

INVESTOR-VOTERS AND ELECTORAL VOLATILITY
IN SUB-SAHARAN AFRICA

BY

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Submitted to the Department of Political Science and the
Faculty of the Graduate School of the University of Kansas
In partial fulfillment of the requirements for the degree of Master of Arts

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Acknowledgements

I wish to register my appreciation to Professor Erik S. Herron for his patience, wise counsel and constructive criticism throughout the process of preparing this thesis. I also wish to thank Professor Ronald A. Francisco and Professor Hannah E. Britton for accepting to serve in my committee, and for their valuable feedback.

Similarly, I thank my dear wife, Judith, and lovely sons, Alvin, Clinton and Griffin for their constant support and encouragement. I am equally grateful to my parents, Wilfred and Jenipher Asingo, for the firm foundation and their countless sacrifices.

Finally, I thank the Fulbright Committee for awarding me the Fulbright scholarship which has enabled me to undertake graduate studies at the University of Kansas.

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LIST OF ACRONYMS

ANC	African National Congress
BBC	British Broadcasting Corporation
BCP	Basotho Congress Party
BCP	Botswana Congress Party
BDP	Botswana Democratic Party
BNF	Botswana National Front
CDF	Constituency Development Funds
DA	Democratic Alliance
DP	Democratic Party
ELF	Ethno-linguistic Fractionalization Index
FDI	Foreign Direct Investment
FPTP	First-Past-the-Post
GDP	Gross Domestic Product
HDI	Human Development Index
KANU	Kenya African National Union
LCD	Lesotho Congress for Democracy
MCP	Malawi Congress Party
MLPC	Movement for the Liberation of Central African People
MMD	Movement for Multiparty Democracy
NARC	National Rainbow Coalition
NDC	National Democratic Congress
NNP	New National Party
UDF	United Democratic Front
VIF	Variance Inflation Factor

ABSTRACT

Do living conditions influence electoral volatility in Sub-Saharan Africa? This research question is informed by the tendency of free and fair elections to redistribute votes and seats among political parties. The redistribution is a zero sum game, whereby seats/votes gained by a party/ candidate, are simultaneously lost or 'deserted' by another party/candidate. The study focuses on 30 Sub-Saharan African countries, backed by case studies of Kenya and South Africa. Using the investor-voter model, a refined measure of electoral volatility, and a variety of statistical methods, the study finds support for the hypothesis that: better living conditions are correlated with low volatility. Although South African provincial aggregate living conditions appeared puzzlingly correlated with high volatility, this turned out to be an artifact of some underlying strategic shifts among anti-ANC voters from NNP to DA. Since the shifts are driven by economic voting, the hypothesis holds even in the South African case.

CHAPTER I: INTRODUCTION

Most scholars of electoral politics regard elections as ‘the institutionalized means of mass political participation’ (Chua 2007:6), and a ‘basic means by which the people of a democracy bend government to their wishes’ (Key 1961:458). Free and fair elections tend to reallocate legislative seats among political parties. If everything else is held constant, the reallocation process is a zero sum game in which the votes or seats gained by a party (or independent candidate) are simultaneously lost or ‘deserted’ by another party or candidate. It is reasonable, therefore, to expect that party legislative strengths and the composition of the elected members of the legislature will most likely change after elections. In other words, free and fair elections leads to electoral volatility, which can be defined as the total trade-off of votes or seats among political parties in successive elections.

However, the rate at which parties gain or lose seats and votes in two successive elections varies across space and time. Evidence suggests that the new and emerging democracies tend to record higher electoral volatility than the older and established democracies of Europe and North America (Ishiyama, 2006). In this regard, Epperly (2008) notes that the post-communist states of Eastern Europe and the former Soviet Union tend to experience higher volatility than Latin America and Western Europe. Other studies have shown that on average, electoral volatility tends to be higher in Latin America than in Europe. Even within Latin America, electoral volatility tends to be higher in Argentina, Brazil and Peru, but relatively lower in Colombia and Uruguay (Mainwaring and Scully, 1995; Tulchin and Garland, 1998:104-105).

In principle, extremely high or low volatility can be problematic (Ishiyama, 2006). Past studies have shown that high volatility impedes party institutionalization, raises political uncertainties, and makes it difficult for voters to hold leaders accountable (Birch, 2001). According to Fowler and Smirnov (2007) high volatility tends to create uncertainty about ‘the true location of the median voter’, and hence influence policy choices made by political parties. In essence, when volatility is very high, ‘democratic politics is more erratic, establishing legitimacy is more difficult, and governing more complicated’ (Mainwaring & Scully, 1995:22).

On the other hand, low volatility is harmful if it permanently blocks some groups in the society from accessing power (Giliomee and Simkins, 1999). One can also argue that in the new and emerging democracies, low volatility can raise doubt about the quality of the elections. Understanding variations in party support in different elections is therefore vital since volatility ‘raises stakes in the political game’, and influences parties’ electoral strategies (Birch, 2001; Bartolini and Mair, 1990).

The challenge then is how to account for the variation in electoral volatility across space and time. Madrid (2005) as well as Thames *et al* (2008) notes that attempts to explain causes of volatility have tended to converge on three broad explanatory variables - political institutions, socio-political cleavages, and economic conditions. Thames *et al* (2008) condense these into *demand* and *supply variables*. The *Demand variables* refer to factors that stimulate voter desire to shift party preferences. They can also be understood as the propensity of voters to shift party loyalty. The *Supply*

variables refer to factors that widen the range of options available for voters who desire to shift party preference. They conclude that the party system, which is a *supply variable*, has the most significant direct impact on volatility and that other variables including voter behavior are important only to the extent that they shape party systems. In short, supply and not demand drives electoral volatility.

Tavits (2008) raises the same question about whether it is voters' proclivity to shift party preferences that motivate elites to change the supply of parties, or the unsteady supply of parties that induces voters to shift party preferences. She concludes that electoral volatility results from changes in the supply of parties. According to her, it is the elite as opposed to what she calls "erratic behavior of voters", which accounts for party system instability, especially in emerging democracies of Eastern Europe. More specifically, the failure of the elite to build strong parties and offer clear choices to voters denies voters the opportunity to vote consistently, since they face a significantly different set of choices at each election (Tavits, 2008).

I sum up these arguments as institution-centered approaches to electoral volatility. The approach is characterized by the tendency to downplay the role of voters, and treat electoral volatility as if it is purely a product of elite institutional engineering, especially changes in the electoral system. The underlying idea is that only electoral institutions matters and anything else, including voters, only matters to the extent that it can influence electoral institutions. While institutional approaches have contributed much to our understanding of electoral volatility, the role of the voter

deserves greater attention. It is true, for example, that the entry of a new party can substantially alter the political landscape and cause high volatility as argued by Tavits (2008). However, it is also true that the formation of new parties does not in itself constitute a sufficient ground for voters to abandon the parties they previously supported. I argue in this paper that there must be reasons beyond the mere presence of new parties for voters to shift support from an old to a new party. Voters must be dissatisfied with either the performance of the ruling party or the inability of the existing opposition parties to offer credible alternatives to the ruling party. In addition, voters need to believe that the new party can make a difference. This follows the argument that, ‘voters prefer parties which are large enough to have a good chance of putting their policies into effect’ (Brug *et al*, 2007:119).

Interestingly, Tavits (2004) suggests that voters’ decision to support new parties is an expression of their disappointment with the existing alternatives, and that a vote for a new party is essentially a vote against the existing parties. However, beyond the protest vote, voters may shift preferences if they believe there are real prospects that the new party can indeed make a difference. According to Ersson and Lane, (1998), shifting support from one party to another is a conscious and intentional act and ‘the reason for a change in voting behavior must be either that the voter distances him-or herself from previously held beliefs or acquires new beliefs as well as values’ (Pennings and Lane, 1998: 30).

There are two other interrelated points worth noting. First, even when voters are dissatisfied with the parties they have supported in the past, it is not necessarily the case that they will always support new parties. If the national elites misread the public mood and create parties that are out of sync with voter expectations, voters can shift to already existing parties or remain politically active but unaffiliated to any party. Indeed, they can remain in their old parties, or become apolitical. As I will explain, Malawi's 2004 elections illustrate the point that voter dissatisfaction with the established parties did not translate into support for new parties. Instead voters elected several independent candidates into the national legislature.

Second, I argue that elites are unlikely to voluntarily disband an existing popular party to create new parties unless voters show signs of displeasure with that party. In other words, political parties only voluntarily cease to exist when their support base substantially shrinks. Indeed, Powell and Tucker (2008) note that:

New parties enter when they think they can win; old parties disappear when they are abandoned by elites who no longer believe they can win... if elites are completely certain that voters will all support existing parties, then there is no incentive for new party entry¹

However, some scholars seem to suggest that voters have little or no influence on party formation. For example, Hug (2001) states that new parties emerge out of interactions between old parties and the forces that create new ones. This implies that the factors that give rise to new parties are embedded in the party system itself

¹ Powell and Tucker, 2008. Page 7.

and hence the emergence of new parties is a systemic institutional issue that has little to do with voter behavior.

However, evidence suggests that voters can influence party formation. For example, it has been noted that voter attitudes in Canada tends to be the driving force behind party system change. Scholars of Canadian politics observe that, ‘public discontent and unrests in the 20th century sparked the formation of new parties as well as changes in the internal practices of the existing parties’ (Carty *et al*, 2000:108). Similarly, it has been noted that the political elites had little to do with the behavior change among Israeli voters that led to the emergence of the Likud party. It is argued that the Likud party emerged to absorb the disappointed supporters of the Labor Party (Shapiro and Mandel, 1991; Lechery, 1997). In essence, voter disaffection with the existing political institutions, including the party system, creates demand for new parties. Political elites supply new parties in response to this demand, thus raising electoral volatility.

Further counter arguments and empirical evidence from Africa also weakens Tavits (2008) explanation. Evidence suggests that it is not easy for a new party with a set of political newcomers to penetrate the African political market. Most of the so-called new parties either take the form of mergers or splits in existing parties, or are formed by elites who have fallen out of favor with the ruling class. In a number of cases, “party newness” is mostly symbolic. While they might have fancy names and catchy slogans, the policies and actors are essentially the same (see Bogaards,

2008). Voters are aware of these cosmetic changes and it is not surprising that new parties in Africa rarely offset existing party-seat distributions in any major way.

In Botswana, the vice president of the opposition, Botswana National Front (BNF) led eleven of the thirteen party MPs in a split that saw them form Botswana Congress Party (BCP) in April 1998. However, in the 1999 elections, only one of the eleven MPs from the BCP was reelected and the party simply failed to create an impact (Ndegwa, 2001). In Zambia, several new parties emerged from splits in the ruling party-Movement for Multiparty Democracy (MMD), but ‘none of the parties formed by politicians who have broken away from the MMD have made much impression at the polls’ (Localizada, 2002:1147). Likewise, in Kenya, ‘new parties have had little or no impact upon the elections’ (Cowen and Laakso, 2002:149).

This study is more focused on the aspects of electoral volatility that result from changes in voter behavior. To capture this, I use a refined measurement of electoral volatility and control for institutional influences on the electoral process. I advance the argument that the primary causal drivers of electoral volatility are voters and not institutions. In other words, voters are not passive clients or consumers of the elite institutional designs. As one scholar puts it, ‘voters are not lumps of clay waiting to be molded’ (Willet 1988:372). That is, voters do not just approve elite decisions, but often question, scrutinize and even make contrary decisions.

Cases where voters reject elite consensus are not in short supply. A good example is the 1992 Canadian Charlottetown Accord on constitutional change, which received the support of nearly the entire Canadian political elite. It was backed by the three key parties- Conservatives, Liberals, and Democrats-and the premiers of all the ten provinces. The main critic of the accord was the Reform Party, which had only one seat in the 257-seat House of Commons. Despite the huge elite support, the accord was rejected by voters in the referendum (Ginsberg and Stone, 1996; Norris, 1997).

Even after rejecting the accord, the Canadian voters were not done with the elites. In the autumn 1993 ‘electoral earthquake’, they voted in a way that redistributed seats among parties in an unparalleled manner. The ruling Conservative party, which had 160 majority seats, won only 2 seats with 16% of the popular vote. At the same time, the Democrats who had 44 seats won only 9 seats with 7% of the popular vote. On the other hand, the Reform Party, which did not win any seats in 1988 and only got one seat through a by-election, was handsomely rewarded with 52 seats in 1993 (Ginsberg and Stone, 1996; Norris, 1997). In short, voters not only rejected the elites’ ideas, but went on to reject the elites too. This shows that electoral volatility can be determined by ‘how people respond to what has been going on in politics’ (Vowles *et al* 1995:44). Indeed, new institutions can be set up, more parties and supplied but still ‘volatility of electoral preferences does not occur unless the voter changes her vote between elections from one party to another party...’ (Birnie, 2006:66).

It is apparent therefore that questions about electoral volatility are questions about election results. They are questions about why we get the results that we get in legislative elections at any given place and time. It is therefore useful to locate the causes of variations in electoral volatility not just on institutions like political parties and electoral systems but, more importantly, on the political behavior that produces election outcomes. Thus, electoral volatility is, at least in part, an outcome of voter behavior. Therefore, any explanation of electoral volatility that does not incorporate elements of voter behavior is at best incomplete and at worst inaccurate. This study adopts a voter-centered approach that seeks to bring voters back at the center of the analysis of electoral volatility.² As Bartolini and Mair (1994) notes:

Electoral instability is a phenomenon originating at the level of individual behavior, but which acquires political relevance only by reference to the changes which it produces in the structure of party systems.³

² This study does not engage in a deep discussion of political parties and their mobilizing role, since there is an enormous volume of literature on the subject. In fact, as already pointed out, most scholars of electoral volatility view it purely as a party systems issue. However, it is useful to consider political parties as potential venues, where individual economic voting decisions can be aggregated. The study acknowledges that political parties in Africa can potentially mobilize voters, using the economy as a campaign platform, to vote in a way that significantly affects electoral volatility. In Botswana, for example, the ruling BDP's campaign agenda in the 2004 elections was pegged on *Vision 2016*, which promises a much improved quality of life for the people of Botswana by the year 2016. In response, the opposition pledged to address poverty, income inequality, and unemployment, while pouring cold water on the vision as unattainable under BDP. The BDP manifesto reiterated the miracle of "the diamond boom", and how the party moved the country "from rags to riches". BDP capitalized on the country's international image as the 'African miracle', to assure the electorate that it holds the key to better life. Voters were assured that, even if their individual circumstances are not good enough, it would be worse without BDP. (EISA <http://www.eisa.org.za/WEP/comtables.htm>).

³ Bartolini and Mair. 1994 cited in Bogaards, 2008:113.

While a shift in preference by a few people is normal and expected in an election, it becomes a puzzle when a majority of voters at some aggregate level (constituency, municipality or province), presumably acting independently, simultaneously decide to shift support from one political party to another in two consecutive elections. To address the puzzle, the study takes recourse to economic voting theories. One reason for doing so is that, although African voter behavior has typically been explained in terms of ethnic voting theory, evidence shows that ethnicity is no longer sufficient in explaining election outcomes in most African countries (Posner and Simon, 2002; Norris and Mattes, 2003; Bratton and Kimenyi, 2008). The bottom line is that, ‘a broader overview of African elections- including Kenya’s December 2007 [parliamentary] contest- reveals that voters consider factors other than ethnicity in deciding how to vote’ (Bratton and Kimenyi, 2008:1). Many studies have thus concluded that African voters have not been properly researched and are therefore misunderstood (Schaffer, 2000; Lindberg and Morrison, 2008).

This study is therefore cast within the broader context of the search for alternative explanations of African voter behavior. This study examines whether changes in the aggregate living conditions influences electoral volatility. The focus on living conditions is motivated by the fact that several past studies have unearthed solid evidence of economic voting in the United States, Western and Eastern Europe, as well as Latin America (Tavits, 2005). As far back as the 1980s, Paldam (1981) concluded that the relationship between economic conditions and voting is beyond doubt and that what was still unclear is the causal mechanism through which

economic conditions influence elections (Reed and Brunk, 1984). Yet, as recently as 2005, it was still being observed that Africa is the most neglected region in the world when it comes to economic voting (Youde, 2005). That is, despite the prevalent use of economic voting theories in other parts of the world, they have not received sufficient attention in Africa.

To be fair, there have been studies that link African voting behavior to economic variables. However, most of these studies tend to be single country case studies such as the 2001 presidential elections in The Gambia (Saine, 2008), the 2005 elections in Ethiopia (Arriola, 2008), Mali's 2007 elections (Baudais and Sborgi, 2008), as well as survey data on Ghana (Lindberg and Morrison, 2008). In fact, a post-election survey in Zambia in 1996 found a strong correlation between economic decline and loss of support by the incumbent president (Posner and Simon 2002). In his study of Ghana, Youde (2005) also found evidence that support for incumbency is driven by economic voting. However, Youde's study used support for the government as an indicator of the popularity of the ruling party. The problem with the study is that data on support for government was collected eighteen months before the data on the economic situation was obtained. It is thus difficult to tell whether the same support prevailed at the time of collecting data on economic situation. What is disturbing though is that these and other single country studies have been used to draw generalizations about Africa. A notable exception is Bratton *et al* (2005) who did a cross-national study of a handful of African countries also found evidence of

economic voting. It is for this reason that Chege (2008) calls for cross-national studies as a basis for drawing generalizations about Africa.

Most of the studies on economic voting in Africa do not directly focus on electoral volatility and those that focus on volatility tend to ignore the economy. Like Tavits (2008) whose focus was on emerging democracies of Eastern Europe, Mozaffar and Scarritt (2005) attributes the high levels of volatility in Africa to the existence of ‘many short-lived parties and their rapid entry and exit in democratic elections’ (p. 408). As I have already explained, evidence from Africa does not seem to support the argument that, party entry and exit determines volatility in the continent.

Despite weakness in these studies, anecdotal clues suggest that African voting patterns respond to economic trends. In a recent BBC interview with potential Zambian voters before the 2008 presidential by-elections, the economy emerged again as the key concern for voters. One of those interviewed from *Mafulira* in the Copperbelt Province observed that:

There are a lot of issues that have prompted my voting choice but mainly it is the economy of our country. To be very precise, the town where I come from here in the Copper belt of Zambia is the largest producer of copper but the situation is very bad - in terms of infrastructure, roads, and housing. Those are the critical areas that I am getting at. The present government has failed to look into these issues very, very seriously⁴

⁴BBC News: Interviews with Zambian Voters
<http://news.bbc.co.uk/2/hi/africa/7694953.stm#honest> (04/03/09).

The problem, however, is that ‘economic voting is often presented as a black box, with economic variables serving as inputs and electoral volatility as outputs. Hardly do we see efforts to open the black box’ (Dorussen and Taylor, 2002:5). Scholars typically build models and throw in economic variables without highlighting how these economic variables are transformed into election results. I argue that voters occupy a central position in the black box in that they process the economic variable inputs into electoral volatility. Economic variables influence voters’ perception of the political elite, which in turn, inform their voting choices that produce electoral volatility. More specifically, I argue that voters use economic variables to measure the performance of incumbents and decide whether to punish or reward them. Of course, voters, particularly in Africa neither have sufficient information nor the capacity to correctly interpret economic variables like inflation or GDP growth rate. However, as one scholar observes, ‘it is thus not necessary that voters know the exact numbers as long as the numbers accurately reflect what the voters are actually paying attention to’ (Fair, 2002:58).

