on maximum possible Gini, which means that the extraction by the elite is very efficient given the low level of surplus available in these poor countries. Nigeria and South Africa come next, with levels similar to Brazil. If the subsistence level is set at $PPP 400, African countries present huge levels of extraction ratios, much higher than 100% since a large share of their population does not even earn

[4]The countries compared include Brazil 2002, South Africa 2000, China 2001, United States 2000, Sweden 2000, Nigeria 2003, Democratic republic of Congo, 2004, Tanzania 2000 and Malaysia 2001.

the subsistence income. This method sheds new light on how we should interpret the high levels of inequalities in poor African countries and relate them to some of the most striking examples of resource plundering by elites.

The study by Milanovic, Lindert, and Williamson (2007) obviously echoes the neopatrimonial model, with a prebendary elite extracting the wealth from a mass of destitute - if only because it uses the Gini index which is maximum in this setting. It suggests an interesting dimension of economic inequality, on which we will come back in much greater details: the fact that the technology of power influences the distribution of wealth. The extraction ratio is determined by the concentration of power, or political inequality. The interactions between political and economic inequalities may be key to understand the trajectories of African countries, as we will see in section 4.3.

Given the importance of inequalities and their heterogeneity across countries, one could regret that African studies did not discuss more the elsewhere much commented class divide. But may we speak of classes in Africa? Maybe not in Marx's sense of a "class for itself", which would imply a high degree of self-consciousness and a unifying ideology. Given the very high share of the population which lives in the rural areas and works in small household farms, the remarks Marx himself made about the French peasantry may hold for Africa:

> "A small holding, the peasant and his family; beside it another small holding, another peasant and another family. A few score of these constitute a village, and a few score of villages constitute a department. Thus the great mass of the French nation is formed by the simple addition of homologous magnitudes, much as potatoes in a sack form a sack of potatoes. Insofar as millions of families live under conditions of existence that separate their mode of life, their interests, and their culture from those of the other classes, and put them in hostile opposition to the latter, they form a class. Insofar as there is merely a local interconnection among these small-holding peasants, and the identity of their interests forms no community, no national bond, and no political organization among them, they do not constitute a class." (Marx 1852)

But if we just look for the existence of social groups which share similar economic conditions and which may get organized to defend their interests, we should find many of them in modern African societies. Politicized urban destitute, low-level civil servants with decreasing real income, middle-range farmers facing price volatility, educated young unemployed, political, traditional or economical elites... all these groups are the product of a complex social structure and are part of a political economy characterized by poverty and inequality.

In any case, considering the possibility of a class divide in Africa at least acknowledges the possibility that the political economy is structured along other cleavages than the ethnic one. This is what we do (Bossuroy 2009b) when analyzing the determinants of vote. The class cleavage appeared to be significant to account for the vote patterns, even if this does not lead us to assume that poor Ghanaian people really form a genuine class. The theoretical investigations by Roemer (1998) (in a democratic framework) or Robinson (2001) (in a conflict framework), who both compare the impacts of class divisions and ethnic divisions on the political economy, appear as very relevant in the African context, as we will see in section 4.3.

Economic inequalities thus form an important social cleavage. But economic determinants also have a great impact on the nature and dynamics of social structures, through the mechanism of social group formation.

4.2.2 The formation of social networks

Some decades ago, the existence of solidarity networks in poor societies appeared quite challenging to the economic understanding. A famous debate opposed Scott (1976) who emphasized solidarity as a moral feature of rural underdeveloped societies, with Popkin (1979) who argued that peasants were as rational and opportunistic as anyone else (see (Platteau 1991) for a discussion of this controversy). Indeed, the formation of solidarity networks appears double-sided, one side being a seemingly ethical behavior motivated by solidarity values, the other side being the product of individual self-interest facing a risky environment.

The reconciliation was made by works like those of Posner (1980), who suggested that a solidarity system can be sustained because of the lasting relationship between its members, as self-interested as they may be. This qualitative proposition was then formalized for example by Kimball (1988) or Fafchamps (1992) using the theory of repeated games.

This approach appeared very fruitful and opened the door to a strand of literature on the formation of social networks and their role as institutional arrangements in low-income environments characterized by missing markets and absent formal rules. Development microeconomists showed that social networks are efficient structures for overcoming the lack of formal rules necessary to economic activities: contract enforceability, insurance and credit, moral hazard. Far from being an essential and permanent reality, social networks form and evolve as the product of decisions made by individuals facing specific constraints. This appears strikingly when the mobilization of kinship ties is analyzed.

The mobilization of kinship ties

Kinship ties, though often viewed as essential, may be formed or not formed by individuals through their use of social institution like marriage. Moreover, the fact that they constitute a social group is not straightforward. Their mobilization is the product of individual decisions, as a response to specific constraints. Economic studies indeed show that they may benefit a lot to the individuals.

One of the first papers on this issue is the one by Rosenzweig (1988) who uses longitudinal data from six villages in India and shows how "the membership, size and composition of households and cross-household kinship ties can be in part understood in terms of risk-mitigation". He draws the conclusion that

> "...kinship in a risky world not only tends to bond family members in a single location (in a particular way) but kinship ties are able to be sustained over space and over time in implicit insurance-based transfer schemes which contribute to consumption smoothing in the face of covariant income risks."(Rosenzweig 1988, p.1167)

Karlan (2007) uses a natural experiment provided by the group selection of a financial

institution in Peru to show that individuals who live closer to each other and are more culturally similar to others in the group are more likely to repay their loans and save more. A commonly shared ethnicity, for instance, would thus provide a better access to credit to the members of the ethnic group.