While many voters, particularly the illiterate and rural poor, may not know GDP growth rate, inflation, or even unemployment rates, they know about availability and quality of medical services, education, infrastructure, water, and housing. In short, they know the totality of their living conditions. This calls for a measurement of the economy that captures what the voter easily relates to. In this regard, the study uses Human Development Index (HDI), which as I will show later, captures what is immediately visible to the voter.

Generally, this thesis is organized into six parts. Part *Two* provides an outline of the research problem, theory, and methodology. The next three sections present and analyze data that test the utility of the investor-voter model. More specifically, Part *Three* is a cross-national study of 30 Sub-Saharan African countries, taking the state as the unit of analysis. *Part Four* and *Five* focuses on two of the 30 countries studied in part three, namely Kenya and South Africa. In both cases, provincial level data are used. The Kenyan case is further refined to include the constituency level data, while the South African case has also been narrowed down to the municipal-level. This fusion of cross-national aggregate data with local-level aggregate data is not unique to this study.⁵ *Part Six* of this thesis is the conclusion of the study which gives an overview of key findings, and points out directions for future research.

⁵ Fusion of cross-national data with local-level data has been used by Madrid (2005) who studied the impact of ethnic cleavage on electoral volatility in Latin America. His study began with a national-level analysis of electoral volatility in 18 Latin American countries, and then narrowed down to the provincial electoral volatility in Bolivia. In fact, his study replicated the study by Roberts and Wibbels (1999) which adopted the same approach.

CHAPTER II: RESEARCH QUESTION, THEORY AND METHODOLOGY

2.1 Study Puzzle and Research Question

Once the voters are brought to the center of the analysis of the causes of electoral volatility, two interrelated questions immediately arise. First, why do voters shift support from one party to another in consecutive elections? Second, should an analysis of the causes of electoral volatility focus on the individual voter behavior or on voter behavior at some higher level of aggregation?

These questions point to the research puzzle for this study, which can be understood at the individual, constituency, provincial and national levels. At the individual level, it is puzzling why a voter would support a political party or candidate in one election and reject the same party/candidate (sometimes violently) in the subsequent election. At the constituency level, it is puzzling why some constituencies tend to reject incumbent legislators/parties, while others stick to the same party/legislator for a long time. For example, Kenya has held four elections (1992, 1997, 2002 and 2007) since the rebirth of multiparty democracy in 1991. However, although central province of Kenya is fairly homogenous with the Kikuyu ethnic group constituting nearly 94% of its population (Alwy and Schech, 2004), several constituencies in the province (and indeed in other provinces) have changed parties at each of the four elections. These constituencies include *Githunguri*, *Limuru*, *Kiharu*, *Juja*, *Lari* and

*Kinangop*⁶. At the national level, there is a puzzle as to why a political party with a huge majority in the legislature would lose almost all the seats in the next election. Yet this is exactly what happened in the 1993 Canadian elections explained earlier.

These cases are neither isolated nor confined to Kenya, but are part of an apparently complex pattern of voter behavior. Indeed, Long and Reich (2002) observes that since 1980, Turkish voters have always rejected more than half of the incumbent deputies standing for elections. Turkish voter rejection of sitting deputies reached unprecedented proportions in 1991, when some regions of Turkey rejected all their incumbent deputies and hence reported ‘a complete turnover of parliamentary representation’ (Long and Reich 2002:26).

Focusing on the voters also raises a methodological dilemma. On the one hand, volatility is about election outcomes and on the other hand, there is what Hirschbein (1999) calls the ‘powerlessness of the individual voter’ expressed by the fact that ‘the probability of an individual vote influencing the outcome of national election approaches zero’ (Hirschbein, 1999:7). At the core of the puzzle is the question of how to treat the voter in the analysis of electoral volatility. Should one focus on the individual voter or on some aggregate voter behavior? A decision must be made one way, and either way there is a risk. Focusing on aggregate voter behavior poses the risk of engaging in ecological fallacy. However, focusing on the individual voter

⁶ Electoral Commission of Kenya: <http://www.eck.or.ke/index.php/Election-Results-Database/07/08/09>).

also has the potential of leading us to the *individualistic fallacy* which is less talked about but equally problematic. The former involves drawing inferences about individuals from aggregate-level data, while the latter involves drawing inferences in the reverse direction (Landman, 2008).

If we take electoral volatility simply as an aspect of election results, treat election results as the distribution of aggregate voter preferences, and limit our analysis and interpretations to a suitable aggregate level, we overcome threats to the ecological fallacy. Since a shift in an individual voter's party preference is unlikely to alter electoral volatility scores in large elections, there is need to focus on voter behavior at some aggregate level to explain electoral volatility. As Sarah Birch (1998) notes, individual-level data tend to ignore the influence of contextual factors on voter behavior and hence isolate individual behavior from the environment in which it occurs (Kuzio, 1998). Yet, 'evidence strongly suggests that local contexts (at a variety of scales) influence voter attitudes and behavior, and that many individual characteristics associated with such behavior are themselves locally stimulated, if not created' (Zuckerman,2005:184).

The critical question underlying these puzzles is: what drives a group of voters at some level of aggregation (national, provincial, constituency or municipal) to shift party preferences? I argue in this paper that, since the decision to vote is arrived at independently by each voter, for a sufficiently large number of voters to converge

on the decision to shift partisanship, they must be driven by an issue that is salient within the aggregate unit in question. Since the focus of the study is on Africa, it is useful to begin by noting that, ‘African countries dominate the rank of the poorest economies in the globe’ (Edoho, 1997:13). At the same time, it has been noted that, people’s orientations to politics are also shaped by where they live (Worshinsky, 2008:123). Given these two observations, it is reasonable to expect that the living conditions in Africa affect electoral volatility in the continent.

The key research question therefore is: *Do living conditions influence electoral volatility in Sub-Saharan Africa?*

2.2 Study Objectives and Rationale

The primary objective of this study is to determine whether voters’ living conditions influence electoral volatility in sub-Saharan Africa. Although economic voting theories are widely used in other parts of the world (Epperly, 2008), they have not received sufficient attention in Africa. Sometimes, inappropriate economic variables have been incorporated in volatility models and, as would be expected, they turn out to be statistically insignificant. Ishiyama (2006), for example, found that Foreign Direct Investment (FDI) per Gross Domestic Product (GDP) has no statistically significant influence on electoral volatility. He also found that economic freedom does not influence electoral volatility. However, I argue that, due to the high cost of information, it is unlikely that voters can distinguish those aspects of their economic

hardship that are attributable to local investments, from those that are due to FDI. Their expectation is that the government/ruling party should be able to cushion them from economic hardships of any kind and from whatever source. In fact, according to the investor-voter model, ‘voters have issue interests but expect those interests to be generalized because of the cost of information’ (Popkin *et al*, 1976, cited in Ferguson and Rogers, 1984:153). The theoretical linkage, which Ishiyama (2006) establishes between FDI and electoral volatility, is therefore unclear.

While many studies use voters opinion on the state of the economy, this study looks at the actual living conditions at the time of the elections. As Kramer (1983) argues, the national economy of any country at any given time is a constant. I underscore this point by noting that Nigeria’s HDI for the year 2009, for example, is the same regardless of whether one is in *Lagos, Enugu, Abuja* or *Onitsha*. It does not vary for *Yoruba* or *Igbo*, Christian or Muslim, educated or illiterate, poor or rich. If interview respondents have perfect information about the state of their national economy, their description should be the same, since they would essentially be describing the same thing. Therefore, when the state of the same economy is described differently, then either the respondents lack adequate information about it and hence perceive it differently, or they simply do not to tell the truth. Either way, such data do not reflect the state of the national economy. At best they show people’s perceptions about the national economy and not the economy itself.

Unlike many studies that use the individual voter as the unit of analysis, this study uses aggregate voter behavior as its unit of analysis. It follows from Kramer (1983) who suggests the need to study voters at some higher level of aggregation rather than at the individual. According to Kramer (1983), aggregate-level data offers the best estimate of how economic conditions influence voter behavior. This is because unlike the individual-level data which relies on subjective measures of economic conditions, aggregate level studies are based on objective assessments of economic conditions (Brug *et al*, 2007:194).

Similarly most studies on electoral volatility in Africa tend to be largely descriptive, univariate comparative analysis of party systems. Mozaffar and Scarritt (2005) for example, use aggregate Africa-wide mean, median, and the standard deviations of electoral volatility to determine the structure and volatility of African party systems. Their study does not examine the causes of electoral volatility. Like other studies, they approach volatility from an institutional perspective, as a party systems issue. Although they focus on 101 elections held in 36 African countries, nearly 25% of those elections were held in only three countries- Botswana, Mauritius and Gabon.

Driven by some of the concerns raised above, Matthijs Bogaards (2008) submitted a prompt rejoinder to Mozaffar and Scarritt (2005). However, like nearly all studies on volatility in Africa, Bogaards (2008) also embraces the pure Pedersen index of volatility. However, as I will explain later, the Pedersen index measures volatility so

broadly that it includes some elements whose changes are not attributable to voter behavior. This study therefore seeks to refine the concept of electoral volatility so that it reasonably captures shift in voter preference.

2.3 Study Limitations

The main problem that this study faced was data availability. The problem of data on African elections is not unique to this study. Bogaards (2008) observes that data on African elections are not readily available for many countries. In some cases, data was available but was either incomplete or inaccurate. In order to ensure data reliability, this study obtained data from multiple sources. For instance, the cross-national data on election results and voter turnout in Africa were obtained from Adam Carr's Election Archives, the African Elections database, Parline Database on National Parliaments, and where possible, the election commissions of the particular countries. In most cases, particularly when calculating electoral volatility, data was supplemented with information from relevant documents and texts.

In some cases, data was available in a form that required reorganization before it could be used. An example is the constituency level data for Kenya. Since I was not able to get constituency-level data on Human Development Index (HDI), I used the rural poverty incidence, or the Headcount Index, as an indicator of living conditions at the constituency-level. However, the rural poverty incidence data for Nairobi and North-Eastern provinces were missing. Fortunately, the urban poverty incidence

data for Nairobi was available. Since Nairobi has eight constituencies, I selected two of the constituencies and used their urban poverty indices.

Furthermore, there was no aggregate constituency-level data on poverty incidence. The rural poverty incidence data was collected and aggregated at the level of the administrative units known as *Districts*, *Divisions*, *Locations*, and *Sub-Locations*. Traditionally, the boundaries of *Divisions* coincided with those of a constituency. However, in the recent past, *Divisions* have been created arbitrarily, so that some constituencies have as many as four *Divisions* while others have one. It is therefore, difficult to match constituencies with their respective *Divisions*. The sample is thus limited to constituencies that I was able to identify using personal knowledge of the country. To avoid biased results and to accommodate possible variations in regional voting patterns, the sample shown in Appendix 5 is drawn from several districts.

Due to the problem of data availability, I ended up with small samples which also had implications for the choice of analytical methods. For example, in the provincial data for Kenya, the number of cases is eight, and for South Africa the number of cases is nine. With such small samples it is not feasible to use ordinary least squares or robust regression. Instead, I mainly used association tests (Kendall coefficient of concordance and Pearson product moment correlation), as well as the test of the difference of means, and the test of proportions. Although I have used the test of

association (for reasons given in the methodology section), more than the test of the difference of means, and the test of proportions, the latter two are equally powerful.

This account of data problems will be incomplete without stating why the study did not use the Afrobarometer dataset, which is the most comprehensive data set on Africa. First, I have already pointed out why it is inappropriate to use surveys to ask individual respondents to gauge the national level economic conditions, and indeed, economic conditions at the provincial, district or even constituency levels. On this account, the Afrobarometer data cannot measure aggregate living conditions, which is the study's key independent variable. Second, the dataset lack a variable that can measure whether respondents have shifted or intend to shift party preference. In the absence of such a variable, it is not possible to determine electoral volatility which is the key dependent variable. Finally, the dataset only covers few African countries regarded as democratic, although there is no guarantee that these countries are a representative sample of Sub-Saharan Africa.

The study limitations notwithstanding, the datasets I have assembled for the study are both adequate for the present task, and could also serve as a foundation on which a comprehensive dataset on African elections can be built. Ideally, such a dataset would contain continuously updated aggregate-level election data on Sub-Saharan African countries. This is important because, most datasets on African elections,

such as Nohlen (1999) and Lindberg (2006), only give national-level data but lack precinct or intermediate (provincial or constituency) level data.

2.4 Theoretical Framework

i. Social Cleavages and Ethnic Voting Theory

There are a number of scholars who attribute electoral volatility to social cleavage voting, which is based on the idea that voters' political interests are defined by their social identities. Consequently, party choices made by voters reflect their position along the continuum of the dominant social cleavage (Mainwaring, 1999). As long as social cleavages are static, voting behavior is expected to be consistent, stable and predictable. Looked at this way, it is understandable why Lipset and Rokkan (1967) developed the 'frozen party system hypothesis'. The logic behind 'the frozen party hypotheses' is straightforward: parties are formed on the basis of, and draw support from, some groups arrayed along different dimensions of the prevailing social cleavages. If these cleavages are static, then there is little voter mobility across parties. Specifically, advocates of social cleavage theory predict that, as the degree of social differentiation increase, volatility will also rise (Bratton *et al* 2005).

Salient social cleavages or the basis of social differentiation varies. In the case of Africa, ethnicity is the most salient social cleavage. In fact, it is noteworthy that, 'fourteen out of fifteen most ethnically heterogeneous societies in the world are in Africa' (Easterly and Lavine 1997: 1219). It is hardly surprising that for a long time scholars have tended to explain African voter behavior in terms of the ethnic census

theory. These studies typically converge on the idea that African elections are mere ethnic census punctuated by voter turnout of the various ethnic groups (Horowitz, 1985). According to Sisk and Reynolds (1998), the census voting theory is based on the twin concepts of 'ethnic parties' and 'ethnic voters'. Horowitz (1985) defines an ethnic party as one which embodies the aspirations of one ethnic group and champions its course. Such a party draws the bulk of its support from one or a few closely related ethnic groups. In this regard, Dowd and Driessen (2008) argue that the political parties formed in Sub-Saharan Africa since the rebirth of multiparty politics in the 1990s have been ethnic.

However, as one scholar notes, '[the] social cleavage approach currently is out of favor because many cases have arisen to dispute its simplistic claims' (Van Cott, 2005:7). Evidence seems to suggest that the African voters are less "ethnic" than previously thought. Recent studies in African countries like Botswana, Mauritius, Malawi, Mali, Lesotho, Cameroon, Ethiopia, Kenya and Ghana show that ethnicity plays a modest role in vote choice (Cowen and Laakso, 2002; Posner and Simon, 2002; Arriola, 2003; Norris and Mattes, 2003; Bratton and Kimenyi, 2008) . In fact, key parties/candidates in African elections tend to get broad-based support beyond ethnic divides (Bratton, *et al*, 2005; Kasongo-Lumumba, 2005; Birnir, 2006).

ii. Economic Voting Theories

Economic voting is typically understood as ‘any change in a voter’s support for parties that are caused by a change in economic perceptions’ (Duch & Stevenson, 2008:41). This definition can be modified in at least three ways to capture economic voting in its totality. First, economic voting does not necessarily have to involve a shift in party support. Continued support for a party can also constitute economic voting if the decision is based on economic considerations. There is no reason to suspect that an economic voter would desert a candidate or party that, in his or her evaluation, has performed well on the economic front. It has been noted for example that Gambian voters are ‘not as gullible or uninformed’ as is often thought, and that their penchant to re-elect incumbents is driven more by ‘their savvy for economic gain’ than anything else (N’Diaye *et al*, 2005:98). Indeed, in a BBC interview with potential Gambian voters before the 2004 elections, one of the voters interviewed justified her support for the incumbent president Yahya Jammeh by noting that:

I support Yahya Jammeh because before he came, The Gambia didn’t have TV, good hospitals, schools, jobs or electricity- so we have to support him by all means because we want our country to develop⁷

Second, economic voting does not necessarily have to be a vote about a political party. It can as well be a vote about an incumbent legislator or even a civic leader. In many countries, legislators have huge developmental roles. Kenya for example,

⁷ BBC News: Interviews with Gambian voters.
<http://news.bbc.co.uk/1/hi/world/africa/6276283.stm> (06/08/09).

pioneered the Constituency Development Funds (CDF) in 2003 as devolved funds meant to ‘take development projects to the citizens at the grassroots level’ (Shah, 2007:491). The CDF concept has since been adopted by countries such as Malawi, Uganda, and Zambia. Tanzania introduced a bill in parliament to adopt CDF in 2009.⁸ In all these countries, CDF are controlled by legislators. If voters feel their living conditions have not significantly changed since the last elections, they have many options of venting out their anger. They can blame the central government and punish the ruling party in the next elections for not providing sufficient devolved funds. Alternatively, they can blame and punish the incumbent legislator for not using the funds prudently to improve their lives. Either way, that sort of vote is an economic vote since it is driven by reflections on economic living conditions.

Third, economic voting is not just about voters’ perception of the economy. It can refer to the real economic situation as captured in official government records. It is in this regard, that scholars like Tavits (2008) use GDP growth rate and inflation to measure economic voting. I therefore define economic voting as any vote for a party or candidate based primarily on economic considerations.

Although there are many ways of classifying economic theories, the most striking classification is the dichotomy between *sociotropic* and *egotropic voting*. The distinction emerged out of the debate about whether, in making voting decisions, voters are driven by their personal economic situation or by their assessment of

⁸ Tanzania government introduced a bill to create CDFs on July 23, 2009: The Citizen Newspaper. Dar es Salam –<http://allafrica.com/stories/200907240330.html> (08/15/09).

macro-economic trends. The former view coalesced into *egotropic voting theory*, while the latter evolved into *sociotropic voting theory*. The debate traces back to the study by Kramer (1971) who found that individual self-interest defined in terms of personal economic circumstances is the prime driving force in the voter decision-making calculus. However, another study by Kinder and Kiewiet (1981) found that voters are motivated more by considerations about the national economic conditions rather than by their individual economic circumstances.

Most studies on sociotropic voting tend to focus on how macro-economic conditions at the national level influence voting decisions. Among the macroeconomic factors that dominate the literature on sociotropic voting are national GDP, inflation and unemployment rates. I take a broader view of sociotropic voting not just as voting motivated by national economic conditions, but as any voting decision informed by aggregate living conditions, whether at the national level or at any aggregate level such as regions, provinces or districts. It is about voting decisions driven by concerns for collective economic wellbeing rather than private/ individual good. For example, concerns about the need to upgrade key roads in a constituency, erect dykes to prevent periodic flooding of a river bank in a district, conserve water catchment areas, or improve schools and health facilities in a province, are not private/individual goods but collective/public goods. Indeed, a poor road network, inadequate water, poor states of health facilities and low education standards in a given constituency directly feed into aggregate living conditions. In other words, 'sociotropic voting 'evaluates candidates on the basis of collective rather than

individual concerns' so that 'public rather than private interests determine one's political actions' (Carpini and Keeter, 1997).