Some papers investigate this issue on Africa as well. Using household-level data from Ghana, La Ferrara (2003) shows how kinship networks work as capital market institutions. The non-anonymity of dynastic links enlarges the set of possible credit agreements, since the dynastic transmission of group membership provides a means of enforceability: it makes it possible that the borrower's child be punished as a response of a defaulting parent, thereby deterring unilateral deviation. The kinship membership also broadens the population that can benefit credit arrangements, by including the poor children of rich people. It also allows credits at a lower interest rate than the market rate. These properties are investigated in a model with overlapping generations and tested on household-level data from Ghana.

Creating a new tie through marriage may also have a strategic rationale. Luke and Munshi (2006) study the effect of marriage on economic outcomes, with a focus on the integration on the job market. Marriage is shown to increase the probability to be employed, and appears as a social contract since it also pushes individuals to spend more remittances to the extended family. It thus appears - at least partly - as a rational choice by individuals facing a failing job market and poverty.

Extended family ties are also shown by Fafchamps and Minten (2001) to help African traders of agricultural products to diminish the transaction costs, in a context where they are expected to be very high due to the poor transportation conditions, the small amounts of individual transactions and the difficulties to rely on courts and lawyers to enforce contracts.

We analyze elsewhere (Bossuroy 2009a) the determinants of ethnic identification at the individual level, and show that ethnic salience is partly the product of a strategic behavior related to the necessity to form networks and to benefit from interpersonal ties. This strategy is all the more crucial as individuals face an initial deprivation of social capital,

either because they inherited a low level of social capital from their family, or because they could not accumulate enough during their education years. The instrumental use appears even more as the identification is higher if the ethnic group average member is precisely in position to offer the resources the individual needs, like for instance better paid and more protected jobs.

These results provide the rationale for ethnic network formation or activation in an environment with failing markets, failing institutions or failing state policies in sectors like education, job market organization, or access to credit. Its economic payoff determines the extent to which ethnic salience is stimulated through ethnic identification and the activation of ethnic network. This, in turn, determines the relationship of the individual to the state.

> "In Africa, the modern state has not undertaken to attend to the business of providing for individuals' basic needs. Rather, and following colonial practices, this awesome responsibility has been allocated to ethnicity and other forms of kinship. This historical pattern of the state's neglect of individuals' basic security needs has emboldened the sentimental ties and bonds of trust between individuals and their ethnic groups and other forms of kinship". (Ekeh 2004, p.23)

Economic conditions thus appear as a key factor for explaining the importance of ethnic fragmentation in Africa. Some scholars go as far as saying that ethnic concentration "seems to result from nothing else than historical accident and socialization patterns that are reinforced by the practice of business itself" (Fafchamps 2004, p.308, quoted by Platteau (2007)).

This economic explanation appears alternative to the more common politically-determined mechanisms, but it may also be viewed a intrinsically complementary. These two sets of results converge if we consider the existence of a demand and a supply for ethnic cohesiveness. While the demand stems from the individuals' economic incentives, the supply may be provided by the "big men" of each ethnic group, these two forces reinforcing one another. Insofar as they form "*a system of social factors that conjointly generate a*

regularity of behavior" (Greif 2006, p.30), they give birth to an institution in its strict definition (Greif 2006) - in this case, a cohesive and self-conscious ethnic group.

The mobilization of kinship groups, and in particular the salience of the ethnic group, is therefore more the reflection of the dynamics of social and economic structures than the product of permanence and continuity.

> "Ethnic identity does not exclude other lines of identification. While being *bamoum*, one may still be male or female, farmer, worker or trader, Muslim or Christian, graduated or illiterate. Opposite to the quite problematic notion of a permanent traditional order, ethnic consciousness reflects social change, of which it is also a matrix. It can not be separated from contemporary transformations: urbanization, construction of new communication networks, establishment of new production relationships, increase in migration and trade flows." (Bayart 1989, p.76, my translation)

To illustrate and substantiate this point, we now examine more closely a particular aspect of the dynamics of African countries, that has long been shown to impact the formation of social groups and networks: migrations.

Social networks and migrations

The importance of migration flows is documented throughout African history, and is often related to the relative abundance of land compared to human or physical capital (Herbst 2000). But it took a particular importance when African cities developed under the influence of international trade and European settlement. Coastal cities became the centers of trade and business, and capitals became the place where administrations and formal firms were established. As we showed elsewhere (Bossuroy and Cogneau 2008), migration is often associated with the access to a non-agricultural job which yields higher wages. This corresponds to the most traditional model of migration by Harris and Todaro (1970), in which rural-urban migrations are determined by expected future income in the urban sector. But this economic decision also bears important social consequences in reshaping the social groups and in determining the individuals' attitudes to networks.

The role of social networks in the migration and settlement process has been investigated a lot by early American sociologists in the 1920s. The Chicago School of sociology had a particular interest in how immigrants form and perpetuate enduring social groups in the urban environment, trying to recreate the atmosphere of their home countries. The exhaustive study of Polish immigrants by Thomas and Znaniecki (1918) remains as a seminal contribution to this early migration sociology, as also the works by Wirth (1927) on the Jewish ghettos or the descriptions of Italian slums by Whyte (1943). These sociological works put the emphasis on the importance of ethnic communities in multi-cultural urban environments and on the role they play to help the individuals overcome the trauma related to migration and to find their place in the city of settlement.

Economists also recently examined the role of social networks in migration situations. As an example, Munshi (2003) analyzes the role of social networks for Mexican immigrants on the U.S. labor market. When the network is larger, a given individual is more likely to be employed and to hold a higher paying nonagricultural job. The author thus shows that "preexisting social ties ensure that [the immigrant] receives various forms of assistance from those members of the community who happen to be established at the destination when he does arrive" and that "it is the disadvantaged members - women, the elderly, and the less educated - who benefit the most". (Munshi 2003, p.597)

In our work on ethnic identification (Bossuroy 2009a), we also pointed out the critical role played by migration in the building of kinship networks: our results suggest that rural migrants tend to take advantage of their ethnic membership to integrate the urban job market. Migration thus strengthens the level of ethnic identification within an urban population, all the more by individuals who are economically underprivileged.

On repeated cross-sections of nationally representative surveys in Indonesia, Miguel, Gertler, and Levine (2003) also show that the districts which experience industrialization and thus in-flow migrations tend to show a growing level of social capital according to a variety of measures. They relate this result to the fact that migrants have a strong incentive to invest in social capital in their new place of living.

We thus advocate that microeconomics provides illuminating foundations for under-

standing the dynamics of social structures in the African context. While many studies adopt a static and essentialist approach hardly adapted to the variety of African contexts, microeconomics provides the basis for a renewed assessment of the determinants of social structures: the intensity of social fragmentation may often be considered as a response to the changing characteristics of the economic environment. The impediments individuals face to move up the social ladder by formal, institutional means determine push them to build parallel structures like kinship networks. Economics of African societies could therefore focus on how these different groups are impacted by the economic transformations due to nascent capitalism, as a result of individuals' decisions in a context where the nation-state does not really fulfil its role of coordinating economic decisions, aggregating choices and setting up redistribution mechanisms.

The dynamic approach of social structures is necessary to better understand why social cleavages evolve and vary across countries. It also provides a framework for understanding how power arrangements are done and undone, beyond the general neopatrimonial framework. The economic structures here again play a crucial role and determine the distribution of power and, at least partly, the institutional setting.

4.3 The dynamics of power

How does this dynamic and multidimensional view of African societies translate into the study of the dynamics of power? We obviously face the same kind of paradox on the political level as on the social level: the common view is that African countries are not amenable to democracy, and that they are most often dictatorships or headless territories. This again derives from the emphasis on the neopatrimonial structures and clientelism, which of course appear contradictory with the notions of equality and freedom of the citizens.

But here again, the reality is very diverse and we don't know much about the variety of power systems in contemporary Africa. Most African countries are democracies and the way these democracies function varies a lot both across time and countries. To better understand these differences and their dynamics, it appears as a first necessity to go beyond

the binary distinction between democracy and non-democracy - and the subsequent focus on "democratization" (i). A first set of lessons may be drawn from the microeconomics of social choice formation, a framework that corresponds well to the dynamic and multi-dimensional approach of social structures (ii). But the political arrangements should also be investigated deeply, through a precise analysis of the emergence of and competition between elites (iii). We finally underline the role of education as a critical and variable feature of political balances (iv).

4.3.1 Is democratization a relevant analytical concept?

An important literature investigates what drives the emergence of democracy, conceived as a regime radically clear-cut from non-democracy. The modern debates on the economic and social pre-requisites of democratization originate in two major contributions by political scientists who set up the "modernization theory". Lipset (1960) highlights the role of economic development in creating the conditions necessary to stable elected government. He insists on the rising levels of wealth, education, industrialization and urbanization as social conditions that would improve the people's participation. Moore (1966) draws attention to the transformations of the social class structure in the apparition of democracy in Western countries. The decline of land aristocracy and the emergence of an independent commercial bourgeoisie appear to him as key social factors for a renewed balance of political powers.

What are the existing empirical evidence for this theory, and to what extent are they relevant about Africa?

Empirical studies generally build on a binary measure of the democratic nature of a given country, and find a positive correlation between the level of development and political democracy (Bollen and Jackman 1985) (Diamond 1992) (Londregan and Poole 1996) (Przeworski and Limongi 1997) (Barro 1999) (Epstein et al. 2006). If one is convinced by this set of evidence, one should follow Huntington (1991) saying that

> "the correlation between wealth and democracy implies that transitions to democracy should occur primarily in countries at the middle levels of economic

> development. In poor countries democratization is unlikely, in rich countries it has already occurred... economic obstacles to democratization in Sub-Saharan Africa will remain overwhelming well into the twenty-first century". (Huntington 1991, p.60 and p.312)

But is this pessimistic view supported by a well-established causal relationship between underdevelopment and democracy? Acemoglu et al. (2007b) investigate this relationship on a panel of countries and control for fixed effects, so as to take out the effect of constant, potentially historical, factors. They find the interesting result that the positive relationship between income per capita and democracy disappears. They draw the conclusion that

> "...the relationship between income and democracy and the widely-accepted modernization hypothesis need to be reevaluated, with much greater emphasis on the underlying factors affecting both variables and the political and economic development path of societies. Our results indicate that countries have embarked upon different development paths, most likely at some critical junctures during their histories, and while some paths have led to democracy and prosperity, some others involved non-democracy and relative poverty" Acemoglu et al. (2007b, p.26)

If the level of economic development is not a strong determinant, maybe the level of inequality is? It would be very relevant for African countries, given the level of economic inequalities that we discussed above. But here again, the evidence appears mixed. On the basis of cross-sectional regressions, Bollen and Jackman (1985) find that "political democracy and economic inequality do not seem linked in any meaningful way" (Bollen and Jackman 1985, p.450, quoted by Muller (1995b)). Muller (1995a) presents empirical evidence suggesting that higher inequality made dictatorships more stable and reduced the propensity of a society to democratize, but the robustness of his results was strongly criticized by Bollen and Jackman (1995). Przeworski et al. (2000) investigate the effects of different measures of inequality on transitions to and from democracy. Their results show no stable relation.