On the other hand, *egotropism* which is also known as *pocketbook voting theory* emphasizes the individual economic circumstances as the key determinant of their voting decisions. In other words, when voters face economic hardships they tend to apportion blames on the ruling party even for their personal woes and therefore vote against it in protest (Reed and Brunk, 1984).

iii. The Investor-Voter Model

This study uses the investor-voter model, which is a variant of the rational choice theory. The model was developed by Samuel Popkin, John Gorman, Charles Philips and Jeffrey Smith (1976), in reaction to the work of the *Michigan school*. The central thesis of the Michigan school was that, electoral choices are shaped by party identification, which they regarded as, 'the prism through which voters formed opinion' (Rosenof, 2003:76). However, after the 1968 and 1972 US elections, it was apparent, even to the Michigan scholars, that voters did not vote purely along party lines. Issues seemed to have played a major role in shaping voter decisions in the two elections. As a result, in 1976, four Michigan scholars- Arthur Miller, Warren Miller, Alden Raine and Thad Brown- wrote, *A Majority Party in Disarray: Policy Voting in the 1972 Elections*, in which they sought to revise the American voter model. They noted that voters have changed, and admitted that voting decisions in the 1972 elections were based on issues, and not party identity (Rosenof, 2003).

Popkin and colleagues rejected the argument that voters have changed, and instead noted that, the Michigan school had been wrong all along in their conceptualization of the voter. They therefore, developed the investor-voter model, which has been described as, ‘a pioneering attempt to incorporate the cost of obtaining and processing information into the analysis of voter behavior’ (Ferguson, 1995:25).

In this section, therefore, I expound the investor-voter model by highlighting four propositions drawn from the model, which serves both as a description of an investor-voter and as the assumptions that guided this study. In this regard, I define *investor-voters* as those whose voting behavior conforms to the four propositions of the investor-voter model listed below:

Proposition 1: Investor-Voters are rational and capable of appraising the state of the economy from their personal experience even with inadequate information.

The investor-voter model borrowed some of its premises from earlier rational choice theories, notably the work of Anthony Downs (1957). One of its points of departure from Downs is the cost of information and how it shapes voter behavior. Downs argued that the high cost of information renders voters uninformed. Since the odds of one vote influencing election results are low, the cost of voting is greater than its benefits, and hence voting is not a rational act (Fishkin and Laslett 2003).

However, while acknowledging high information costs, Popkin *et al* (1976) argue that voters are still able to get information sufficient to form a broad general idea of political party and candidates’ positions on issues that concern them. They get this

information in the course of going about their daily activities. For example, potential voters learn about inflation when they notice rapid changes in retail prices. Using this information they form an opinion about the state of the economy and develop propositions on the basis of which they vote (Popkin *et al*, 1976).

Voters are, therefore, rational in the sense that, ‘they do not ignore the information they have, do not fabricate information they do not have, and do not chose what they do not want’ (Achen, 1992:198, cited in Sisk and Reynolds, 1998: 126). The idea that voters, despite scarce information, are capable of evaluating candidates and parties is shared by many scholars (Pomper, 1988; Popkin, 1994; Brug *et al* 2007).

Pomper, 1988, for example, notes that:

I do not see most voters as capable of understanding theories of Keynesian or supply-side economics, or the deadly logic of nuclear deterrence. But, I argue, such detailed knowledge is not only impossible, but unnecessary.⁹

It seems that the greatest dilemma for the voter is how to invest their votes in such a way that they can reap maximum returns from them. Sometimes voters get it right and elect leaders committed to their course, but in some cases they get it wrong. That is, because of inadequate information, ‘it is possible for both parties and voters to make mistakes. They may elect a party that imposes unexpected costs, or parties may adopt strategies that do not attract voters’ (Koetble 1991:231). Elections

⁹ Pomper, Gerald M. 1992. *Voters, Elections and Parties: The Practice of Democratic Theory*. New Brunswick, NJ: Transaction Books. Page 26.

therefore give voters a chance to rectify mistakes made in past elections by shifting support to more promising parties or candidates.

If voters are capable of assessing the state of the economy, one can expect that the voters' perceptions of the national or regional economic trends would closely reflect objective economic trends. In essence, just as one can ask voters their view of the past or present national or regional economic situation in a survey, one can also get the information about the actual economic situation from records of the economic trends. At the same time, just as one can ask voters how they voted, one can also check the outcome of elections. If this is so, then aggregate data about voting results and the real economic conditions are sufficient to enable us get a fair assessment of the influence of economic conditions on election outcomes.

Proposition 2: Investor-voters are aware that voting is an individual act but its outcome yields both personal and collective benefits.

The investor-voter model is anchored on the premise that a voter is an investor and each vote is 'an investment in one or more collective goods under conditions of uncertainty with costly and imperfect information' (Popkin *et al* 1976:780). Popkin *et al* notes that an election is a collective good in the sense that both its outcome and the government that it puts into office are for the entire electorate. In fact, they view a political party as 'a coalition of voters coordinating their efforts to pursue a set of collective goods' (Ferguson, 1984: 155). For example, if a voter decides not to vote for an incumbent legislator because he or she failed to secure employment for the

voter, it is doubtful that other voters will fail to vote for the incumbent for the same reason unless they have similar or related grievance against the incumbent legislator. That is, a voter's personal experience is only relevant if it is shared or endorsed by several other voters so that it becomes a mobilizing issue. But once an individual's personal experience becomes a mobilizing issue, it ceases to be a personal but a group shared experience. This explains why 'a person may vote against a presidential candidate because she thinks the country has been harmed by his policies, even though she herself is personally better off' (Mueller, 2003:460-461).

Proposition 3: Investor-voters are less attached to political parties and candidates, and can easily shift allegiance if dissatisfied with the incumbents.

The investor-voter model posits that partisanship is less stable and the strength and durability of attachment to political parties is a function of the extent to which voters perceive the party position to be in line with their core issues. The non-enduring nature of partisanship is a testimony that voters can easily shift political allegiances. It is shifts in allegiance that alter the fortunes of political parties during elections, as some gain and others lose seats. Voters' evaluations of whether their investment in voting has yielded satisfactory dividends determine whether they stick with the same choices they made in the last elections or shift loyalty.

Scholars on African politics are increasingly coming to terms with the reality that voters are not as committed to political parties as is often thought. When deciding the party to support, voters consider, among other factors, the economy, government

performance, and how the country is doing generally (Reynolds 1999). The weak attachment to parties is captured by a British Broadcasting Corporation (BBC) interview with Gambian voters before the 2004 elections. One respondent noted:

I am supporting Ousainou Darboe's United Democratic Party because it's time for change. We've seen what President Jammeh has done, now let's give somebody else a chance. If Mr. Darboe doesn't perform well, we'll get somebody else.¹⁰

Proposition 4: The voting behavior of investor-voters is influenced by their living conditions.

The model predicts a strong relationship between voters' living conditions and their political behavior. More specifically, as voters' living conditions changes, their political participation also changes in response to emerging opportunities and realities. Investor-voters care about outputs and hence look out for indicators of competence among parties/candidates. They use past performance of incumbent parties as a gauge for measuring their competence. That is, 'as an investor, the voter is concerned not with abstract policies of the candidates, but rather with what the candidate [or party] can be expected to deliver' (Ferguson and Rogers 1984:161).

¹⁰BBC News: Interviews with the Gambian Voters. http://news.bbc.co.uk/2/shared/spl/hi/pop_ups/06/africa_voters_views_in_the_gambia/html/7.stm (06/08/09)

2.5 Research Methodology

i. Research Hypotheses

This study tests the hypothesis that *the higher the living conditions, the lower the electoral volatility*. The hypothesis follows directly from the fourth proposition of the investor-voter model stated above. Before testing this hypothesis or even specifying the variables, it is vital to reflect on whether the direction of causality has been modeled properly and the implications for a shift in the direction of causality. That is, why do I expect living conditions to influence electoral volatility and not vice versa? Is it not possible that low volatility creates party stability, which leads to a better policy making environment and hence higher HDI?

Generally, the causal direction of a model is defined by theory which provides the perspective from which to view the relationship between variables. The investor-voter model is part of the economic voting theories, which specify that the economy is what drives politics. In fact, in very broad terms, this study attempts to establish the causal link between levels of development and democratic values. From Lipset's (1959) seminal work, we derive the idea that socioeconomic advancement enhances democracy. Several scholars have since come to the same conclusion. For example, in a pooled time-series analysis of 131 countries, Burkhart and Lewis-Beck (1994) found that economic advancement aid democracy, but democracy does not facilitate economic development (Burkhart and Lewis-Beck cited in Lane and Ersson 1999). This calls for modeling causal effects from the economy to politics.

ii. Key Dependent Variable: Electoral Volatility

Electoral volatility is a measure of the change in the distribution of seats among parties in the national legislatures, which result from shifts in voter preferences in successive elections (Cortana 1999; Clarke and Foweraker 2001). The most widely used measure of electoral volatility is the Pederson Index which is half of the sum of the net changes in the electoral strengths of all competing political parties. Party electoral strength is measured in terms of the votes or seats received in an election. The Index is computed using the formula:

$$\text{Electoral Volatility} = \sum_{i=1}^n \frac{1}{2} |V_i(t) - V_i(t + 1)|$$

where n is the total number of political parties which competed in the elections; and $V_i(t) \Delta P_{i,t}$ is the change in number of votes received by each party in two successive elections (Pedersen 1979; Clarke & Foweraker 2001). The value of Volatility (EV) lies within the parameters: $0 \leq EV \leq 100$. Volatility score of zero means that there is no change in party strengths and no seats lost or gained by any party. A score of 100 implies that there is complete shift in party loyalty, and a complete change in the legislatures' composition.

At the national level, I used seats rather than votes and therefore substituted V_i for votes with S_i for seats in the above formula. When computing electoral volatility using seats, only political parties which get at least one seat in either of the two successive elections become relevant. In this regard, n is now the total number of political parties that secured at least one seat in at least one of the two successive

elections. The decision to use seats rather than votes is partly motivated by problems of data availability given that ‘the figures for share of votes are missing for more African elections than those for share of seats and even when available are likely to be less reliable...’(Lindberg 2006:41). Similarly, several past studies on volatility in Africa such as Basedau *et al* (2007) have also used seats rather than votes.

Furthermore, seats are important at the national level because party seat-share shapes the structure of legislative decision making and public policy formulation. When a party enjoys a significant majority in the legislature, it can set and pursue its policies and legislative agenda without entering into a coalition (Lindberg 2006). Serious political parties are formed first and foremost to compete for and win power so that they can implement their policies. To be able to make or significantly influence public policy a party must gain foothold in the legislature. It is therefore the number of seats rather than the number of votes that determines the parliamentary strength of a party. In the words of Ersson and Lane (1998), ‘what counts first and foremost for the parties as political players are the consequences of election outcomes for their mandates in parliament’ (Pennings and Lane, 1998:32).

Botswana, for example, is regarded as a stable democracy with a dominant party, the Botswana Democratic Party (BDP). The party has won all the ten elections held and has ruled the country since independence in 1965. However, the fact that BDP wins the majority of seats masks the reality of the stiff challenge it often faces in parliamentary elections. In the 2004 elections for example, BDP won 80% of the

seats although it had only 52% of popular votes. Furthermore, in almost 20 of the 57 constituencies, the party barely scratched through with razor-thin winning margins of as few as 2% of votes cast. In several constituencies, such as *Kglagadi North*, *Selibe Phikwe East*, *Letlhateng East*, *Gaborone North* and *Kgatleng West*, the contests were too close to call and the winning margins were even less than the spoilt votes. For unclear reasons, even where the winning margin is just a handful of votes, it is usually the BDP candidate who wins¹¹. The slim margins of victory notwithstanding, the BDP got a clear majority in the national assembly to carry out its policy and legislative agenda.

To underscore this fact, one needs to look at close contests in countries with large number of voters per constituency such as Ghana. In the 2004 Ghanaian elections, the National Patriotic Party (NPP) candidate won *Ablekuma Central* constituency in the Greater Accra region by 47,731 votes against 44,027 votes for the National Democratic Congress (NDC) candidate.¹² While the NDC candidate proved he was no pushover in the constituency, the question is: Of what use are the 44,027 votes to the NDC now that they did not win the seat? True, it shows that the party has some following, but what value did that add to their quest to govern Ghana in 2004? The key point here is that in the First-Past-the-Post electoral system neither the margin of victory nor the votes received by the losing candidate matters when it comes to

¹¹ Elections Institute of Southern Africa, 2005: <http://www.eisa.org.za/WEP/botswana.htm>.

¹² Electoral Commission of Ghana: <http://www.ec.gov.gh/>

seat distribution. In fact even in proportional representation, votes received matter not as ends but as a means of getting seats.

However, I should point out that in Kenya's constituency level analysis, as well as the South African provincial and municipal level analysis, I used votes rather than seats to measure electoral volatility.¹³ In Kenya, this was necessary because at the constituency level, there is only one seat, and hence it makes no sense to measure volatility of seats. In the case of South Africa, there are no constituencies in the first place and hence only data on votes are available. Under South Africa's proportional representation, the percentage of seats and votes received tend to be close. In any case, it is apparent that proportional representation 'produces a nearly-identical correlation between the percentage of votes that a party receives in an election and the percentage of seats that it wins in the legislature' (Worshinsky, 2008:187).

In computing Pedersen index, I made and consistently applied some decision rules to get a uniform scale. First, where there is bicameral legislature, the study focused on the lower house in line with the trend in the literature (Mainwaring 1999; Mozaffar and Scarritt 2005). Second, where two or more parties merge or form coalition in between elections, the sum of the seats won by the parties in the past election is compared with seats won by the merged party/coalition as done by

¹³ Using seats to measure volatility at the cross-national level and, votes at the in-country level, does not pose any analytical challenges. This would only be a concern, if the goal of the study is to test whether the economy predicts volatility better at one level than the other. However, this study does not intend to go that far; it is content with testing whether the economy is a predictor of volatility at different levels of aggregation independently.

Bartolini and Mair (1990), as well as Wheatley (2005). Third, where a party splits or a coalition breaks, I follow the example of Bartolini and Mair (1990), and compare the seats received by the original party/coalition before the split with the total number of seats received by all the factions after the split. Four, I treated independent candidates as though they constitute one distinct party since they also gain and lose seats to political parties in successive elections.

Finally, unlike Bartolini and Mair (1990), who treat a party that has changed names between elections as a new party, I treat such a party as the same party. This is in line with Birch (2001), Krzysztof Jasiewicz (in Webb and White, 2007) as well as Bogaards (2008). In any case, parties mean more than just names. In addition to names, they have structures, constitutions, ideology, leadership, membership, flags, symbols, assets and liabilities. Like business firms, political parties rebrand in order to remain relevant and appeal to a broad support base. It is the need to rebrand that led National Party (NP) in South Africa, for example, to change its name to New National Party (NNP). However, ‘even the slight name change, adding “New” to National Party, made no difference’ in the eyes of the voters (Reynolds, 1999:90).

I recognize that not all volatility results from shift in voter preferences. Indeed, Birch (2001) identifies three components of volatility. There is volatility due to shift in the composition of the electorate, change in the range of parties available, and change in voter preference. Change in the electorate composition would only affect volatility if new voters tend to vote differently from the others. However, while

there are studies that suggest that change in the composition of the electorate influences election results (Bernhagen and Marsh, 2007), other studies have found that change in the composition of the electorate does not matter (Teixeira, 1992; Rosema, 2007). Teixeira (1992) for example argues that there is no significant difference between those who vote and those who abstain, and hence change in the composition of the electorate does not matter. In fact, a study of elections in Chile in the pre- and post-authoritarian periods found that the change in the composition of the electorate did not significantly alter the support enjoyed by political parties in the post-authoritarian period (Valenzuela and Scully, 1997).

Lesotho is a good example of how change in the composition of the electorate failed to alter electoral fortunes of political parties. Lesotho became independent in 1965 as a constitutional monarchy. The post-independence elections were heavily tilted in favor of Basotho National Party (BNP), which narrowly defeated Basotho Congress Party (BCP). However, BCP defeated BNP in the next elections in 1970. Instead of handing power to BCP, Prime Minister Leabua Jonathan who was the BNP leader, suspended the constitution and created an authoritarian regime, which lasted until he was overthrown in 1986. The military regime organized democratic elections in 1993. Interestingly, the party system did not change despite the twenty-three year authoritarian and military interlude. In the 1993 elections, BCP won all the 65 contested seats. This time, the military handed over power to BCP but a year later, BNP conspired with the monarch and the military to overthrow BCP forcing SADC to intervene and restore the BCP government. In 1997, BCP split, with the smaller

faction retaining the name and the major faction headed by the prime minister, becoming Lesotho Congress for Democracy (LCD). In 1998, LCD won 77 of the 80 seats. As before, BNP rejected results and organized protests, which culminated into widespread violence and an attempted overthrow of the LCD. It took the intervention of Botswana and South Africa to restore order after which a new constitution was negotiated, which made Lesotho the first African country to adopt the mixed member proportional electoral system. In the 2002 elections, LCD won 79 of the 80 seats elected through First-Past-The-Post System. It was however not entitled to a share of the 40 seats distributed on the basis of proportional representation. 21 of these seats went to BNP, while the LPC, which split from LCD, got 5 seats (Freedom House, 2006:413-414). In essence, since 1970, voters have always identified with one party despite generational change.

According to Birch (2001) volatility within the existing party system needs to be separated from volatility due to the emergence of new parties, or *party replacement*. I find this separation unnecessary in the context of this study. If voter v_i supports party p_i in elections at time t , but supports p_n at elections at $t+1$ despite the fact that p_i is also competing in the elections at $t+1$, then v_i has shifted preference. I refer to such a voter as a *defector-voter* because he or she has abandoned the party he or she supported and now supports a different one. From our earlier discussions, it becomes clear that investor voters are in fact defector voters due to their propensity to shift preference for rational considerations. It is true that the emergence of new parties widens the scope of choice for voters and that a new party may sometimes be

ideologically closer to the voter. However, it is also true that elections do not give voters a chance to express their optimum preferences. As already stated, voter preferences at t and $t+1$ shows their best options in the circumstances and not necessarily their optimum choices. Therefore, when voters consciously abandon earlier party preferences for a new party, the reason for doing so notwithstanding, they have shifted party preferences. Since the reasons for shifting party preferences are what the study is interested in, if we isolate party replacement from electoral volatility, we omit those elements of shift in voter preferences which are embedded in the replacement scores.

However, if p_1 does not participate in elections held at $t+1$, then v_1 is not considered to have shifted preference even if he/she votes for a new party. I refer to such a voter as a *deserted-voter* because it is the party that has deserted him or her and not the other way round. Since we cannot tell whether those who supported p_1 at t would have supported the same party at $t+1$ if it had participated, it is unfair to the voters to conclude as Birch does, that the voters have shifted preference. I therefore, refer to the seats held by p_1 after elections at t as *deserted seats* since p_1 is not fighting to retain them at $t+1$.

In computing volatility therefore, I subtracted the share of the deserted seats from the Pedersen's index. Since there is no way of knowing the parties that gained the *deserted seats* from aggregate data, I obtain volatility due to preference shift by subtracting the total share of the deserted seats from the Pedersen index. To

understand the reason for, and the process of subtracting the deserted seats, I take a close look at the Pedersen index. The reason why Pedersen index involves dividing seat changes by two is because electoral volatility results from a zero sum game in which votes or seats lost or ‘deserted’ by one party (or independent candidate) are simultaneously gained by another party or candidate. In other words, seats changed have a dual identity-each seat changed is both a *lost seat* and a *gained seat* at the same time. When you add all the seats that have changed hands among parties after two successive elections, you actually add both losses and gains and in the process double the net seat change. You must then divide by two to get real net seat change.

In order to get volatility due to shift in voter preference, I first expressed all the seats gained by parties as a percentage of the seats contested in the year when the respective elections were held. This ensures that even where there were changes in the number of seats, all the seat shares were measured on the ratio scale. I then created a computation table similar to Table 1 which shows steps in calculating electoral volatility due to preference change. Next I inserted the party seat shares for elections at t and $t+1$ in columns (i) and (ii) respectively and indicated *absent* where a party did not participate in elections. I then calculated the difference between $S_i(t)$ and $S_i(t+1)$ and inserted in column (iii). Column (iv) is half of the difference between seats obtained during the first and the second elections, and it shows the contribution of each party to the total electoral volatility. The totals for column (iv) is given by the formula $\sum [\frac{1}{2} [S_i(t) - S_i(t+1)]]$ which is actually the Pedersen index and shows the total electoral volatility. Up to Column (iv) therefore,

the computation for the Pedersen index is complete and from our example, electoral volatility is 70.

Table 1: Calculating Electoral Volatility due to shift in Party Preference

Party	Pedersen Index				Deserted Seats Gained	Volatility due to Δ Preference
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	$S_i(t)$	$S_i(t+1)$	$S_i(t) - S_i(t+1)$	$\frac{1}{2}[S_i(t) - S_i(t+1)]$	$s_d(t+1)$	(iv)- (v)
A	60	20	40	20	0	20
B	20	<i>Absent</i>	20	10	<i>Absent</i>	10
C	10	60	50	25	10	15
D	<i>Absent</i>	20	20	10	10	0
E	10	0	10	5	0	5
Total	100%	100%	140	70	20	50

Note: Columns (i), (ii) and (v) as given information. Column (v) is not calculated.

However, the Pedersen index measures total volatility and captures even those changes in seat distribution which have nothing to do with shifts in voter preference. Such changes that do not come about due to voter behavior include, for example, seat redistribution resulting from *deserted seats* which I have already explained. My next task therefore, was to eliminate any known components of the total electoral volatility that did not result from a shift in voter preference. For reasons already explained, I targeted *deserted seats* for elimination at this stage. I therefore established for each party, how many of the seats gained at $t+1$ are deserted seats and then inserted them in column (v). The total for column (v) is $\sum [s_d(t+1)] =$

20 and is the volatility due to deserted seats or the contribution of deserted seats to total electoral volatility. Electoral volatility due to voter preferences is 50, which is the difference between the sum of Column (iv) or the Pedersen index, $[\sum_{i=1}^n \frac{1}{2} |S_i(t) - S_i(t + 1)|]$ which is 70 on the one hand, and the sum of column (v) or total deserted seats, $\sum [s_d (t + 1)]$ which is 20. In the final analysis therefore, I computed electoral volatility due to shift in voter preferences using the formula:

$$\text{Electoral Volatility} = [\sum_{i=1}^n \frac{1}{2} (|S_i(t) - S_i(t + 1)|)] - [\sum_{i=1}^n |Sd_i (t + 1)|]$$

This formula can be simplified and rewritten as follows:

$$\text{Electoral Volatility} = [\sum_{i=1}^n \frac{1}{2} [|S_i(t)] - [S_i(t + 1) + 2 Sd_i(t + 1)]]$$

where s_d are deserted seats. In using the formula above, as is the case with Pedersen index, $[S_i(t) - S_i(t + 1)]$ is read as the difference between seats received in the first and second elections, so that: $[S_i(t) - S_i(t + 1)] = [S_i(t + 1) - S_i(t)]$. Since volatility cannot be negative, the greater of the two values, $S_i(t)$ and $S_i(t + 1)$, should be assigned the positive sign, while the smaller one should be negative.

In Table 1, I have calculated the deserted seats by looking only at the parties that received those seats. However, it may sometimes be impossible to get details as to which parties received the deserted seats. Even then, it is still possible to get deserted seats by looking at the parties that supplied them. In Table 1, deserted seats = $[\sum_{i=1}^n [Sd_i (t + 1)]] = 20$, and were only supplied by party B. In effect therefore, the total deserted seats equals $S_i(t)$ for party B which is the same figure appearing

in column (i) for party B. If there are more parties which shed off deserted seats, we add the number of seats held by all of them at t and subtract from Pedersen index.

One may ask why we have not treated party D the same way as B. The reason is that before a preference can be shifted, it must have been expressed in the first place and, once a preference is expressed, it can only be shifted at a date later than when it was expressed. In other words, whether a preference shift has occurred or not is assessed at $t+1$ and not at t . Any party which participated in elections at t but not at $t+1$ such as B, can only give away its seats but has no chance of gaining a seat due to preference change among voters. However, if a party only participated at $t+1$ like party D then there is no doubt that the seats obtained were previously held by another party. Of course, the assumption here is that no additional seats have been created. There is therefore a possibility, however remote, that at least some of the seats acquired by such a party were held by one or more of the parties competing at $t+1$. In fact, in Table 1, it is apparent that besides winning 10 of the deserted seats, party D also won another 10 seats from a party that participated in elections at t and $t+1$. In other words, some voters shifted support from the party they had supported in elections at t to party D. There is no other way of referring to voters who supported another party at t but supported D at $t+1$ when the other party was also competing, other than to say they shifted their preference to D.

It should be noted that more than half of the countries in this study did not have any deserted seats. Some of these countries include Botswana, Ghana, Lesotho, Gambia, Kenya, Tanzania and Namibia. Among the remaining countries, most of them have deserted seat values less than 7.0. However, there are a few countries with large deserted seat values such as Comoros with 38.9, Benin with 28.8 and Guinea with 16.7. While the measure of volatility I have presented here can still be polished further, it is a more refined index of volatility due to shift in voter preference.

iii. Key Independent Variable: Voters' Living Conditions

This study uses the Human Development Index (HDI) as the main indicator of aggregate living conditions. The choice of HDI is influenced by a number of factors. First, the GDP growth rate which has traditionally been used as an indicator of economic well-being is increasingly being viewed as providing an incomplete view of living conditions. In fact, 'most economists acknowledge that GDP is not a complete measure of economic well-being. It omits many factors that affect quality of life' (Loucks 1998:52). Second, it has been noted that sixteen out of eighteen, or 89%, of the countries with the lowest volatility are those with the highest HDI (Katz and Crotty, 2006:209). This observation closely mirrors the theoretical expectation that higher living conditions are likely to breed lower volatility.

Finally, HDI is considered to be broader than GDP and combines elements of both social-economic progress and quality of growth (Haq, 1995). The computation of HDI combines longevity or life expectancy; knowledge measured by adult literacy and the mean years of schooling; and living standard measured by *percapita* GDP

adjusted for purchasing power parity (Lindberg, 2006). This study used HDI data for the second election year for each country as reported in various United Nations' Human Development Reports. In the case of Kenya, I used the HDI as given in *The Third Kenya Human Development Report 2003*. For South Africa, I used *The South Africa Human Development Report 2003* and *The Western Cape Provincial Economic Review and Outlook 2006*.

In addition, this study uses Rural Poverty Incidence, or the Headcount Index, as an indicator of living conditions at the constituency level in Kenya. As already stated, the use of poverty incidence rather than HDI is due to lack of data on the latter. The Headcount Index measures the percentage of the population of an area (in this case a constituency) with consumption levels below the rural poverty line. The poverty line is based on household consumption expenditures needed to obtain a 'food basket', based on a minimum nutritional requirement of 2,250 calories per adult equivalent per day. It also has a 'non-food basket' component, which includes a wide range of nonfood items like housing, transportation, education, and health. Regional price adjustments were applied to incorporate variations in regional cost of living¹⁴.

In the case of South Africa, I also used unemployment as an additional indicator of living conditions. This was necessary since the provincial level analysis yielded a puzzle whereby provinces with relatively higher living standards tended to register

¹⁴ World Bank. 2003. *Poverty and Inequality: Geographic Dimensions of Well Being in Kenya: Where are the Poor?* (Volume I) : <http://go.worldbank.org/Z1Q8HEQOE0>

high electoral volatility contrary to theoretical expectations. Fortunately, data for unemployment rates were readily available and were therefore used to corroborate the results obtained using the HDI.

iv. Ethnic Cleavage

In this study, ethnic cleavage is measured using Ethno-linguistic Fractionalization Index (ELF). ELF was developed by a team of Soviet Union researchers. It is a measure of the probability that if you randomly select two people in a given country, they will be from different ethnic groups. It ranges between 0 and 1, where 1 is completely heterogeneous and zero is completely homogeneous. Higher ELF scores imply greater degree of ethnic fragmentation and vice versa. ELF is widely regarded in the literature as the best measure of ethnic fragmentation to date (Easterly and Lavine, 1997). Among scholars who have used it in the study of Africa include Arriola (2008). Ethnic fragmentation is given by the formula: $ELF = 1 - \sum_i^m \left(\frac{n_i}{N}\right)^2$ where m is the number of ethnic groups; n_i is number of people who belong to the i^{th} ethnic group; and N is the national population (Easterly and Lavine, 1997). I calculated the ELF for African countries from the CIA World Fact Book. I also calculated provincial and constituency/municipality-level ELF for Kenya and South African, using data derived from various sources as shown in the appendices.

v. Voter Turnout

I take voter turnout as the percentage of eligible voters who actually cast their votes during elections. Although specific eligibility requirements vary across countries, in many African countries, citizens who attain a certain age are eligible to register as voters. Voter turnout is taken as the percentage of registered voters who cast votes.

vi. Political Freedom

I define political freedom as the amount of space left between individuals and groups on the one hand and the coercive power of the state on the other hand. The greater the space between citizens and the coercive powers of the state, the freer the citizens. Political freedom has been widely used in empirical studies as a proxy for the level of democracy in a country (Bratton and van de Walle, 1997; Leduc, *et al*, 2002; Ali and Isse, 2004; Lindberg, 2006). The latter used civil liberties alone as an indicator of the level of democratization in a society, and notes that, ‘the Freedom House Index is the most widely accepted as matching empirical’ reality (p. 102). Leduc, *et al* (2002) used the Freedom House Index rating of 1-3 as a basis for selecting the 58 electoral democracies which they studied.

In this study, I used the Freedom House Index derived from the mean of political rights and civil liberties, each based on a 7-point ordinal scale. The Freedom House Index ranges from 1-7 where 1 is free and 7 not free. The index also has qualitative values so that 1- 3 is regarded as *Free*, 3.5-5.0 is *Partially Free* while 5.5-7 is *Not Free*. The Index is available for all countries annually.

vii. Electoral Systems

I used electoral system to refer to the three key formulas used to translate votes into seats in Africa, namely, FPTP, proportional representation, and mixed system. Since $k=3$ in this case, I created two dummy variables ($k-1$), D_1 and D_2 . I used FPTP as the base, while the proportional representation, and mixed system became D_1 and D_2 respectively. The dummy variables, D_1 and D_2 were each dichotomized and coded, 0 if a state lacks the electoral system corresponding to that variable, and 1, if it has it.

viii. Concurrent Elections

This is a dummy variable controlling for whether parliamentary and presidential elections are held concurrently, so that not concurrent = 0 and concurrent = 1.

2.6 Data Collection and Analysis Methods

i. Case Selection: Countries Selected for Cross-National Study

African dynamics require very careful selection of cases for study, particularly if the conclusions are to be generalized to the continent, or even to Sub-Saharan Africa. There are regional patterns of institutional design and political culture that can affect results if case selection is biased towards one region. As regards electoral systems, Anglophone and Eastern African countries adopted plurality systems, while Francophone and Southern African countries adopted proportional systems (Stack and Lui 1999). Some scholars warn that 'Africa is a vast continent and care must be taken not to overgeneralize. There is much variation between countries, both as regards their current situations and trends over time' (White, *et al*, 2001:6).

As late as 1989, single party authoritarian regimes were still commonplace in Africa. However, from around 1990 a new wave of democratic renewal swept through the African continent so that by 1995, several African countries had already held at least one multiparty election. It is for this reason that the study focuses on two successive elections held between 1995 and 2005 in Sub-Saharan African countries. The idea was to get as many elections done as close to each other as possible. Since the study covers a ten year period, those countries that did not have two elections during this period were omitted from the sample. Countries in the Great Lakes and the Eastern African region were particularly affected by political upheavals. As a result, Sudan, Democratic Republic of Congo, Congo Republic, Burundi, Rwanda, Somali, Eritrea and even Angola did not hold two legislative elections during this period. Also left out are the so called 'no party democracies' of Uganda and Swaziland. Although Uganda held elections in 1996 and 2001, and Swaziland also held elections in 1998 and 2003, political parties were not allowed to participate in the elections. Uganda has since adopted multiparty democracy. In addition, there were countries that were left out because data of one kind or the other was not available. Although the countries were chosen on the basis of data availability, they spread across Africa and capture key variation in the continent. The 30 study countries are shown in Figure 2. The number of countries included in this study is larger than, and includes 18 of the 21 countries studied by Bogaards (2008). It also includes 26 of the 31 countries studied by Ishiyama (2003).

Unlike most past cross-national studies on electoral volatility that only select countries considered to be democratic, this study selected countries that have had two consecutive elections, regardless of their democratic credentials. In my view, selecting study countries on the basis of whether or not they are democratic amounts to selecting cases on dependent or independent variables as the case may be. Instead, I use a country's level of political freedom as a variable and test whether it is a statistically significant determinant of electoral volatility.

ii. Case Selection: Kenya and South Africa

The greatest challenge that this study faced was data availability. The choice of Kenya and South Africa was first and foremost based on pragmatic considerations of data availability at levels below the state in a comparable format. Besides this, the two countries held their third elections since the rebirth of multiparty politics in the continent during the period under review. South Africa's third all-inclusive elections were held in 2004, while Kenya's third multiparty elections were held in 2002. Both elections are the focus of this study. While South Africa is the largest economy both in the Southern region, and in the whole of Africa, Kenya is the largest economy in Eastern Africa and by some estimates, the third largest in Sub-Saharan Africa (Standard Chartered Bank, 2007).

The struggle for liberation from colonialism in the case of Kenya, and apartheid in the case of South Africa, were both violent. This helped to create dominant parties and leaders associated with these struggles. Kenya's founding president, Jomo Kenyatta, was incarcerated for nine years, which was a third of the time Mandela spent in jail. Upon his release, Kenyatta capitalized on the heroic image arising from his role in the liberation struggle, to create and preside over an authoritarian regime, which was just as undesirable as apartheid. While the dominant ANC won the third election, KANU which had ruled Kenya since 1963, lost the third elections.

In terms of electoral systems, Kenya uses a First-Past-the-Post System while South Africa uses list proportional representation. While Kenya is an outright unitary state, South Africa is a federal state with a national government as well as provincial and municipal governments (Hueglin and Fenna, 2006). In Kenya, both the legislature and the president are directly elected through universal adult suffrage, but in South Africa, votes are cast for political parties, which nominate legislators according to votes received. It is the legislators who elect the president.

iii. Case Selection: Kenya's 50 Constituencies

As already mentioned, I used poverty incidence at the constituency level as an indicator of living conditions. Since poverty incidence data was only available at the *Divisional* level, I began by matching *Divisions* with their respective constituencies. This yielded close to 100 constituencies from which I selected fifty for this study. I

selected one constituency per district and two constituencies for the city of Nairobi, and larger districts like Mombasa and Machakos. After selecting the constituencies, I then calculated their electoral volatility scores.

iv. Case Selection: Western Cape and its 17 Municipalities

As already pointed out, Western Cape was selected for in-depth study because it had the highest electoral volatility in South Africa in 2004 and therefore could help in unlocking the South African puzzle explained in section 3. Given that it was not possible to get municipal level data for all the provinces, particularly for HDI, the Western Cape data that was available for 17 municipalities proved adequate. Data availability therefore, played a key role in case selection.

v. Small Sample Size, Bootstrapping and Correlation tests

This Study uses bootstrap¹⁵ methods as well as multivariate and bivariate correlation tests. It is widely accepted that a bootstrap sample is as good as the original sample from which it is drawn. In fact, Hoyle argues that a good bootstrap is one whose sample distribution resembles the population distribution and that, ‘the larger the N, the more likely it is that the distribution of a sample resembles the true population distribution’ (Hoyle, 1999: 90). This raises questions about the lower limit threshold for N that can yield statistically significant results. I rely on the observation that ‘a

¹⁵Although I have included the other bootstrap texts used in the reference section, it is important to point out that the bootstrapping methods used here have been largely drawn from John Fox. 2002. *Appendix to An R and S-PLUS Companion to Applied Regression*.

sample size of 30 is held by many to be the minimum number of cases if researchers wish to use some form of statistical analysis in their data' (Cohen *et al*, 2003:93).

In chapter three, which is a cross-national analysis of Sub-Saharan Africa, there are 30 countries and hence the sample size stands at the threshold of what many scholars consider as the cut off for a large sample. Although 'the bootstrap provides reliable statistical inferences for small samples, irrespective of the distribution type' (Bardossy and Fodor, 2004: 35; see also Fox, 1999: 494), there is a tolerable limit to small sample size that can be meaningfully bootstrapped. Certainly when $N=8$ or 9 bootstrapping may not be a viable option.

In light of this, I had two options. First, I could increase the sample size. In the case of Kenya for example, the 'first' multiparty elections were held in 1992, and hence I could use 1992 as the base year and measure volatility for the 1997, 2002 and 2007 elections. This would increase the sample size threefold from eight to twenty four. Although twenty four observations are still below the threshold of thirty, it would be feasible to do bootstrapping. However, while raw data from which electoral volatility can be calculated is available, the 1992 and 2007 living conditions data were not available. This option was therefore not used but would be recommended for anyone wishing to replicate this or undertake a similar study.

The second option, which I adopted, was to simply use measures of association to test correlation at the provincial level and then seek modest constituency-level data (in the case of Kenya) or municipal-level data (in the case of South Africa) to test

robustness. This way if the association at the provincial level is strong and there is an equally strong causal link at the constituency or municipal level, we can be more confident that the relationships being tested exist. Consequently, for all correlation tests in this paper with $N < 20$, I have used two measures of association- Kendall's w coefficient of concordance, and Pearson product moment correlation coefficient. The latter is computed using *cor.test* function, while the former is computed using *Kendall.w* function in the *Concord Package*¹⁶ in the R Program¹⁷. In addition, I have also used the test of difference of means and the test of proportions.

Pearson's r measures the linear relationship between two variables and is useful when dealing with two quantitative variables measured at the interval or ratio scales. Its values ranges from -1 to +1 where +1 is a perfect positive linear correlation while -1 is a perfect negative linear correlation (Warner,2008). The decision to use *Pearson's r* is based on several factors. First, 'Pearson is the most widely used bivariate correlation statistic' in the social sciences (Meyers *et al*, 2006: 107; see also Nachmias and Guerrero, 2006:287; Dalton, 2008: 262). Second, besides testing bivariate correlation, *Pearson's r* enables us to determine how much variability in y can potentially be accounted for by a given x . In other words, 'it is possible to test the significance of the correlation by transforming it to a t-distributed variable,

¹⁶ Lemon, Jim and Ian Fellows. 2007. *Concord Concordance and Reliability*. R Package Version 1.4-9. <http://cran.r-project.org/web/packages/concord/index.html>.