The absence of any strong correlation may be consistent: inequalities and the preference for redistribution may be quite independent form the political environment or the level of democracy. Bénabou (2000) investigates the possibility that mutually reinforcing effects of high inequality and low redistribution leads to multiple equilibria, this process being disconnected from the level of democracy. He argues that it helps to understand the differences between the United States and Western Europe with respect to social security and redistribution policies, although their levels of political and economic development are quite similar.

The weakness of the results obtained on cross-country studies may also come from the simplistic binary measure that is often used to capture democracy. An example of this approach is given by Przeworski et al. (2000), who argue that a simple dichotomy between democracy and non-democracy is the most useful empirical definition, and they provide a set of pre-requisites for considering a country democratic. This approach leads to study the relationship between economic and political conditions only through the crossing (in one sense or the other) of this threshold separating democracies and the rest.

This is empirically relevant if countries experience overnight shifts of powers, a democratic regime being overthrown by a coup to establish a dictatorship, or a dictatorship being successfully toppled by a popular revolt that paves the way to democracy. Focusing on a dichotomic approach only helps understand this kind of rapid and clear-cut changes. This is what Acemoglu and Robinson (2006) study thoroughly. They discuss the conditions under which such changes may occur. The political economy they describe is made of one elite, one people and a level of redistribution which depends on whether the regime is democratic. The elites try to keep their position and may use repression (Acemoglu and Robinson 2000a), while the citizens want redistribution which makes them value democratic institutions as a credible commitment to future redistribution, because of institutional persistence (Acemoglu and Robinson 2008). People threats to make a revolution, whose social cost depends on the economic structures of the country, and this threat, if credible, may lead the elite to extend the amount of power allotted to non-elites (Acemoglu and Robinson 2000b).

Is this approach relevant to understand the problems of African political economy nowadays? One can doubt it. In a recent short article, Posner and Young (2007) present a striking graph showing how African leaders left power, by decade. The share of transitions due to coups or violent overthrows have sunk from about 75% in the 1960s to less than 50% in the 1990s and hardly more than 15% in the first half of the 2000s. The share of leaders who left power following voluntary resignation, losing election or natural death escalated symmetrically. It seems that studying sudden switches of political orders is less and less adapted to African countries.

Rather than clinging to the dichotomic approach between democracies and non-democracies, the key challenge may be to understand why some democracies seem to work well (with an open political field, possible shifts of power, high turnout levels, campaigns revolving around political issues) while others do not and appear as fake, formal democracies. Which political and economic features may account for the fact that with roughly the same kind of political institutions (multiparty democracies), recent elections in Côte d'Ivoire and in Kenya were contested and led to civil violence, those in Burkina Faso and Uganda have brought the same man to power for 20 years with more than 80% of the votes, and the elections in Ghana open the way to peaceful changeovers?

As these examples suggest, democracy is generally not a well delimited regime, but rather a set of attributes which generally do not come as a bundle. It is not clear-cut qualitatively, nor does it appear overnight. Understanding the nature of power systems requires to relate them to the nature of social structures - how individuals and social groups aggregate their preferences and how their interactions shape power structures.

4.3.2 The elaboration of social choice

A first bottom-up assessment of the impacts of social structures and economic contexts on democracy is to be found in the papers studying aggregate choices at the local level. Democracy being a specific way to aggregate individual preferences for building a social choice, the way it works may be analyzed at the community, village or city level. The works on this issue build on the theories by Olson (1970) who analyzes the conditions for

collective action and the problems groups have in convincing individuals to take actions that are costly for themselves but beneficial for the whole group.

The study of the local political economy and its relation to social structures was launched by a famous paper by Alesina, Baqir, and Easterly (1999) who showed that more ethnically diverse U.S. cities spend less on productive public goods. The public economy at the local level is thus impacted by social structures. In the wake of this seminal work, Alesina and La Ferrara (2000b) show that the heterogeneity of the population also impacts the level of participation of individuals in different types of groups in U.S. localities. They show that this participation is lower in more unequal and more racially fragmented societies. In a similar vein, Vigdor (2004) shows that heterogeneity in a community undermines the propensity of its members to complete and return a Census questionnaire, which is time-consuming but beneficial to the community.

The political economy of local public goods has not been much studied in developing countries. Important contributions include the study by Dayton-Johnson (2000) on Mexico, Banerjee and Somanathan (2007) on India and Olken (2006) on Indonesia, but only Miguel and Gugerty (2004) have so far investigated this effect on African societies. They show that ethnic diversity is associated with lower primary school funding and worse school facilities. They provide evidence that the impossibility to impose social sanctions across ethnic groups makes it much easier to free-ride in a heterogenous environment. The channels through which ethnic diversity impacts public goods provision are discussed by Habyarimana et al. (2007b) on the basis of an experimental investigation in Uganda. Co-ethnics are shown to reach cooperative equilibria more frequently, and to enforce social sanctions within their group, which confirms Miguel and Gugerty's results.

Likewise, Narayan and Pritchett (1997) study the impact of social capital at the local level of rural villages in Tanzania. They find a large impact of the characteristics of the associational activity at the village level on each household's income, and suggest this could be due to better technology adoption, better public services or broader access to credit.

Although more research is warranted to confirm these results, such studies highlight

the fact that the fragmentation of a society, and the salience of its cleavages, are of crucial importance for the understanding of local balance of power and policy-making. A socially, economically or ethnically fragmented society is less likely to set up solidarity and redistribution mechanisms. This fragmentation may have different dimensions, and the depth of cleavages and the intensity of social antagonisms may vary according to the social and economic context. Studying the dynamics of social groups is therefore necessary, since their interaction also drives the formation of social choice.