¹⁷ R Development Core Team. 2008. *R: A Language and Environment for Statistical Computing*. Vienna, Austria. ISBN 3-900051-07-0, URL: <http://www.R-project.org>.

which will be identical with the test obtained from testing significance of the slope of either the regression of x on y or vice versa' (Dalgaard, 2002:107).

Third, even though the statistical significance of a correlation depends on sample size, the latter only raises the threshold for the former so that with a very large sample size of 400 or more, statistical significance can be attained even when $r = .11$ but 'with a sample size as small as 9 we need a Pearson r of about .67 or better to achieve statistical significance at the .05 level' (Meyers *et al*, 2006:114). Finally, it has been noted that Pearson's r is fairly robust measure of correlation in the sense that the value of Pearson's r is *not* significantly affected by modest violation of skewness, heteroscedasticity, or non-linearity (Sprinkle and Piercy, 2005).

One advantage of Kendall W is that it is resistant to sample size, and works well even with samples of less than 7. In fact, when $N > 7$, then the value of χ^2 can be calculated and used to determine the significance of W (Kothari 2004: 309). The study expectation is that, if volatility is caused by a combination of HDI, ELF and voter turnout, then there should be a greater concordance in the ranking of the four variables across the eight provinces of Kenya. However, if none or only one of the independent variables is causally related to electoral volatility, then there should be a greater discordance, or weak association between the variables taken together.

CHAPTER III: CROSS-NATIONAL ANALYSIS OF VOLATILITY IN SUB-SAHARAN AFRICA

3.1 An Overview of Elections in Sub-Saharan Africa

Sub-Saharan Africa refers to the whole of Africa except the northern countries of Egypt, Morocco, Libya, Tunisia and Algeria, which have considerably different socio-cultural, political history and orientation (Lindberg, 2006). Cowen and Laakso (2002) argue that the rebirth of multiparty democracy in Africa in the 1990s, created a mistaken impression that elections are new and probably alien to Africa. Yet, more than a century and a half earlier, suitably assimilated Africans in Senegal were already voting for representatives in the French National Assembly by 1848. The first legislative elections in Anglophone Africa were held in the 1920s in Sierra Leone, Ghana, Kenya, Zambia and Nigeria. From 1946, Francophone Africa was allowed to vote, both for the French assemblies and the local governments. More elections were to follow in the 1950s in Malawi, Tanzania and Uganda. In fact, the 1950s mark the first wave of democratization in Africa characterized by the struggle for independence (Lindberg, 2006).

This seemingly impressive record notwithstanding, elections held in Africa before 1945 were highly elitist and conducted mainly in key urban areas. Nonetheless they tended to be free and fair and the outcomes were never contested (Lindberg, 2006). African politics changed for the worse in the 1960s and 1970s with the emergence of military rule and civilian authoritarianism. Even then, 'Uganda was the only post-independence civilian regime to suspend elections altogether' (Lindberg, 2006:10).

Even the worst of the African dictators knew the language of democracy and the utility of elections. At the height of Mobutu Sese Seko's autocratic regime in Zaire (now Democratic Republic of Congo) in July 1977, he remarked that:

I believe that the voice of the people is often stifled, and that we risk hearing it too late...the Zairian people, whose political maturity is no longer in doubt, must be able to express itself in complete liberty, and its voice must be accorded full legitimacy.¹⁸

In terms of scholarship on African elections, studies in the immediate independence era in the 1960s were concerned more with political mobilization and competition among parties and candidates as well as election outcomes. However, little attention was paid to the dynamics of the electoral process (Kasongo-Lumumba, 2005). By the 1970s, the initial enthusiasm with African elections had subsided partly due to the emergence of the one-party state and authoritarian regimes in many parts of the continent. More attention shifted towards trying to understand how the one-party state and the military regimes that dotted the continent functioned. In the 1980s and 1990s, African elections were examined mainly through the lenses of ethnic voting theory, but in the 2000s the assumptions of the theory are being challenged. In the post-1990s, research on African elections has taken two forms. On the one hand there are those who focus on credibility of the elections and on the other hand there are those who focus on the voting patterns, voter behavior and the role of incumbents in elections (Kasongo-Lumumba, 2005).

¹⁸ Haywood Fred M. (ed.). 1987. *Elections in Independent Africa*. Boulder, CO: Westview Press. Page 187.

3.2 Model Estimation and Results

In estimating a model of electoral volatility, I have included measures of living conditions (HDI), social cleavages (ELF) and political institutions and Systemic Variables (*Electoral System, Election Timing and Political Freedom*). The estimated model of electoral volatility is expressed by the following equation:

$$\begin{aligned} \text{Electoral volatility} = & \alpha + \beta_1 (\text{Living Conditions}) \\ & + \beta_2 (\text{Ethnic Homogeneity}) \\ & + \beta_3 (\text{Voter Turnout}) \\ & + \beta_4 (\text{Electoral System}) \\ & + \beta_5 (\text{Election Timing}) \\ & + \beta_6 (\text{Political Freedom}) \\ & + \varepsilon_i \end{aligned}$$

Using the boot package in the R program, I obtained *bootstrap statistics* based on 2000 iterations or bootstrap samples, as well as the associated *Bias Corrected Bootstrap* confidence intervals. The decision to use 2000 iterations was based on the advice in the literature that 95% confidence level requires minimum of 1000 bootstrap samples (Manly, 1997). The results are shown in Table 2.

Table 2: Bootstrap Statistics for Robust Regression of Africa's Electoral Volatility

	Coefficient	Bias	Std. Error	BCa
Electoral Volatility	80.31	-0.37	14.19	(49.64,106.57)
HDI	-101.13	0.07	17.22	(-139.7,-66.4)
ELF	5.01	0.36	8.25	(-11.22,21.50)
Voter Turnout	-0.14	-0.00	0.13	(-0.39,0.12)
Political Freedom	-0.23	0.02	1.44	(-2.88,2.59)
Mixed Electoral System	-2.33	-0.14	4.95	(-12.62,6.96)
PR Electoral Systems	-0.95	-0.12	4.93	(-10.80,8.46)
Concurrent Elections	7.12	0.06	4.13	(-0.65,15.60)

The bootstrap statistics as well as the Bias Corrected and Accelerated Bootstrap Confidence intervals (BCa) are constructed for 2000 Bootstrap Samples at 95% confidence level.

Before substantively interpreting the results in Table 2, there are a few points worth noting. First, although I have reported only the BCa bootstrap confidence intervals, it is also possible to obtain the *Normal* and the *Percentile* confidence intervals using the bootstrap method. I choose BCa because it is more reliable when the original sample size is small as is the case with this study (Scheiner and Gurevitch, 2001). Otherwise, the results in Table 2 would not change regardless of which of the three confidence intervals is used in interpreting the results. Second, while the Huber Estimation of the Robust Regression returns the same intercepts and slopes that

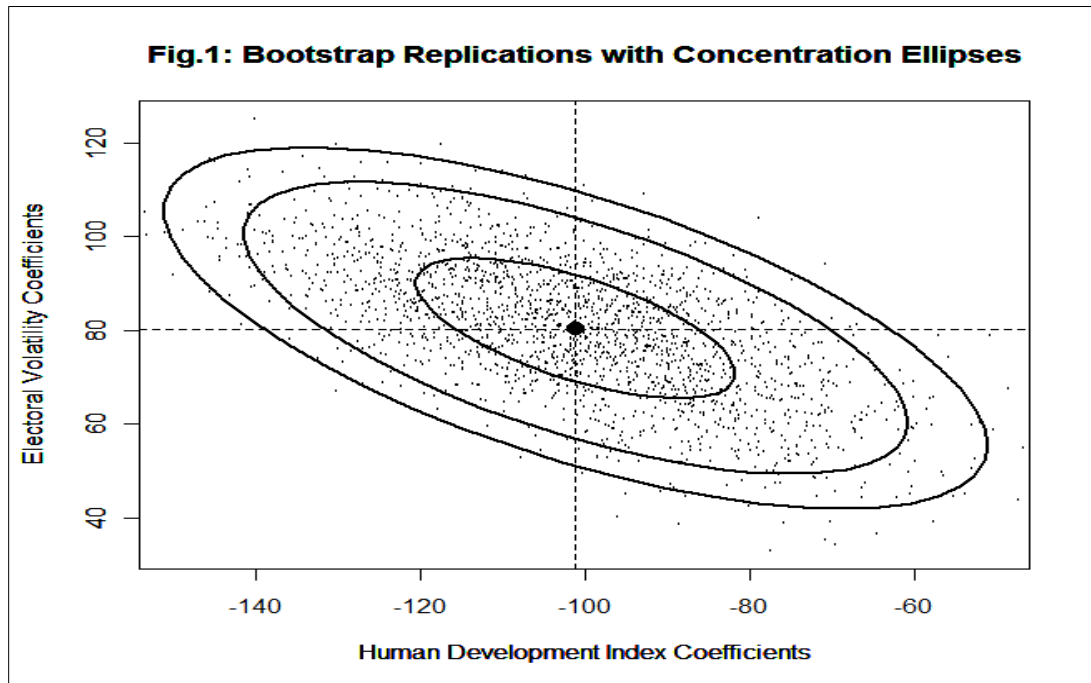
would result from normal robust regression, it adjusts the standard errors to correct for the bootstrapped samples. The first column marked *coefficients* contains robust regression coefficients for the variables shown. These are the same coefficients that one would normally get in robust regression.

3.3 Aggregate Living Conditions and Electoral Volatility

There are several ways of interpreting the table. Using the standard errors and the estimated regression coefficients, it is clear that only HDI is statistically significant at the 95% confidence level. When the electoral volatility and HDI coefficients are taken together with their respective standard errors, the resultant t-score is greater than ± 1.96 which is the threshold for 95% confidence level. On the other hand, the t-scores which result from the other variables are smaller than 1.96. On this account, therefore HDI is the only statistically significant determinant of electoral volatility.

The second, easiest and perhaps, better way of interpreting the results is to look at the *BCa* confidence intervals. They show the range within which the true value of a given coefficient lies at 95% confidence level. If both the upper and lower limits have the same sign (both are positive as is the case with electoral volatility, or both are negative as in HDI), then the corresponding coefficient is statistically significant at the 95% confidence level. When the upper and lower limits have the same sign, it means that zero does not lie within the confidence interval and hence, we rule out the null hypothesis that the true value of the coefficient in question is zero. Figure 1

gives a clearer view of the relationship between living conditions and electoral volatility in Sub-Saharan Africa.



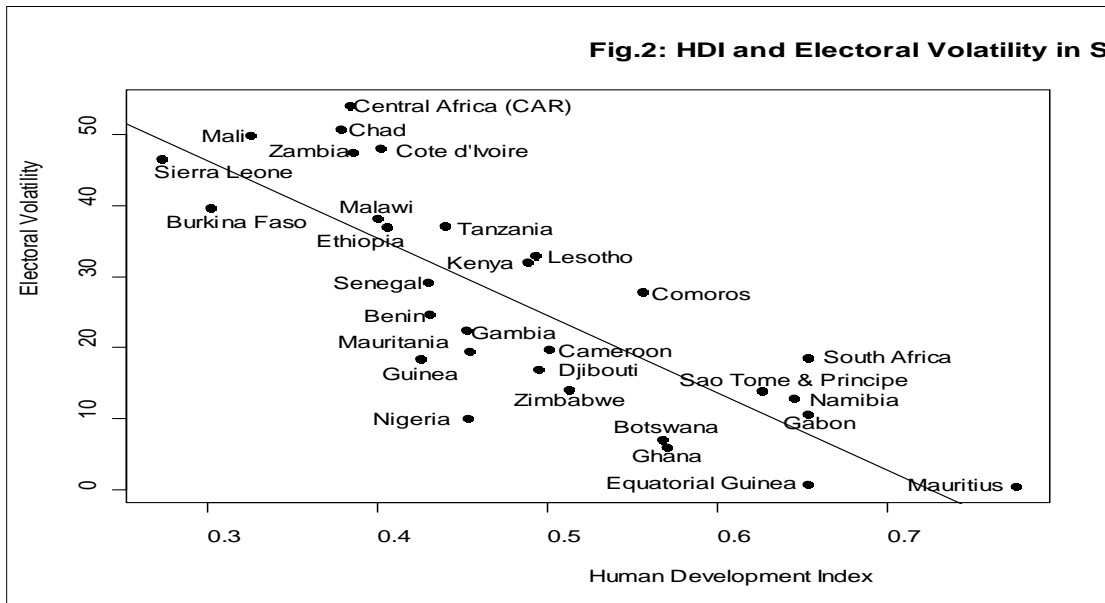
Scatterplot of bootstrap replications of Africa's Electoral Volatility and HDI Coefficients. The concentration ellipses are drawn at the 50, 95, and 99% confidence levels using a robust estimate of the covariance matrix of the coefficients.

Figure 1 contains all pertinent information necessary to understand the relationship between HDI and electoral volatility. For example, it enables us to simultaneously see the confidence intervals at different confidence levels. Although we are satisfied with 95% confidence level, Figure 1 enables us to visualize the confidence intervals for a 99% confidence level. This way we are able to visualize the risk we take in accepting 95% as opposed to 99% confidence levels by looking at the cases that lie outside the 95% confidence interval (in the space between the last two outer ellipses). The 95% confidence interval for both HDI and electoral volatility are

represented by the second outer-most ellipses. Indeed, the confidence interval for HDI lies between the extreme right and left edges of the second outer most ellipses when read from the x-axis. It roughly ranges from -140 to -66. Similarly, the 95% confidence interval for electoral volatility is bounded by the extreme top and bottom edges of the same ellipse when read on the y-axis. Its approximate range is 50 to 107. The center of the ellipse, where the vertical and horizontal broken lines meet, represents the intersection point for the estimated coefficients for HDI and electoral volatility. The estimated coefficient for HDI is the *x*-coordinate of the ellipse centre, which is the point at which the vertical broken line touches the x-axis (roughly -101). Similarly, the estimated coefficient for electoral volatility is the *y*-coordinate, or the point at-which the vertical horizontal line touches the y-axis (approximately 80). These are the same coefficient estimates given in Table 2.

Whichever way the results are interpreted, it is evident that HDI has a statistically significant influence on electoral volatility. The negative coefficient of the slope implies that the lower the living conditions of a country, the higher its electoral volatility and vice versa. In effect therefore, at higher levels of HDI, volatility is lower. This means that there is a strong and statistically significant relationship between living conditions and electoral volatility at a 95% confidence level. These findings show that aggregate voter behavior is closely tied to the living conditions at the given level of aggregation. Since the level of aggregation, and hence the unit of analysis, in this case is the nation, I argue that nations with better living conditions tend to have lower electoral volatility.

For substantive interpretation of these findings, we refer to Figure 2 which locates the 30 study countries in a scatterplot of HDI and electoral volatility.



Data source: UNDP. 2006. *Human Development Report 2006. Beyond Scarcity: Power, Poverty and the Global Water Crisis*. New York: Palgrave Macmillan, African Elections database, Adam Carr's Election Archives among other sources as indicated in appendix 2.

One observation from figure 2 is that, West African countries tend to have relatively lower HDI and higher electoral volatility. West African countries like Burkina Faso, Sierra Leone and Mali had the worst living conditions at the time of elections. Apart from Ghana, no other West African country had an HDI index higher than 0.5 and it is not surprising therefore, that they tended to record high electoral volatilities. In Southern Africa the story is the reverse. Namibia, South Africa, Botswana and Mauritius had high HDI and low electoral volatility. Mauritius which has one of the best performing economies in Africa has a complex party system known for regular formation and break up of coalitions. Together with Botswana and Gambia, they are

probably the only African countries which did not introduce single party authoritarianism even when there was the temptation to so do in the 1970s and 1980s. The Eastern African countries of Tanzania, Kenya, Ethiopia, Djibouti, and Comoros have moderate HDI and moderate electoral volatility. The lowest HDI is Ethiopia's 0.406, while the highest is Comoros' 0.556. Similarly, their electoral volatility ranges from a low of 16.9 for Djibouti to a high of 36.9 for Ethiopia.

The Central African region yields two noticeable patterns. The coastal parts of central Africa comprising Equatorial Guinea, Gabon, Cameroon and Sao Tome and Principe have better living conditions and lower electoral volatility. However, the landlocked Central African countries, comprising the Central African Republic (CAR) and Chad, have low HDI and exceptionally high electoral volatility.

The Central African Republic for example, has been unstable with waves of democratic gains and reversals. The country had a record eleven coup attempts in the 1990s culminating in the 2003 overthrow of President Ange Felix Patasse who had won the 1999 elections. Francois Bozize who led the coup then organized elections in 2005 which he won. In effect, there was a seven years lapse between the first election in 1999 and the second one in 2005, including a two-year military interlude. Although the military interlude did not change the party system, these developments altered the political landscape by the time of the second elections in 2005. During the 2005 elections, Patasse was barred from contesting. His party, Movement for the Liberation of Central African People (MLPC), fielded another

candidate, but the results saw a significant reduction in the party's seats from 47 in 1998 to 11 in 2005. Corresponding to this decline was the sudden increase in the number of seats won by independent candidates which rose from 7 in 1998 to 34 (Wusu, 2006; Freedom House 2006). This may be an indication that most of the politicians loyal to Pattasse may have opted to contest the elections as independent candidates. These changes account for the extremely high volatility relative to HDI.

3.4 Living Conditions, Political Freedoms and Electoral Volatility

It will be recalled that the thirty countries studied, were not necessarily those with greater political freedoms. In fact, I argued that it is not proper to select cases for study based on either the dependent or independent variables. It is noteworthy that out of the 30 countries, Freedom House assessed 9 or 30% as *Politically Free*, 15 or 50% as *Partly Free* and 6 or 20% as *Not Free*. I had two expectations with regards to political freedom. First, I expected that countries with greater political freedom would have greater electoral volatility. This expectation stems from the assumption that greater political freedom will guarantee free and fair elections and grant citizens the right to shift preferences at will. It would also allow for the formation of effective political parties which can campaign freely for electoral support.

This assumption may intuitively seem contradictory to the stated study hypothesis, particularly if political freedom is assumed to be related to living conditions. It can be misconstrued to imply that countries with greater political freedom, and hence better living conditions, tend to have higher volatility. It is therefore important to

clarify that the link between political freedoms and living conditions in Africa is weak. First, if political freedom is strongly correlated with living conditions, then my regression model would run into multicollinearity problems, since the two are independent variables. To begin with, I tested for multicollinearity using Variable Tolerance (VT), which measures the amount of variability in a given independent variable that does not depend on other independent variables (Walker and Maddan, 2009). The VT for political freedom is 0.57 which is a reasonable collinearity level given the cut-off of 0.25 suggested in the literature (Walker and Maddan, 2009).

I also calculated the Variance Inflation Factor (VIF) which measures the amount by which the correlation between a given independent variable and other independent variables inflates the standard errors of a regression coefficient. Although political freedom is the variable with the highest VIF of 1.75 in the model, this is far less than the most conservative cut-off of 4.0 suggested by Fox (2002) as well as Walker and Maddan (2009). This implies that the correlation between political freedom and other independent variables, including living conditions, inflates the estimated regression coefficients modestly and within tolerable levels.

Second, I used *Pearson Product Moment Correlation Coefficient* to test bivariate correlation between political freedom and living conditions. The test results are: $r = -0.332$; $df = 28$; $t = -1.864$; $p\text{-value} = 0.073$; confidence interval range from -0.619 to 0.032 ; $r^2 = 0.110$; and $\alpha = .05$. It is noteworthy that the political freedom scale is constructed such that lower scores imply greater freedom and vice versa. Given that,

Pearson $r = -0.332$, there is a weak positive correlation so that greater freedom is correlated with better living conditions. However, the t -score, p -value and 95% confidence interval, show that the relationship is statistically insignificant. Indeed, political freedom accounts for only 11.0% of variability in living conditions.

More substantively, figure 2 and table 3 show that, with the exception of Benin, the democratic states with low volatility enjoyed relatively good living conditions. At the same time, apart from Guinea, the authoritarian states with low volatility, were not doing badly either. For example, Equatorial Guinea, which is authoritarian, had the second best performing economy after Mauritius. While there are a number of democratic states in Africa with strong economies, there is no evidence, within the confines of this study, to suggest a strong correlation between political freedom and living conditions. Therefore, my expectation that countries with greater political freedom would have higher volatility does not contradict the study hypothesis.

In the bootstrap robust regression, I used the numerical values of political freedom, which range from 1 to 7. The results presented in Table 2 demonstrate that, political freedom is not a statistically significant determinant of volatility. I also analyzed the relationship between political freedom and electoral volatility by measuring both variables at an ordinal scale. I measured the level of volatility in terms of deviations above and below the Africa-wide mean volatility, which I found to be 26.1. I treated volatility scores above the mean as high, and those below the mean as low volatility. I also measured political freedoms in terms of the qualitative values assigned to it by

the Freedom House- *Free*, *Partially free* and *Not Free*. The resultant distribution of countries studied is shown in table 3.

Table 3: Political Freedom and Electoral Volatility in Sub-Saharan Africa

Levels of Electoral Volatility	Levels of Political Freedom		
	Not Free (Authoritarian States)	Partly Free	Free (Democratic States)
Low Volatility	Equatorial Guinea, Cameroon, Guinea, and Zimbabwe	Gabon, Gambia, Nigeria, Djibouti, and Mauritania,	Mauritius, Botswana, Sao Tome & Principe, South Africa, Ghana, Namibia, and Benin
High Volatility	Cote d'Ivoire, Chad	Burkina Faso, Kenya, Sierra Leone, Malawi, Ethiopia, Zambia, Comoros, Central African Republic, Tanzania and Senegal	Lesotho and Mali

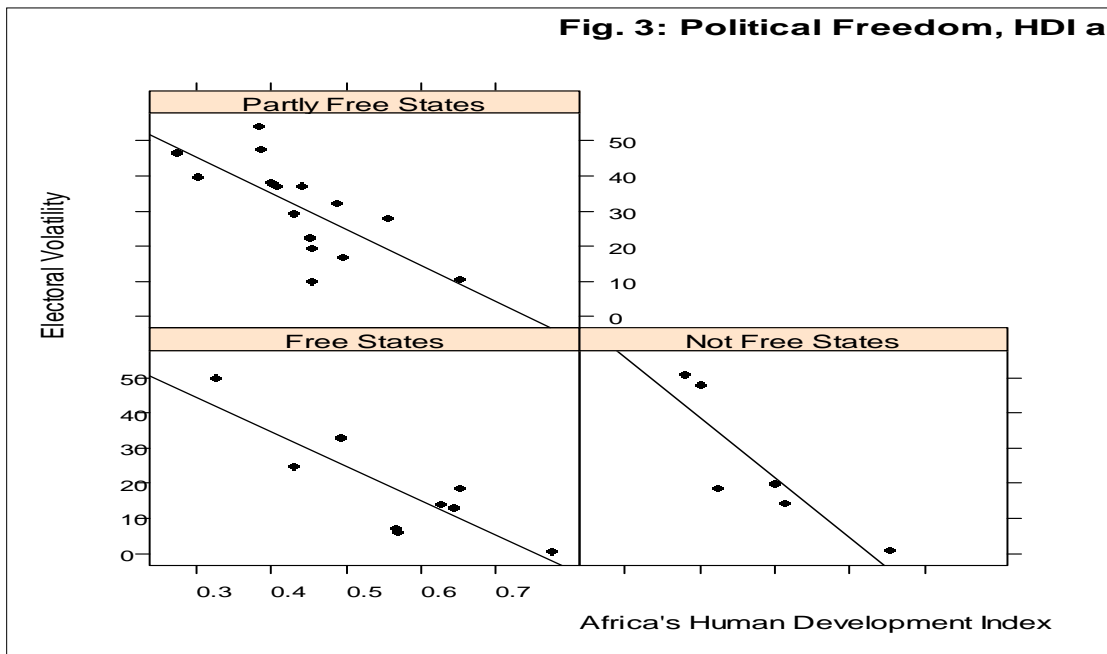
Data Source: This table has been constructed with data from Appendix 2 of this paper.

To gain a clearer view of the relationship between political freedom and volatility, I treated the volatility scores for the nine democratic states and the six authoritarian states shown in table 3 as two separate samples. I then performed a test of the difference of the means¹⁹. Since the sample size for each of the two categories of states are small, and different from each other (for democratic states $N = 9$, and for non-democratic states $N = 6$), the best method to use is the *Welch two-sample t-test*. From this test, $t = -1.25$, $df = 7.415$, $p\text{-value} = 0.249$, and the observed difference in the means of the two samples is 11.8. The 95% confidence interval for the test

¹⁹ The tests of the difference of the means, which I have used here, as well as the tests of proportions, are useful alternatives to the tests of association which I have used in the next two chapters.

ranges from -33.826 to 10.257, and hence its upper and lower limits have different signs. This raises possibilities that the true difference in the means could be zero and hence, statistically insignificant. In any case, given that $p\text{-value} = 0.249 > \alpha = .05$, I retain the null hypothesis that the difference between the mean electoral volatility for democratic and non-democratic states is not statistically significant.

The second expectation was that the impact of living conditions on electoral volatility varies with the degree of political freedom. Figure 3, shows that whether a country is classified as free, partially free or not free, does not seem to affect the impact of living conditions on electoral volatility. That is, living conditions seems to determine volatility regardless of a country's level of political freedom.



Data source: UNDP. 2006. *Human Development Report 2006. Beyond Scarcity: Power, Poverty and the Global Water Crisis*. New York: Palgrave Macmillan; African Elections database; Adam Carr's Election Archives; IDEA International.

Figure 3 shows that, while ‘free states’ and ‘partly free states’ have nearly the same slope and intercept, the ‘non-free states’ have slightly higher intercept, and a steeper slope than the two. These minor differences notwithstanding, it can be inferred that the impact of living conditions on electoral volatility is generally stable in all the three shades of political freedoms. I rationalize this on grounds that the general political freedoms measured by Freedom House and other measures such as the Economic Intelligence Unit and Polity IV may not be manifested in the electoral process. Just as ‘voters are not fools’ (Key 1966:7), and ‘nonvoters are not fools’ (Ragsdale and Rusk 1993, cited in Goidel *et al*, 1999), I add that ‘authoritarian leaders are not fools’. Authoritarian leaders know when to act tough, how to cover their acts, and when to play to the gallery. Although they are hypersensitive to any threats to their hold on power, at least some do preside over relatively free and fair parliamentary elections as long as they are assured of winning enough legislative seats to transact business. This is what Lindberg (2006) refers to as, ‘[the] ostensible transformation of previously authoritarian rulers into democratic converts’ (p. 38).

This should not be a surprise given that, even at the peak of authoritarianism in Africa in the 1970s and 1980s, there were some competitive legislative elections which yielded stunning legislative turnovers (Liebenow, 1986; Bratton and de Walle 1997; Posner 2005; Lindberg 2006). Since the rebirth of democracy in Africa in the early 1990s, there has been a notable increase in political freedoms. It is reasonable therefore to suggest that parliamentary elections tend to reflect voters’ preferences.

In fact, despite violent protests in the flawed 2007 presidential elections in Kenya, there were no serious disputes over parliamentary elections.

A possible counter argument to the one I have presented above, is that volatility in democratic and non-democratic states are shaped by different forces, and therefore, are not equivalent. Besides living conditions, it is possible that low volatility in non-democratic states can result from suppressed political participation, stifled opposition, or outright manipulation of the electoral process. That is, elections in democratic states are free and fair, while those in non-democratic states are not, and hence, the two should not be lumped together in studies of volatility.²⁰

²⁰ I hesitate to pursue the argument that elections in democratic states are free and fair, while those in non-democratic states are not. There are reservations on the standards used to judge African elections as free and fair. Indeed, Lumumba-Kasongo (2005) raises the questions: ‘what do “free and fair elections” mean in Africa? Who determines what is free and fair, and for what purpose?’ (p. 197). First, according to Lindberg (2006), free and fair elections are measured in terms of: opposition participation or boycott of elections, acceptance or rejection of the results by losers, and loss or win by the incumbent. Yet he concedes that incumbents sometimes lose, even when elections are not free and fair. Such was the case in Malawi’s 1999 and Cote de’Ivoire’s 2000 parliamentary elections, as well as Namibia’s 1989 Constituent Assembly elections. He also notes that some opposition parties boycott elections only when they realize they cannot win even fairly. Second, scholars like Muthien (1999) use survey questions seeking voters’ opinion on whether elections have been free and fair. Given the high cost of information, it is doubtful if voters can objectively evaluate elections as free and fair. It is likely that voters who support winning candidates will judge elections as free and fair, even if they are not, and vice versa. Third, elections are at times declared free and fair on the basis of international observer reports. However, Cranenberg (2000) argues that, some observers lack expertise, are interested parties, and often use international standards which ignore the local context (Abbink and Hesselings, 2000). In this regard, Goodwin-Gil (2006) notes that, while it is easy to identify elections that are not free or fair, by looking for deviations from expected norms, it is not easy to identify a free and fair election, since the twin concepts lack ‘easily verifiable content’. To this, I can add that some forms of electoral fraud, with staid effects on outcome, are covert and hard to detect.

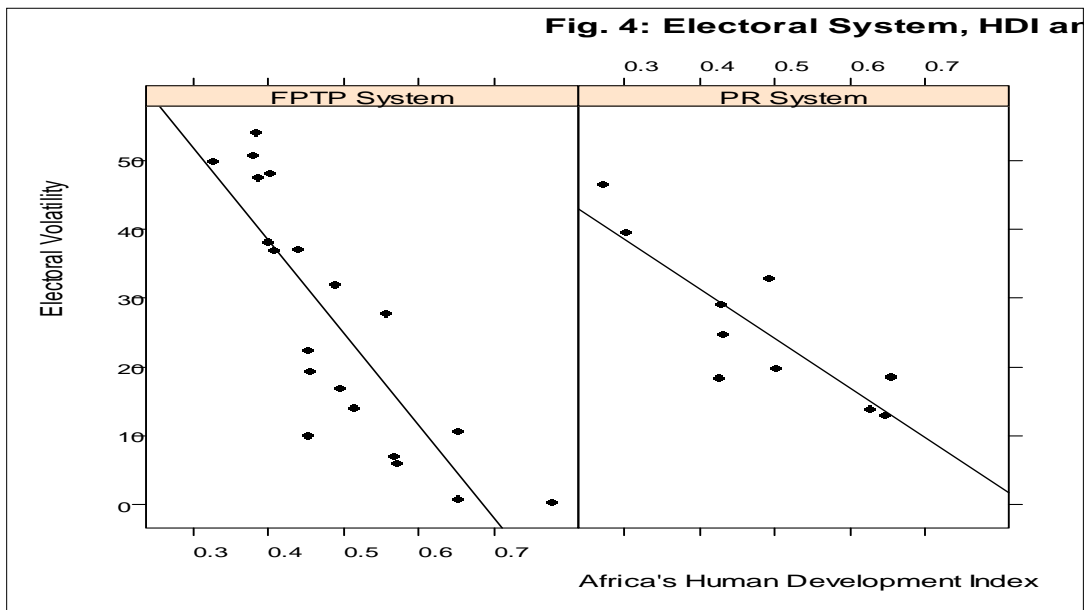
I note that, despite the regression analysis depicting political freedom as statistically insignificant, there were only nine democratic and six non-democratic states in the study. Hence, conclusions on the influence of freedom on volatility are modest and tentative. There is still room for a detailed pursuit of this line of research in Africa.

3.5 Living Conditions, Electoral Systems and Electoral Volatility

Past studies have produced mixed results with regard to the influence of institutional variables on electoral volatility (Roberts and Wibbels, 1999; Vowles *et al*, 2002; Epperly, 2008). Vowles *et al* (2002), predicts a higher degree of volatility in the First-Past-The-Post (FPTP) as compared to the Proportional Representation system, (PR), and a much lower volatility in Mixed Systems. They argue that FPTP reduces the competitiveness of smaller parties, and hence reduces their chances of winning seats. However, in a study of post-communist Eastern Europe, Epperly (2008) found that mixed electoral system leads to high volatility. On the other hand, Mozaffar and Scarritt (2005) found that electoral systems have no influence on volatility in Africa.

This study does not find any significant influence of electoral systems on volatility. In the bootstrap regression statistics in table 2, First-Past-the-Post was the baseline electoral system. The results suggest that electoral volatility in countries using either the proportional representation or a mixed system do not significantly differ from those that use FPTP. Since the parameters for the electoral system variables are not statistically significant, it is not useful to decompose our regression equation to substantively interpret its effect on volatility. Instead, I show in Figure 4 that the

impact of living conditions on volatility does not seem to be different under FPTP and PR electoral systems. For example, if the threshold is set at 5% and 10 million voters vote, a party will be required to get at least half a million votes to secure a seat. Smaller parties without cross-country support may therefore find it difficult to get seats. However, a small party with limited regional support can secure even up to ten seats with as few as 30,000 votes in countries like Zambia and Botswana where there are generally few voters per constituency. This would neutralize the effect of electoral system on electoral volatility. If anything, one can argue that the FPTP opens up the political space more by allowing for independent candidates who then trade off seats with parties in successive elections.



Data source: UNDP. 2006. *Human Development Report 2006. Beyond Scarcity: Power, Poverty and the Global Water Crisis*. New York: Palgrave Macmillan; African Elections database; Adam Carr's Election Archives; IDEA International. Since there were only four countries with mixed systems, it made little sense to create a scatterplot for them. Instead I have merged them with the PR systems so that the comparison is essentially between the proportional and the non-proportional electoral systems.

Malawi's 2004 elections provide an example in which voters showed a rare appetite for independent candidates. In *Mangochi* area of the southern region, independent candidates won eight of the eleven seats. For example, the *Mangochi South West* constituency attracted eleven candidates, out of which seven were independent. It is not surprising that therefore, that an independent candidate won the seat. In the national tally, independent candidates won 20% of all the seats, compared to 29% for the winner, Malawi Congress Party (MCP), and 26% for second placed, United Democratic Front (UDF) (Ott, *et al*, 2004). Much of the high electoral volatility in Malawi was therefore caused by independent candidates. This can be interpreted to mean that voters were somehow uncomfortable with the existing parties. To this end our findings support those of Mozaffar and Scarritt (2005).

3.6 'Coat Tail Effect' and Electoral Volatility

Mozaffar and Scarritt (2005) and Birnir (2006), have noted that, when parliamentary elections are held closely after presidential elections, voters tend to be supportive of the president's party. Holding parliamentary and presidential elections concurrently or close to each other creates a 'coat-tail' effect, which minimizes the chances of the smaller parties winning seats. However, when the two elections are held separately, smaller parties have better prospects of securing seats (Mozaffar and Scarritt, 2005). I therefore expected that concurrent presidential and parliamentary elections would lead to relatively lower electoral volatility.

However, the regression results in Table 2 show that, concurrent elections do not yield substantively different volatility than non-concurrent ones. That is, whether presidential and parliamentary elections are held concurrently or not, does not seem to affect volatility. Neither does it alter the effects of living conditions on volatility.

I also used the test of difference of means to detect whether ‘coat-tail’ effect affects volatility. In table 3, there are fourteen countries with high electoral volatility. Half of these countries elect the legislators and the chief executive (president or prime minister) concurrently, and the other half elect them separately. The *Welch two-sample t-test* results are: $t = -0.182$, $df = 11.76$, $p\text{-value} = 0.430$, the 95% confidence interval for the test ranges from infinity to 7.70. For non-concurrent cases, $N = 7$, $\text{mean} = 40.3$, and for concurrent cases, $N = 7$, $\text{mean} = 41.2$. Although the observed difference in the two means is 0.9, this difference is not statistically significant given that the 95% confidence interval raises possibilities that the true difference in the means could be zero. At the same time, given that $p\text{-value} = 0.430 > \alpha = .05$, I retain the null hypothesis that the difference between the mean electoral volatility for concurrent and non-concurrent elections is statistically insignificant

3.7 Ethnic Fragmentation and Electoral Volatility

The level of ethnic fragmentation ranges from as low as 0.006 in Lesotho to a high of 0.861 in South Africa, with a mean of 0.634. This means that Lesotho is an ethnically homogenous country in which nearly everybody is from the same ethnic group. South Africa on the other hand, is ethnically fragmented. On average, the

probability that two randomly selected people in Africa belong to different ethnic groups is 0.634, which confirms the arguments that Africa has a high degree of ethnic fragmentation. Using data in appendix 2, I can classify African countries into four categories based on ethnic fragmentation and volatility. First, countries with low fragmentation and low volatility include Botswana, Sao Tome and Principe, Equatorial Guinea, Zimbabwe and Mauritius. Second, countries with high volatility and high fragmentation are Zambia, Sierra Leone, and Chad. Third, countries with high fragmentation and low electoral volatility include Ghana, Guinea, Cameroon, Nigeria, South Africa and Gabon. Finally, countries with low fragmentation and high volatility are Burkina Faso and Lesotho.

Contrary to the argument that high level of ethnic fragmentation increases electoral volatility, this study finds that the relatively high level of ethnic fragmentation in Africa does not have any statistically significant influence on electoral volatility at the national level. This is contrary to the arguments by Madrid (2005), who found that ethnic cleavage has a strong influence on volatility in Latin America. However, the findings confirm those of Tavits (2005), whose study of Eastern Europe found that ethnic fragmentation does not significantly influence electoral volatility. More substantively, the most likely reason why ethnic fragmentation in Africa does not affect parliamentary election outcomes is because, with the exception of key urban areas, most constituencies are inhabited by one dominant ethnic group. Therefore, even if voters are unhappy with the incumbent party or legislator, they are likely to replace them with another legislator from the same ethnic group in a different party.

3.8 Voter Turnout and Electoral Volatility

The results show that turnout does not influence electoral volatility at the national-level. There is no clear pattern in the relationship between turnout and volatility. There are countries with low turnout and low volatility (Zimbabwe, Gabon, and Nigeria), low turnout and high volatility (Mali and Cote d'Ivoire), high turnout and low volatility (Namibia, Equatorial Guinea, and Mauritius), and high turnout and high volatility (Tanzania, Sierra Leone and Ethiopia). This finding conform to several studies cited in Goidel *et al* (1999) such as De Nardo (1980), Bennett and Resnick (1990), as well as Gant and Lyons (1993). The studies found that voters and non-voters tend to have similar policy/candidate preferences, and hence failure to vote does not affect election outcomes. That is, turnout has no effect on volatility.

3.9 Conclusion

To this end, it seems that aggregate living conditions at the national level are the key determinants of volatility. Ethnic fractionalization, political freedom, voter turnout, electoral system, and concurrent elections, do not seem to influence volatility in a significant way. There is however, a need to test these results at a slightly lower aggregate level than the state. In the next two subsections of this paper, I test the same economic voting hypothesis in country studies of Kenya and South Africa.