4.3.3 Elite competition and political arrangements

Social structures not only impact the capacity of citizens to aggregate their preferences into a social choice (horizontal effect), they also shape the social hierarchies (vertical effect). Complex social structures entail a multidimensional distinction between elites and non-elites. A given individual may have different reasons to consider himself member of the elite: being highly educated, being the son and heir of the village chief, being a large landowner, being a civil servant, being rich, belonging to the majority ethnic group... The way these different elites interact may be a determining factor for the political outcome.

Most historians consider that the major regime transitions in Europe (the birth of the British democracy or the French Revolution) stemmed from the emergence of a new commercial elite, independent from the aristocracy, which entered in competition with the well-established elite and eventually overthrew it. The economic prosperity of this class (the *bourgeoisie* in Marxist terminology) led to its political empowerment, and the political economy got transformed. Economic cleavages may thus be of tremendous importance to explain the rise of competing elites. This kind of argument led Moore (1966) to conclude: "no bourgeois, no democracy", and one of his prominent heirs to contend that

> "...democracy is difficult in a situation of concentrated inequalities in which a large impoverished majority confronts a small, wealthy oligarchy" (Huntington 1991, p.66, quoted by Acemoglu and Robinson (2006))

which may look relevant for African countries with their enduring poverty and their exogenous state structure.

As we already explained, most of political economy models purposing to account for regime changes consider a very simple divide in the society between the elite and the rest of the citizens. The incentive for change comes from the threat of a revolution. This supposes that the non-elites are in position to represent a credible revolutionary threat, which may only be applicable in very few cases and certainly not frequently in the African context. Acemoglu and Robinson (2006, Chapter 8) propose an extension of their framework to a three-class model, and show it may be accurate to account for a "partial" democracy, thereby qualifying the dichotomic approach. But their approach is still driven by the threat represented by the working class, which may or may not be mitigated by the middle class.

A recent literature proposes models in which the improvement of democracy is not the product of any threat, but results directly from the diverse social structure. For example, Lizzeri and Persico (2004) study the extension of the franchise in Britain in the 19th century, and consider a model in which the elite is divided. A share of it benefits from a patronage redistributive policy, by which politicians buy support, while an other share of the elite does not and is more interested in public goods with diffused benefits. In this model, the support for franchise reform increases in response to an exogenous increase to the value of public goods, which may occur in the period of rapid urbanization when sanitation expenses become crucial, or when industrialization makes it necessary to have a fairly educated working class. It also increases with the share of the elite which does not directly benefits from the *ad hominem* patronage transfers.

This models investigates the extension of the franchise, and focuses on the British experience in the 19th century. In most African countries, the right to vote is already universal. But this conceptual framework may well apply not only to *de jure* but also to *de facto* power distribution. The increasing weight of a specific elite that does not belong to the well established clientelistic system may foster a more even distribution of power. But what leads to the formation of a new independent elite?

According to Weber's theory, social stratification results from the interplay between three social attributes: power, wealth and prestige. Elites may emerge in any of these

dimensions, and enter in competition with the others. For example, the political role played by rich landowners or businessmen is documented in India (Banerjee and Pande 2007) and in Chile prior to the introduction of the secret ballot (Baland and Robinson 2008). But how does the diversity of politically active elites impact the political economy?

This is what Acemoglu et al. (2007a) recently examined in Colombia, focusing on wealth and power. The authors study the effects of political and economic inequality on a range of economic outcomes by district. The political inequality is proxied by the ratio of different individuals appointed as mayors on the total of mayor appointments. It is thus an inverse function of the diversity of politicians. The economic inequality in a Gini index of land owned. The results show that while political concentration has a negative effect on economic outcomes, economic concentration stands out with a positive effect. Acemoglu et al. (2007a) interpret this result by saying that

> "in weakly institutionalized polities... economic inequality may be a useful counterbalance against the most rapacious policies that may be pursued by political elites"

This result is in line with those of Banerjee and Somanathan (2007) on India, who find that "concentrated land ownership is associated with higher levels of provision, perhaps reflecting the disproportionate political weight of large landowners in pre-independence India, which continued, though increasingly challenged, into this period". The presence of "big men" who did not belong to the state structure increased the voice of the people and their claims for public goods.

What about Africa? Do we have evidence that the distribution of social attributes such as wealth or prestige impact the political arrangements?

Bates (1981) brings qualitative evidence on this, by documenting that a strong and well-organized rural elite is useful for pushing the state to adopt good agricultural policies. He more specifically shows that economic policy in post independence Kenya was more conducive to better economic outcomes than in Ghana because of the balance of power between politicians and economic elites. In Ghana, in spite of the Asante chieftaincies, smallholders growing cocoa could not solve the collective action problem and were unable

to restrain politicians from engaging in costly clientelism and choosing highly distortionary economic policies. In Kenya, mostly due to the legacy and persistence of a white settlement in the highlands, farm sizes were larger and an agricultural elite was able to organize and check the power of the politicians in Nairobi. This resulted in better policies and economic outcomes. Bates' comparison of Ghana versus Kenya provides an example in which greater inequality led to better economic outcomes.

Ironically, the case of Ghana is also extensively discussed by an other author on the same purpose, but this time as an example of a strong traditional elite compared to the social structures in Côte d'Ivoire. The central argument of Boone (2003) is indeed that the patterns of state-building result from the interaction between the center and the rural elites whose power depend on the nature and requirements of the economic activity. She points out the fact that the structures of the agrarian economy influence not only the policy choices, but also the political arrangements. She examines how political arrangements differ in two regions similar by their economic activity - the cocoa basins in Ghana and in Côte d'Ivoire - and relates these differences to the social structures in these rural areas. She argues that a powerful and well-organized rural elite in Ghana incited the central rulers (the British and then Kwame Nkrumah) to set up power-sharing or usurpation strategies, while the decentralized and relatively egalitarian rural structure in Côte d'Ivoire pushed the rulers to establish an *administrative occupation*.