CHAPTER IV: CASE STUDY OF ELECTORAL VOLATILITY IN KENYA

4.1 An Overview of Elections in Kenya

Kenya was a multiparty state from the time of independence from Britain in 1963, until the only opposition party was banned in 1969. From 1969 to 1982, Kenya was a *de facto* one party state, which means that only one party existed although the law allowed the formation of many parties. After the failed coup attempt in 1982, Kenya became a *de jure* one-party state, and the formation of any other party besides the ruling Kenya African National Union (KANU) was outlawed. It was not until 1991 that multiparty democracy was restored. It is noteworthy that Kenya is one of the few African countries that have held elections every five years since independence. Even during the nine year authoritarian interlude (1982-1991) the country held elections on schedule. Lewis (1998) has the following to say about Kenya during the one-party era: 'Kenya is probably the most unrestricted of Africa's one-party democracies, where elections regularly result in a high level of participation and a large turnover of elected politicians' (Lewis, 1998:38).

With the rebirth of multiparty politics in the early 1990s, the prospects of defeating KANU, which had been the ruling party since independence, became real. However, in line with the argument that it is very difficult to defeat incumbents (Gierzynski, 2000), KANU won both the 1992 and 1997 elections. This meant that president Daniel Arap Moi, who had ruled the country for 24 years, completed his new two term limit and was not eligible for re-election in 2002. However, his handling of the

transition, particularly the imposition of a candidate on his party at the expense of a split, meant he had as much stake in the election as he would if he was a candidate.

The 2002 elections were thus a watershed in Kenya's political history as KANU lost to NARC, an opposition coalition formed just two months prior to the elections. The elections significantly redistributed legislative seats so that KANU's seats were reduced from 108 to 68 while those of the National Rainbow Coalition (NARC) increased from 92 (which were won by its affiliates in 1997) to 125. Generally, legislative turnover reduced from 58.6% in 1997 to 43.8% in 2002 (Levy and Kpundeh, 2004).

4.2 Provincial Level Data Analysis and Discussion

Kenya has only eight provinces and hence for a study at the provincial level, $N=8$. Since this sample is small, it is inappropriate to use regression analysis. As already pointed out, I will use *Kendall's W Coefficient of Concordance* in a multivariate correlation analysis, and *Pearson Product Moment Correlation Coefficient r* in a bivariate correlation analysis.

i. Multivariate Correlation Analysis

In this case, the number of observations ($N=8$); the sets of ranks ($k=4$) and the results of Kendall's coefficient of concordance for the four variables are: $W= 0.713$; $df = N-1 = 7$; $\chi^2 = k(N-1)*W= 19.95$; and the p-value < 0.01 . The critical value of χ^2 when $\alpha = .05$ and $df=7$ is 14.067. Since the observed value of $\chi^2 = 19.95$, which is greater than the critical value, we reject the null hypothesis that the ranks are

independent of each other. Indeed, since $W = 0.713$, and $p\text{-value} < 0.01 < \alpha = .05$, there is a significant agreement in the ranking of the four variables. Therefore, HDI, ELF and voter turnout taken together, are strongly correlated with volatility.

ii. Bivariate Correlation Analysis

I use *Pearson Product Moment Correlation Coefficient* to test bivariate correlation between electoral volatility on the one hand, and the HDI, ELF and Voter Turnout on the other hand. The results are shown in Table 3 below.

Table 3: Pearson r Tests for Electoral Volatility, HDI, ELF and Voter Turnout

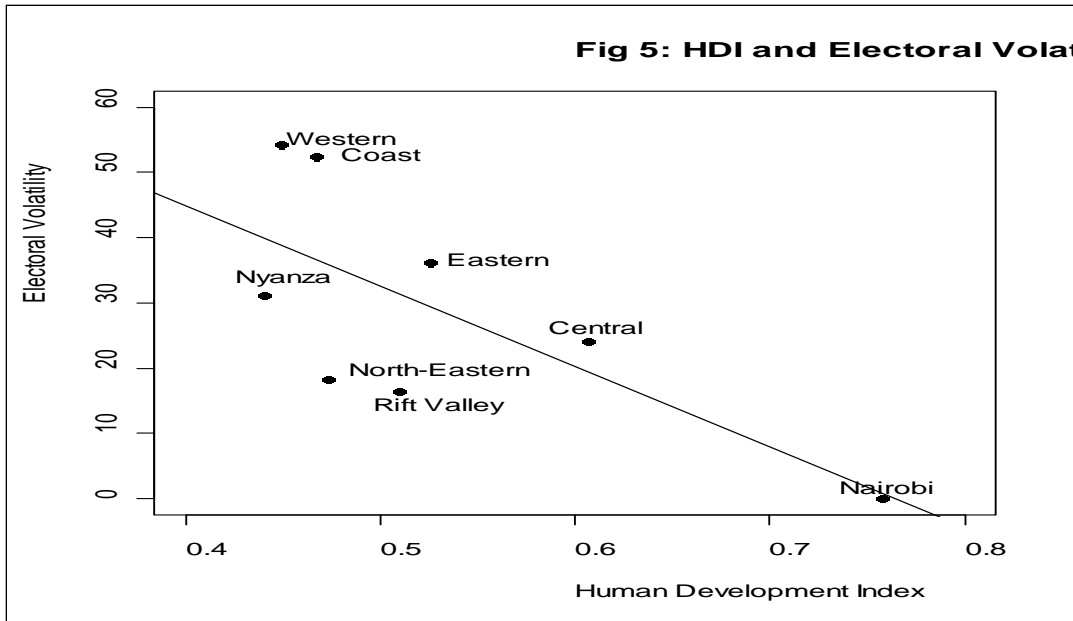
Independent Variables	Correlation	Significance of correlation			Variability
	<i>Pearson's r</i>	<i>95% Confidence Interval</i>	<i>t-value</i>	<i>p-value</i>	r^2
HDI	-0.714	-0.944, -0.020	-2.501	0.046	0.510
ELF	-0.223	-0.802, 0.571	-0.562	0.595	0.050
Voter Turnout	0.012	-0.698, 0.711	0.030	0.977	> 0.1

The first column gives the value of *Pearson's r* showing the strength and direction of the correlation between each of the three independent variables and electoral volatility. For HDI, $r = -0.714$, which means that it has a strong negative correlation with electoral volatility. That is, higher levels of HDI tend to be strongly correlated with lower levels of volatility and vice versa. ELF on the other hand, has a weak negative correlation with volatility. This means that although greater fragmentation

is correlated with low volatility and vice versa, the relationship is weak. Similarly, high turnout is correlated with high volatility, although the correlation is very weak.

Using the confidence intervals, it is apparent that only HDI is statistically significant at the 95% confidence level. There is a strong negative association between HDI and electoral volatility which means that higher levels of HDI are associated with lower levels of electoral volatility. However, this is not the case with ELF and voter turnout. In fact both have the upper and lower limits of their confidence intervals with different signs, meaning that zero is a possible true value of their respective coefficients. In essence, voter turnout and ethnic homogeneity of a province individually have weak and statistically insignificant bivariate correlation with electoral volatility. At the same time, the t-values and the p-values indicate that HDI has a significant correlation with electoral volatility, while ELF and turnout do not.

The final column of Table 3 is the Pearson r squared or simply r^2 . It is the same coefficient of determination that we get in regression statistics. It shows the amount of variability in electoral volatility which can potentially be explained by each of the independent variables in a bivariate correlation. HDI can explain roughly 51% of the variation in electoral volatility, while ELF and voter turnout can only explain 5% and $> 1\%$ respectively. Figure 5 shows the direct relationship between living conditions expressed by HDI, and electoral volatility.



Data Source: Electoral Commission of Kenya; Ministry of information and communication (Kenya): The European Union Observer Mission Report on Kenya's 2002 Elections: The Third Kenya Human Development Report 2003.

4.3 Constituency Level Analysis

In this section, I look at the impact of living conditions on electoral volatility at the constituency level. Since Kenya has single member constituencies, volatility at this level can only be calculated in terms of change in vote shares among participating parties rather than seats as was the case in the previous sections. At the same time, since there is no constituency-level data on HDI, I use Rural Poverty Incidence or the Headcount Index as an indicator of living conditions. The fifty constituencies selected are spread across the country with the exception of North-Eastern Province. The results of the robust regression analysis are reported in Table 4.

Table 4: Robust Regression of Electoral Volatility²¹

	Coefficients	t-value
Poverty Incidence	0.806*** (0.179)	4.509
Voter Turnout	0.305 (0.193)	1.586
Intercept	-37.791* (16.951)	-2.229
Residual Standard Error	11.2	
N	50	

Table 4 shows that poverty incidence is a significant predictor of electoral volatility in the 2002 elections so that as poverty incidence rise, volatility also increases. On the other hand, voter turnout is not statistically significant. The high volatility in constituencies with high poverty incidence is due to their tendency to limit support for KANU's parliamentary candidates, even where the ruling party won. Although KANU won *Mwatate*, *Sigor* and *Mt. Elgon*, for example, which have high poverty incidence of 58, 54 and 53 respectively, its parliamentary votes declined by 10.0, 19.3 and 11.3% respectively. However, although it lost *Kandara* and *Gichugu* with

²¹ The analysis on section 4.3 has been replicated in Appendix 6 using more up-to-date data obtained when the paper was virtually complete. The results are substantively the same.

low poverty incidence of 36 and 34 respectively, its parliamentary votes in the two constituencies increased by 12.2% and 7.1% respectively.²²

4.4 Conclusion

The provincial analysis had very few cases, tested correlation and not causation, and hence conclusions made from it are cautious and tentative. On the other hand, the constituency level analysis had sufficient cases, applied robust regression, but used poverty incidence as opposed to HDI to measure living conditions. Nonetheless, it provides more credible results on account of sample size and methodology. Even though the cross-national analysis used bootstrap robust regression, the provincial analysis used correlation tests and the constituency analysis used robust regression, they all show that living conditions may have a significant influence on volatility. It seems that in countries, provinces or constituencies with low living conditions, the voters tended to blame either the government or the local leadership or even both. Where they felt that the national government is to blame, they punished incumbent parties by voting against its parliamentary candidates. Where they placed the blame on their local leaders, they voted against sitting legislators, whether from the ruling party or the opposition. Either way, there was greater redistribution of seats among parties after elections and hence higher electoral volatility. These findings largely support the findings of the Africa-wide study.

²² Electoral Commission of Kenya: <http://www.eck.or.ke/index.php/Election-Results-Database/> Accessed on July 8, 2009); and World Bank. 2003. *Poverty and Inequality: Geographic Dimensions of Well Being in Kenya: Where are the Poor?* (Volume One): <http://go.worldbank.org/Z1Q8HEQOE0>.

CHAPTER V: CASE STUDY OF VOLATILITY IN SOUTH AFRICA

5.1 South Africa's Electoral System

South Africa has a bicameral legislature comprised of the National Assembly and the National Council of the Provinces. The former has 400 members elected by all South Africans on the basis of proportional representation. The latter consists of six permanent and four temporary delegates from each of the country's nine provinces. This translates into 90 members. It was set up in 1996 to replace the senate which had been created two years earlier.²³

During elections, there is a flexible requirement that each party should submit two lists; a national and a provincial list. Of course, some parties chose not to submit the lists. Half of the National Assembly seats are distributed among the nine provinces on the basis of the total votes cast per province, and the other half on the basis of national votes. The number of votes needed to win a provincial seat is determined by the formula:

$$\text{Provincial Votes per Seat} = \frac{\text{Total Valid Provincial Votes Cast}}{\text{Provincial Seats} + 1} + 1 \dots\dots\dots (i)$$

After elections votes are first tallied at the provincial level and parties allocated seats according to votes received in the province using the formula:

$$\text{Provincial Party Seats} = \frac{\text{Total Provincial Party Votes}}{\text{Votes Per Seat}} \dots\dots\dots (ii)$$

²³ Parliament of the Republic of South Africa: <http://www.parliament.gov.za/live/index.php> (07/12/09).

At this stage only whole numbers are considered and the remaining votes that do not get a seat at this stage are all treated as remainders. The remaining seats after using formula (ii) are then allocated to the parties on the basis of the largest remainders. If a seat or seats remain unallocated and the next party with the largest remainder does not reach the threshold of the provincial votes per seat, the ratios of votes to seats for each party is used to allocate the seat(s). Seats won by a party in each province are then added to determine each party's provincial seat entitlement. A similar process is repeated at the national level using formulas (i) and (ii) and substituting provincial with national where applicable.²⁴

5.2 Data Analysis

In this section, I examine the influence of living conditions on electoral volatility in South Africa's nine provinces. Although South Africa's national electoral volatility score was calculated using party-seat shares, the provincial volatility was calculated using votes received by parties. For most countries, data on seats were more readily available than those on votes received. Therefore, to be able to compare South Africa with the other 29 countries, it was necessary to use seats rather than votes.

Similarly, since proportional representation allocates party seats proportional to the votes, there is very little difference in electoral volatility calculated using seats and votes. Supporting this notion, Mozaffar and Scarritt (2005) observe that South Africa and Namibia have the lowest disproportionality index in Africa. They

²⁴Election Resources on the Internet: <http://electionresources.org/za/#ELECTIONS> (04/07/09).

attribute this to the fact that the two countries use purest proportional representation formulas - *Droop* and *Hare* respectively. They found that on average, the share of votes for the largest party in South Africa is 66.2% while the share of seats for the same party is 66.4%. In Namibia, the average share of seats for the winning party is 69.0% while average share of votes is 69.3% (Mozaffar and Scarritt, 2005).

Just as with Kenya, South Africa has a small number of provinces (nine), rendering regression analysis problematic. I used *Kendall's Coefficient of Concordance W*, to test the overall degree of association between electoral volatility, HDI, ELF and voter turnout. In addition, I use *Pearson Product Moment Correlation Coefficient r* to test bivariate correlation between the four variables.

i. Multivariate Correlation Analysis

In this analysis, the number of observations ($N=9$); the number of ranks ($k=4$) and the results of Kendall's Coefficient of Concordance for the four variables are: $W=0.91$; $df = N-1 = 8$; $\chi^2 = k(N-1)*W= 29.79$; and the p-value > 0.01 . Given that $df=8$; and $\alpha =.05$, the critical value of $\chi^2 =15.507$. Once again, the observed value of χ^2 (29.79) is greater than the critical value, and hence we reject the null hypothesis that the ranks are largely independent of each other. Just as in the Kenyan case, the p-value of > 0.01 shows that there is a statistically significant difference between the discordant and concordant ranks. We therefore conclude that when HDI, ELF and voter turnout are taken together, they are strongly correlated with volatility.

ii. Bivariate Correlation Analysis

The results of the bivariate correlation test between HDI, ELF, voter turnout and electoral volatility are shown in Table 5.

Table 5: Pearson r Tests for Electoral Volatility and Key Independent Variables

Independent Variables	Correlation	Significance of correlation			Variability
	Pearson r	95% Confidence Interval	t-value	p-value	r ²
HDI	0.905*	0.605, 0.980	5.642	0.001	0.819
ELF	-0.039	-0.685, 0.642	-0.103	0.921	0.002
Voter Turnout	-0.760*	-0.946, -0.194	-3.097	0.017	0.578
Unemployment	-0.788*	-0.953, -0.259	-3.383	0.012	0.621
Unemployed Coloureds	0.878*	0.514, 0.974	4.861	0.002	0.771
Unemployed Blacks	-0.017	-0.674, 0.654	-0.046	0.965	< 0.001
Unemployed Whites	0.364	-0.396, 0.828	1.033	0.336	0.132

5.3 Study Findings

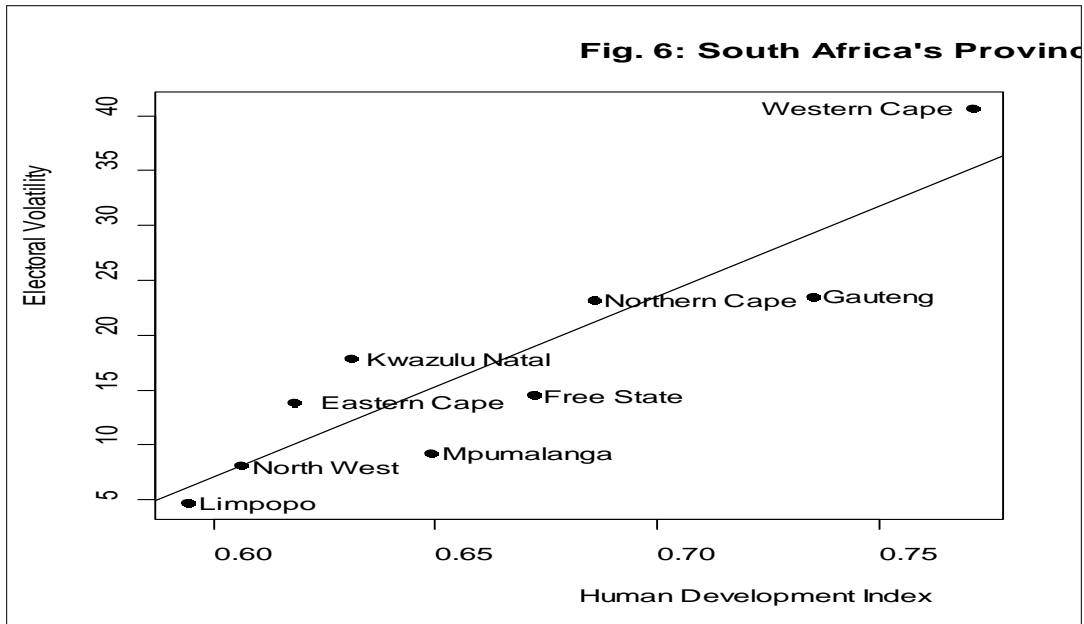
Table 5 shows that living conditions measured both in terms of unemployment rates and HDI are statistically significant. It seems that unemployed Coloureds²⁵ are more likely to shift preference and support a different party. This could be the reason why Western Cape, which has the highest concentration of Coloureds (Cape Coloureds),

²⁵ I use the phrases, ‘Coloureds’, ‘Whites’ and ‘Blacks’ cautiously, to refer to three of the post-apartheid South African communities. Any discomfort caused by the use of these phrases, is regretted. This analysis does not include other South African communities, such as the Asians, due to lack of data. Although, I am conscious of the fact that neither Blacks nor Coloureds are homogeneous, these broad categorizations are sufficient for this study.

had high volatility despite better living conditions. Voter turnout also has a strong correlation of -0.760 with volatility. However, the correlation between volatility and ELF is weak. The question that one may ask is whether these levels of correlation are statistically significant. It will be recalled that sample size affects the significance of r so that smaller samples such as the ones for the South African provinces may have large correlation coefficients even when they are not statistically significant. Columns 2, 3 and 4 in Table 5 address the question of statistical significance of the correlations. The confidence interval, t-values and p-values show that South Africa's provincial living conditions and voter turnout are all correlated with the provincial volatility. Table 5 also shows that HDI accounts for the highest variability of 81.9% followed by unemployment. Voter turnout and ELF respectively account for 57.8% and 0.2% of the variability in volatility.