> "The Ghanaian regime's strategy involved intense interventionism at the local level, a rush to build new institutions in the localities to displace old ones, and state agents' deep implication in local-level disputes of all kinds. This contrasts sharply with the Ivoirian government's aloof presence and "the absence of political life" in the forests of southern Côte d'Ivoire. The endogenous theory of institutional choice proposed here locates the origins of these differences in rural social organization: the two regimes confronted rural societies that differed in their capacity to challenge nationalists' control over both agricultural surpluses and the political behavior of ordinary peasants." (Boone 2003, p.237)

Boone thus qualifies the role of ideologies of the post-colonial rulers, saying that "the ideologies themselves were forged in response to social struggles and challenges that were unfolding in these West-African states". The fact that Kwame Nkrumah opposed the Ashanti traditional elites was more due to the objective challenging power they still had in the cocoa belt than to any radical and modernist conviction. She also qualifies the importance of the colonizer's identity: "For France to create "Native Authorities" with the power and influence of those constructed in southern Ghana, French colonizers would have faced the Herculean task of fabricating African polities and bureaucracies from whole cloth".

The role of the colonizers in shaping social structures may be somewhat underestimated here. It is not the case that the French only faced an atomized egalitarian society when arriving in Côte d'Ivoire. It is rather documented that they faced well structured and organized kingdoms, the Agni kingdoms, soon to be replaced by an other hierarchical society, the Baule ethnic group. Chauveau (1987) traces a succession of French strategies and Baule reactions to them, showing how the resistance or collaboration of various groups within Baule society helped to shape both the impact of French strategies and their subsequent revision. He highlights the importance of tracing class interests and alliances in order to understand the rather complex history of Baule resistance to and collaboration with the French power. The situation might thus be quite close to the Ghanaian one (well documented for example by Berry (2001)).

The main difference may thus come from the different reactions of the two colonial powers when arriving in Ghana and Côte d'Ivoire. The British established a power-sharing with the traditional Akan powers, and in particular with the Asante kingdom, while the French denied any other authority than theirs and enlisted the Akan elites in their own administrative system. These differences probably stem partly from the initial conditions faced by the colonizers, the Asante kingdom being more powerful than the Baule chieftaincies which did not control much of the territory. But it is also the consequence of quite different ways of organizing the power distribution, the British tending to favor a decentralized, non integrating administration and indirect rule while the French prefer

a centralized, integrating administration and direct rule.

Even if the identity of the colonizer appears to play a role, the fact that there is variation within the same colonial entities strongly supports the idea that power structures derive from the social and economic contexts at the local level. By analyzing the power structures in Senegal, Boone provides a striking example of such variations within a same country, by comparing the Wolof groundnut basin and Lower Casamance. In the first case, rural elites are powerful in their relations with the peasantry but they are politically constrained by the fact that they depend on the modern state for their economic activity. These economic conditions lead to a share of power between central rulers and the rural notability. Oppositely, in the Lower Casamance, political authority was decentralized and the rulers chose to set up an *administrative occupation*, based on a limited and concentrated state apparatus directly in the hand of the Dakar rulers, to avoid doing anything that would incite grassroots political mobilization in this context of a lack of reliable interlocutors. The nature of the economic activity (large mechanized cultivation of cash crop versus small household food crop farming) along with ethnic and religious determinants (the rise of the Sufi brotherhoods in the groundnut basin) contributed to a complex and diverse structure of power. The interactions between wealth, prestige and power elites shaped political arrangements at an infra-national level.

Such considerations lead Boone to conclude that

> "even in what are conventionally viewed as the modern world's most top-heavy and "artificial" states,the political authority of government is conditioned by micro-level political economies of property relations, personal dependency, and social control." (Boone 2003, p.12)"

These local characteristics are often the consequence of economic conditions in which individuals take decisions, like the level of inequalities, the migration flows or the organization of the job market.

More generally, the nature of the elite and the dynamics that may result from its diversity may be a priority on the economists' research agenda. Not that it was not studied by political scientists. Bayart (1989) discusses extensively how the post-colonial elite was

characterized by a dynamic of fusion or "reciprocal assimilation". But he also shows how this fusion was different across countries, as the result of the specific patterns in economic inequalities, ethnic structures or colonial legacy. More importantly, he explains how the transformations in the elite's structure could be a driving force of political equilibria.

> "Historical trajectories based on reciprocal assimilation [in the elite] may never be held as irreversible; no 'hegemonical alliance', however broad it is, is permanently sealed. In Kenya or in Cameroon... the decay of large economic or financial equilibria suggests that the transition may be swift from a dynamic of fusion to disintegration, from a centripetal to a centrifugal force. In other terms, time only will allow us to identify specific trajectories determined by the relation between the sub-saharan state and the patterns of social stratification. Time only will indicate whether the structure of inequality translates deeply into social structures, and persists over time." (Bayart 1989, p.197, my translation)"

Here again, the distinction should thus be made between a static view that in most countries, the political field is obviously little open and does not leave much room for different elites to compete, and the more dynamic investigation of the current trends in wealth or power accumulation. Research on the existing and potential emerging elites may prove highly informative on the future of power arrangements, although the presence of foreign elites (European, Indian, Lebanese, increasingly Chinese), both as a colonial legacy and as a result of globalization, makes the picture more complex since they most often are both economically powerful and politically harmless.

In any case, a better view on the distribution of power, prestige or wealth is critical to identify tensions and upcoming changes in political equilibria. And a strong indicator of the changes ahead in the distribution of these social assets may well be the distribution of education.

4.3.4 Education and people's participation

We close this chapter by a discussion on the role of education, whose distribution may be a key determinant of the emergence of elites, the functioning of democracy or the salience of identities. As a result of public policy, it is shaped by the power and therefore appears as a keystone in power systems. The patterns of educational inequalities and intergenerational educational mobility being much variable from a country to another (Bossuroy and Cogneau 2008), they may be a driving force in the changes of power structures and in the divergence across countries.

A first channel may be the possibility for new educated elites to emerge, which makes them able to challenge the traditional political order and to impose a renewed balance of power. The fact that independence fighters were mostly educated people supports this intuition. More generally, one may be tempted to trace back the origins of the Ghanaian democracy to the fact that the primary education for 50 years has been quite open, and in any case much more than in the neighboring Côte d'Ivoire. As we saw in our study on intergenerational mobility (Bossuroy and Cogneau 2008), the differences in the equality of educational opportunities are huge between these two countries, which could lead to different distributions of power among social groups.

This appears consistent with the results by Glaeser et al. (2004), who argue that differences in schooling are a major causal factor explaining not only differences in democracy, but more generally in political institutions, and provide evidence consistent with this view. Human capital accumulation causes institutional improvement. Glaeser, Ponzetto, and Shleifer (2007) provide an empiric motivation by revealing that schooling teaches people to interact with others and raises the benefits of civic participation, including voting and organizing. This leads to a broader support for democratic regimes as opposed to dictatorships.

Whether education entails democracy in general is a much debated question, and the results are not clear. The results by Barro (1999) and Przeworski et al. (2000), who find a positive relation on cross-country regressions are contested by Acemoglu et al. (2005), who argue that this evidence disappears once we look at within-country variation. But

the mechanisms through which this relation could work are worth investigating, and may be particularly interesting in the African context, where the distribution of education is much uneven and variable between countries.

In particular, within the frame of democratic institutions, education may be a determinant of the distribution of power through the participation of citizens to vote and the determinants of their choices. Lipset (1959) raises the argument by saying that

> "education presumably broadens men's outlooks, enables them to understand the need for norms of tolerance, restrains them from adhering to extremist and monistic doctrines, and increases their capacity to make rational electoral choices." (Lipset 1959, p.79)

The results we found about the determinants of vote in Ghana (Bossuroy 2009b) may be correlated to the fact that Ghana has one of the most massive primary schooling systems in the region. We commented on how Ghanaians on average have a better level of education, at least measured by the number of school years. It is possible that the so different recent outcomes of elections in Ghana and Côte d'Ivoire (one leading to a peaceful changeover of power, the other provoking a long-lasting civil crisis) are partly due to the lower level of education on the Ivoirian side, which may have led to more communal motivations for vote.

Education may be a pre-requisite to (good) participation, but it may also be a by-product of democratization. Some recent studies argue that democratic education partly comes from a learning-by-doing process, and highlight the role of experience. On the basis of a randomized experiment in India, Beaman et al. (2008) show how a repeated exposure to having a woman as the head of local councils reduces the bias against women as political leaders. Building on a vast compilation of all democratic experiments in post-colonial Africa, Lindberg (2006) shows how first-time elections are not sufficient to explain the adoption of democracy by a country, but may however provoke an institutional improvement:

> "Elections in newly democratizing countries do not signal the completion of the transition to democracy but rather foster liberalization and have a

> self-reinforcing power that promotes increased democracy in Africa's political regimes. Elections also facilitate the institutionalization of and deepening of actual civil liberties in the society and are a causal variable in democratization." (Lindberg 2006, p.2)

The contemporary electoral history in Ghana, which we review in our paper on voting patterns (Bossuroy 2009b), supports this view: the succession of presidential elections entailed a progressive rise in the level of turnout and a more and more democratic behavior by the political parties. Of course the levels of inequality, illiteracy or ethnic divisions damage the quality of African democracies. But

> "This integrating claim [that inequality may compromise the quality of democracy] should not be confused with the very different claim that democracy is worthless or unimportant in the presence of sharp economic disparities. That reactionary argument with an apparently progressive veneer has supposedly provided intellectual justifications of much tyranny and arbitrary authoritarianism in the world." (Drèze and Sen 2002, p.9)

The mutually reinforcing process of education and democracy provides a further argument for the utility of democratic institutions.

Education should however not be only seen as an exogenous feature of the society. The level of education and the extension of schooling is also driven by the supply, which is the product of political choices. In French colonies like Côte d'Ivoire, the level of education was a major determinant of access to administrative jobs. The returns were very high, and the diplomas delivered by the State were acknowledged and opened the doors of good and protected jobs. Consistently, the extension of schooling was limited. Oppositely, extending the number of educated people was politically not costly for the British power in Gold Coast, since education did not give any direct access to a job in the administration. The returns to education are in general much lower in former British colonies, and in Ghana in particular, as we saw in our study of intergenerational mobility. There might thus be two different equilibria with respect to the supply and recognition of education (Cogneau 2003).

These two systems established by the colonizers remained in the post-colonial period but their balance was upset. In Ghana, the end of the British domination opened the field of political competition, which was kept quite close until then. In this new political context, education could be claimed as the new hierarchy that was to replace the one established by the British. A large number of educated people embarked on a fierce competition for power, as illustrated by the number of educated freedom fighters in the late 1950s. This led to three decades of political instability where the different hierarchies - educational (Nkrumah), military (Acheampong), ethnic (Busia), regional (Limann) - opposed each other. In Côte d'Ivoire, Houphouët-Boigny maintained power and education structures quite similar to the one established by the French, with a low supply of very rewarding education. But this system also fell apart in the 1980s, when the adoption of austerity measures and the effort to reduce the size of the state reduced the number of jobs available in the administration. The glorious path of education led to nowhere else than unemployment or informal jobs. In parallel, the quality of education decreased sharply in the 1980s, with a drop in the credits dedicated to this sector. Universities decayed, teachers took a secondary job, private teaching institutions flourished (Proteau 2002) and students became increasingly radical. Generations of young urban educated people with worthless higher degrees felt misled, and claimed their rights to power by developing a culture of violence and radical politicization in student unions (Banegas and Akindes 2008).

To sum up this point, one could say that the French established a limited elitist education that provided access to good jobs, while the British established an open education system that did not provide much access. The periods of political instability in Ghana and Côte d'Ivoire followed the changes in the access opened by education. In Ghana, the limitation of access guaranteed by the British presence could not be maintained after their leave, leading to political instability. In Côte d'Ivoire, the returns to this elitist education vanished with the economic crisis in the late 1980s, which led to growing discontent and ultimately fed civil violence.

Education thus appears as a cornerstone of power arrangements in African countries,

and constitutes a strong driving force for the dynamics of elite competition and people's participation. It allows to understand how the elites form and compete and how citizens get empowered and involved in the political choices. These parameters form dynamic systems that are subject to changes in public policies, shocks in wealth distribution and demographical trends. We believe that this approach is stimulating and promising for the understanding of the divergent trajectories of African countries.

4.4 Conclusion

This paper is an attempt to identify the promising path ahead for research on political economy in Africa. We claim that the discussions on the specificities of the post-colonial state and its relationships with society have provided useful insights on the neopatrimonial structures, but that this approach should now be transcended. The complexity and diversity of national trajectories in the last half-century are compelling and call for a better understanding of the dynamics and the interactions between the political sphere and other determinants, in particular economic ones. This requires to revisit some major results of recent microeconomic literature and take into account the individual incentives at stake in the building of power structures.

To have a clearer view on these evolutions, one should first understand the mechanisms at stake in social group formation. The need to cope with an adverse economic environment and to overcome constraints to economic activity may lead people to associate along various lines, for example by taking advantage of their kinship or ethnic ties. The dynamics of migration flows and its impact on social networks testifies for the responsiveness of endogenous group formation.

The process of social choice strongly depends on the nature of the underlying social structures. The emergence of multiple elites which compete in an open political field depends a lot on the type of inequalities in the society. The interactions between the rulers and other elites determine the openness of the political field and the distribution of power. The supply of education and the choice to absorb or to keep aloof the educated elites are key in the definition of a country's political economy. The forces that drive the

evolutions depend much on the initial choices made in that respect.

This renewed perspective proves illuminating when it comes to understand the differences between two neighboring and otherwise much similar countries as Ghana and Côte d'Ivoire. The initial conditions at independence are quite similar: colonization by a European power, drawing of partially arbitrary borders, establishment of an exogenous power structure, poverty and ethnic divisions. All ingredients are gathered for a deeply anchored patronage system - which actually exists in both countries. But to understand the important differences, we first need to take full account of the disparities of social structures and the very different levels of inequalities and social rigidity, Côte d'Ivoire being much more unequal in these two dimensions than Ghana. We then have to examine the formation of elites as a consequence of these inequalities, and the way they interacted with the colonial powers. Although in both countries, economic elites stem from the cocoa culture, the organization of Ashanti in Ghana is documented as a bit more cohesive than the Baule society in Côte d'Ivoire. But more importantly, the way French and British dealt with these traditional elites in building their power structure was quite different, the French setting up an integrative and centralized administration whereas the British favored a power-sharing through indirect rule. The extension of education also appears as a strong determinant of the balance of power, and should be seen as part of an equilibrium that also involves the way rulers cope with other elites. The precise description of how these equilibrium effects are shaped also allows to understand their disruption and the changes it entails. The dynamics of Ghana and Côte d'Ivoire in the post-colonial period make more sense under this light.

The picture that emerges from this renewed perspective fits quite well in the debates on the "openness" of societies which are at the foundations of liberalism in political theory (Tocqueville 1835). Early sociological works elaborate on the idea that modern liberal societies distinguish themselves as being shaped by anonymous and impersonal relationships, each member being able to participate in the social, economic and political organizations irrespective of his original belongings. Durkheim's transition from a mechanical to an organic solidarity as the foundation of social ties (Durkheim 1893) or Weber's opposition

between *Gemeinschaft* and *Gesellschaft* (Weber 1922) both reflect the theoretical process of individual emancipation from binding traditional ties and the establishment of a larger cohesive society. This liberal vision was reassessed in the capitalist setting and theorized by its most enthusiastic proponents like Popper (1945) or Hayek (1979). It seems to also have strongly influenced the new institutional economics. A recent example of this analytical perspective could be found in the ambitious paper by North, Wallis, and Weingast (2006), in which the authors set down a general interpretation of human history as the transition from limited access orders to open access orders.

Our main results may be seen as vindicating such theories. We emphasize how social mobility, access to education, openness of the job market, elite competition determine the functioning of democracies. A deprivation of access leads to the building of social networks based on different types of ties which compete with the formal, organic social relationships. We also highlight how the economic constraints on individuals appear as the driver for this lack of access, which lines up with the capability approach of poverty (Sen 1985). Economic conditions thus appear to determine the individuals' relationships to their community and to the whole society, shape the formation of ethnic networks or classes, and influence the fusion or division of elites.

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