I expected that provinces with low voter turnout would be likely to record high electoral volatility. It is possible that in such provinces, the voters have very little to cheer about and many of them opt not to vote. Those who votes are motivated more by the desire to 'throw out the rascals'. A closer look at the 2004 South African election results shown in the appendix reveals that Western Cape Province, which had the highest electoral volatility of 40.7, had by far the lowest voter turnout of 42.6%. On the other hand, North-Western Province which had the highest voter turnout of 89.3% had a low electoral volatility of 8.1.

Perhaps more important, the table confronts us with a real puzzle. Contrary to our theoretical expectation, provinces with high HDI tended to record high volatility and vice versa as shown in Figure 6. The puzzle then is: why did provinces with high HDI register high volatility while those with low HDI experience low volatility?



Data Source: Independent Electoral Commission of South Africa. South Africa Human Development Report, 2003. Electoral volatility calculated by the writer.

5.4 South African Puzzle: A Protest by the Rich?

One of the possible explanations for the South African puzzle, where provinces with higher living conditions tend to register higher electoral volatility contrary to our expectations, is that the rich provinces are angry with African National Congress (ANC) for not paying as much attention to them as it does to poorer provinces. Besides the fact that increase in HDI leads to increase in electoral volatility in South African provinces, it is also apparent that provinces with less support for the ANC

tended to record higher electoral volatility and vice versa. Intuitively therefore, the better the living conditions in a given province, the less support it accorded ANC and the higher its electoral volatility in 2004.

Against this background, I explore the possibility that the provinces with relatively high HDI are registering high electoral volatility due to a decline in their living conditions. In other words, although Western Cape and Gauteng have the highest HDI and are economically better off than the other provinces, they could be experiencing a decline in living conditions. Similarly, given South Africa's history of racial bigotry and uneven development, ANC adopted pro-poor policies to rectify these anomalies. One such policy is the Black Economic Empowerment built on the idea of 'empowerment of the poor' through 'democratic redistribution of wealth' (Bramble and Barchiezi, 2003). It is possible that these policies adopted by ANC in an attempt to address the regional disparities are inviting the wrath of the people in the relatively rich provinces. In fact, in an interview with the BBC just before the 2004 elections, one of the respondents from Kwazulu Natal province observed that:

It would be fantastic if the ANC were voted out. But by the time that happens we'll already have a Mugabe-type situation. Has ten years made a difference? If you talk to the average white person they will say no, if you talk to the average black person they will say yes²⁶

²⁶ BBC News Online :http://news.bbc.co.uk/2/shared/spl/hi/africa/04/photo_journal/leaders/html/3.stm

To appreciate these remarks, one needs to remember the incredible socio-economic transformation that has taken place in South Africa since 1994. It is estimated that in 1995, about three-quarters of the richest 10% in South Africa were whites, but by 2000, the number of African households in the richest top 20% had matched that of the whites. At the same time, the distribution of national income was skewed in favor of blacks so that by 2004, it is estimated that 27% of black Africans in formal employment had entered the South African middle class (Buhlungu *et al*, 2007).

Against this background, I expected that the provinces which registered higher HDI in 2004 were in fact doing much better in the past years. However, our analysis of the living conditions trends (measured by HDI) across the nine provinces over time shows that the gaps between the relatively rich and the poorer provinces have not changed significantly since 1999. There is therefore, no reason for the latter to feel edgy about the economic reforms by the ANC government. Between 1999 and 2004, HDI declined every year across all the provinces. The actual rate of decline in HDI was fairly uniform across the provinces. A close look at the 2004 South African Human Development Report show that between 2003 and 2004, *Gauteng*, *Kwazulu Natal*, *Mpumalanga* and *North-West* all experienced a 0.011 decline in their respective HDI. The HDI for both *Eastern Cape* and *Free State* provinces declined by 0.009. In fact, Western Cape which has the highest HDI had the least decline of just 0.002. Yet it is Western Cape which had the highest electoral volatility as shown in Figure 6. It is therefore not true that provinces with high HDI in 2004 were experiencing disproportional decline in their economic conditions.

5.5 Unlocking the South African Puzzle: The Case of Western Cape Province

To unlock the South African puzzle, I examined the economic conditions and voting patterns in Western Cape. The choice of Western Cape was based on the fact that it had the highest electoral volatility in the country as shown on Figure 6. Similarly, it is only in Western Cape Province where the New National Party (NNP) won in the 1994 elections. NNP is the successor to the former ruling party, Nationalist Party (NP) which introduced apartheid in South Africa. Its victory in Western Cape Province was attributed mainly to the *Coloured* voters who provided a significant support for the party (Tihany, 2006:17). A closer look at Western Cape will enable us to get an idea of what is driving electoral volatility in South Africa and why at the provincial level we seem to get results that confound our hypothesis.

I begin with two sets of possible explanations for the South African puzzle. First, increased electoral volatility in areas which are less supportive of ANC is due to the fact that those areas are now warming up to ANC. It is possible that provinces which have relatively higher HDI disproportionately benefited in the apartheid era, and were therefore initially not receptive of ANC. These areas could be warming up to the ANC after realizing that the party means well for all South Africans. Second, it is also possible that anti-ANC voters are shifting to other opposition parties in search of credible challenge for ANC.

I began by examining the impact of living conditions on electoral volatility in 17 selected municipalities within Western Cape. Selection of the municipalities was based on availability of data primarily data on HDI. Since the sample size is small, I once again use *Kendall's W* and *Pearson r*.

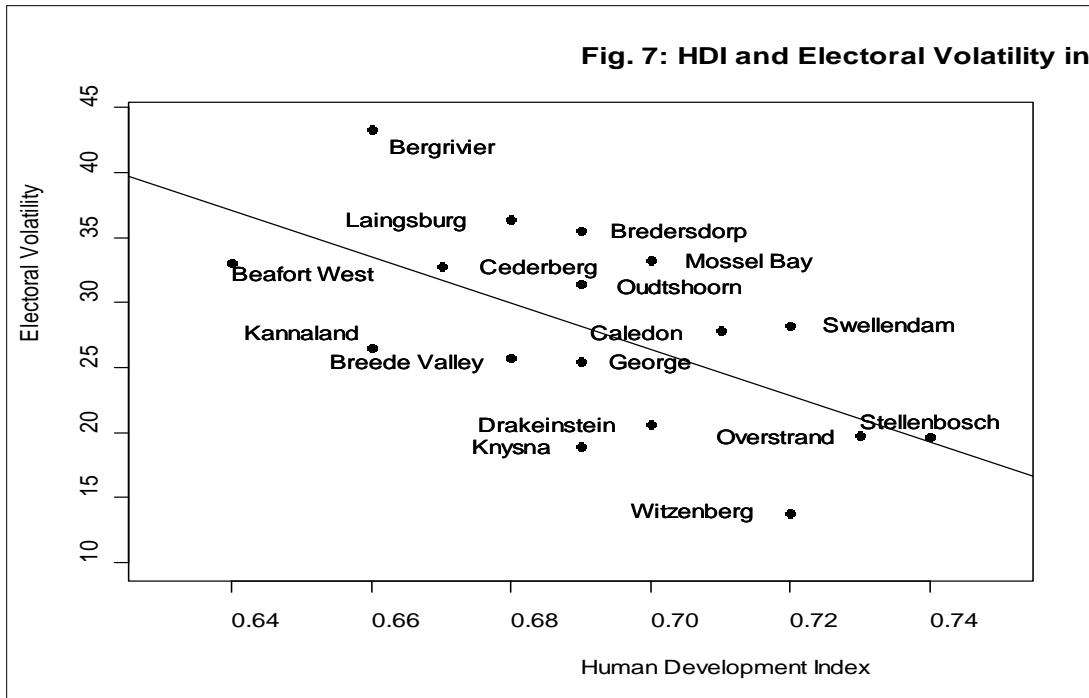
In the case of the Western Cape municipalities, the number of observations, $N=17$; the number of ranks, $k=4$ and the results of Kendall's coefficient of concordance are: $W= 0.911$; $df = N-1 = 16$; $\chi^2 = k(N-1)*W= 58.30$; and the p -value > 0.01 . Given that $df=16$; and $\alpha =.05$, the critical value of $\chi^2 =26.296$. Since the value of $\chi^2 = 58.30$ and is greater than the critical value, I rejected the null hypothesis that the ranks are independent of each other. We conclude that HDI, ELF and voter turnout are strongly correlated with electoral volatility in a statistically significant way. As before, we undertake a bivariate analysis of the variables as shown in Table 6.

Table 6: Pearson r Tests for Electoral Volatility, HDI, ELF and Voter Turnout for Western Cape 17 Cases.

Variables	Correlation	Significance of Correlation			Variability
	<i>Pearson r</i>	<i>95% Confidence Interval</i>	<i>t-value</i>	<i>p-value</i>	r^2
HDI	-0.615	-0.846, -0.191	-3.022	0.009	0.378
Coloureds	0.490	0.012, 0.785	2.175	0.046	0.240
Voter Turnout	0.275	-0.237, 0.668	1.109	0.285	0.076

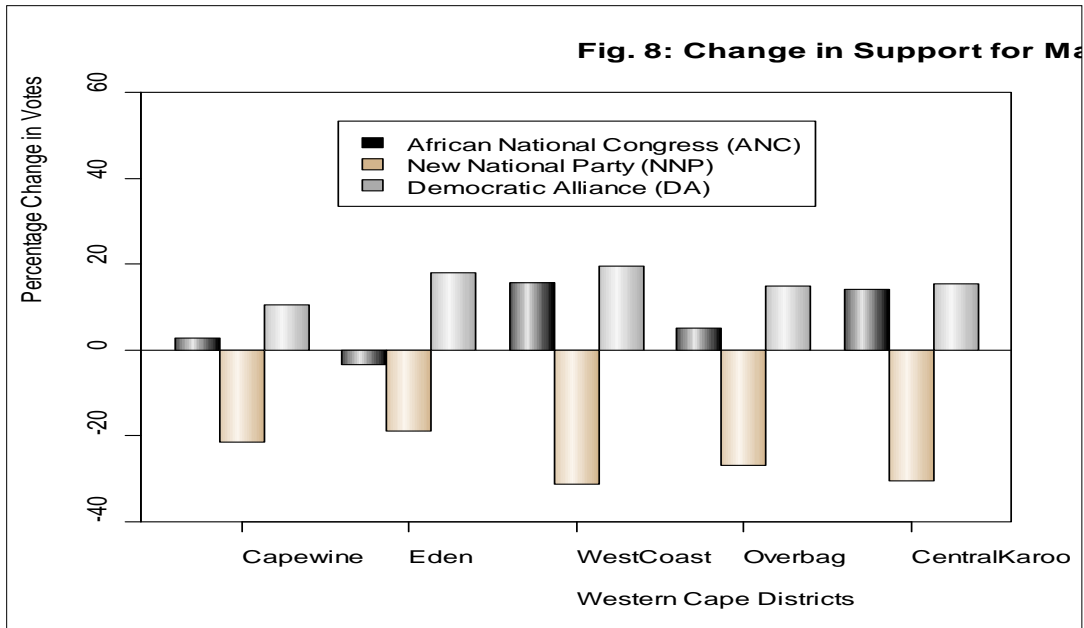
Table 6 shows that HDI has a strong negative correlation with electoral volatility which means that higher levels of HDI are correlated with lower volatility and vice versa. Relatedly, municipalities with greater concentration of the *Coloureds* tend to have higher volatility and vice versa. However, there is a weak positive correlation between voter turnout and volatility, which implies that although municipalities with higher voter turnout tend to register higher volatility, the relationship is weak. Similarly, the upper and lower confidence limits for HDI and *Coloureds* have the same signs (negative in the case of HDI and positive in the case of *Coloureds*). As already explained, this implies that the bivariate correlations between volatility and HDI as well as *Coloureds* are both statistically significant. However, when it comes to voter turnout, the lower confidence limit is negative while the upper limit is positive. This means that there is a possibility that the true value of the correlation coefficient is zero and hence the correlation is not statistically significant.

Contrary to the results at the provincial level, the HDI correlation coefficient at the municipal level is negative which means that municipalities with lower HDI in Western Cape province tend to register higher electoral volatility and vice versa. In other words, municipalities with worse living conditions are associated with higher electoral volatility. This finding is in line with the study hypothesis. This means that there could be other factors at the provincial level in South Africa, which artificially destabilize electoral volatility. Figure 7 shows the location of the 17 Western Cape municipalities selected for this study in a scatterplot of HDI and electoral volatility.



Data Source: *The Provincial Treasury (Provincial Government of Western Cape). The Western Cape Provincial Economic Review and Outlook 2006*; Independent Electoral Commission of South Africa.

Next, I examine changes in the level of support for the three main parties in Western Cape in the 1999 and the 2004 national elections. Figure 8 shows the percentage of votes lost or gained by the three major parties in Cape Province. Although the figure gives data for the districts, I actually did the analysis at the municipal level which is below the district. However, to present a less crowded figure, I have condensed the 17 municipalities into their respective districts for visual clarity. Appendix 1 shows which of the 17 municipalities belong to which district shown in Figure 9.



Data Source: Independent Electoral Commission of South Africa

Figure 9 suggests that much of the electoral volatility in Western Cape is due to realignment within the opposition characterized by change in support for the New National Party (NNP). Contrary to the expectation that ANC gained from these losses, it is actually the Democratic Alliance (DA) which gained more from NNP losses. It is only in West Coast and West Karoo districts where ANC support increased considerably. This confirms the second hypothesis for the South African puzzle that areas which were initially not receptive of ANC are shifting support among opposition parties in search of a credible and viable option to ANC.

The foregoing discussion begs the question: Why did voters in Western Cape punish NNP? Our theory rests on the assumption that it is the incumbents who are either rewarded or punished. It turns out that NNP was in many respects the incumbent in

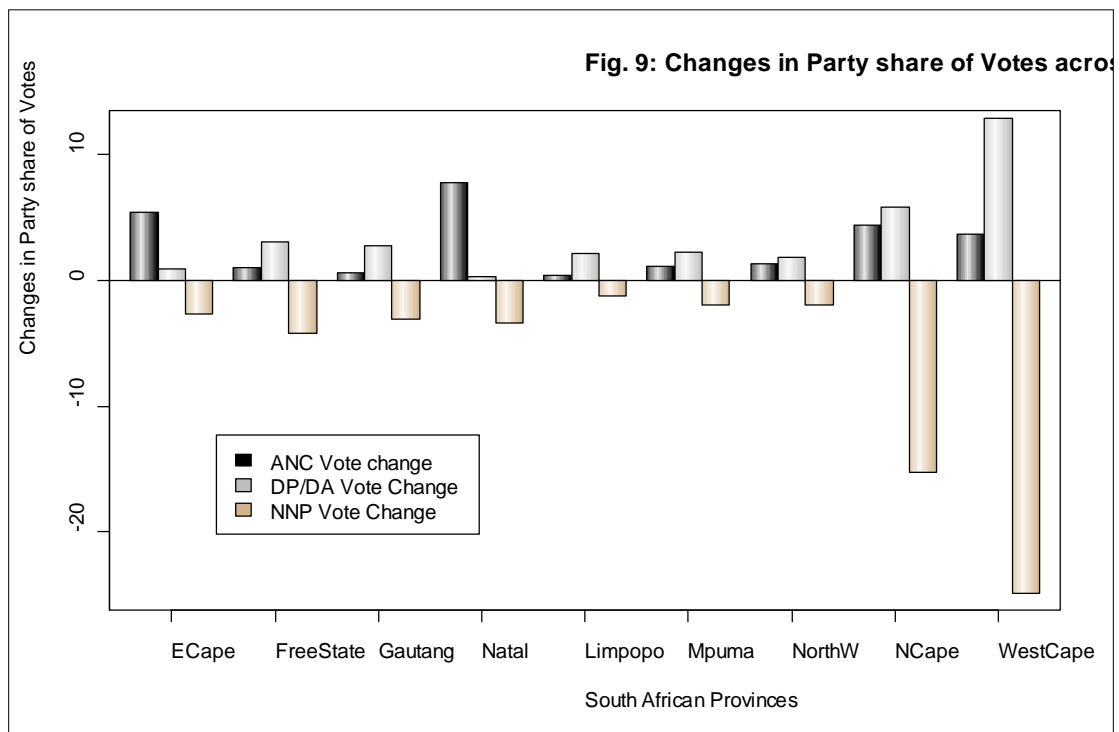
Western Cape. In the 1999 provincial elections, ANC won 42.1% of votes, while NNP and the Democratic Party (DP) got 38.4% and 11.9% respectively (Reynolds, 1999). Since the elections did not produce an outright winner, NNP and DP formed Democratic Alliance (DA) as a coalition government, headed by a DP Premier. However, in June 2002, NNP pulled out of the coalition and formed a new coalition with the ANC, headed by its premier. In 2004, NNP contested the Western Cape election as a coalition partner with the ANC (Knight, 2004). In effect, it did not offer the electorate anything substantially different from the ANC.

This brings us to the question about how voters apportion rewards and punishments in coalition governments. There are at least three reasons why NNP may have been singled out for punishment. First, it is the only party that was in government throughout the five years between the 1999 and the 2004 elections. Second, it held the premier's position up to the election time. Since the economy of Western Cape like in the rest of South Africa declined during this period, voters' anger could be understandable. Third, NNP had formed a coalition with DP aimed at keeping ANC out of Western Cape and hence the very act of deserting DP to work with the ANC alienated it from the crucial anti-ANC voters in Western Cape. It could no longer be trusted to provide a credible alternative to the ANC.

In fact, the study established, as shown in Figure 10, that the anti-NNP scenario in Western Cape was replayed throughout the country. It is apparent that provinces like Western Cape and Northern Cape which had the highest electoral volatility are

actually the ones in which NNP had won a substantial share of votes in the 1999 elections. With the exception of Kwazulu Natal and Eastern Cape provinces where ANC was a major benefactor in the shifting party support, the Democratic Alliance was the major beneficiary in the remaining seven provinces.

Figure 9: Changes in Party share of votes in South African provinces (1999-2004)



Data Source: Data Source: Independent Electoral Commission of South Africa

5.6 Conclusions

On the surface, the analysis of electoral volatility in South Africa yields mixed results. At the municipal level there is a strong negative relationship between HDI and electoral volatility as predicted by our theory. However, at the provincial level, the relationship is reversed so that provinces with relatively better living conditions are reporting higher electoral volatility and vice versa. Figures 9 and 10 suggest that there is strategic realignment against the NNP. In Western Cape, the disaffection with the NNP was greater given that it was part of the two ruling coalition governments formed between 1999 and 2004. It is apparent that throughout the country, the provinces which had greater support for NNP in 1999 were reporting high volatility as voters desert it for the DA. It seems that the party's decision to walk out on its coalition partner, DA and form a coalition with ANC in 2002 was a political miscalculation which alienated it from its core constituencies in the whole country. It is hardly surprising that the party eventually dissolved in April 2005 (Freedom House, 2006). This illustrates my argument that the elites are unlikely to dissolve a party unless its support base is considerably weakened. Although it seems that the alignments were at the political party level, it is clear that voters were at the centre of the unfolding NNP misfortunes.

CHAPTER VI: CONCLUSION AND FUTURE RESEARCH DIRECTION

6.1 Integrating Key Study Findings

A key strength of this study lies in the richness of its methodology. On the one hand, the study fuses cross-national aggregate data for 30 Sub-Saharan African countries, with provincial and constituency/municipal-level aggregate data for Kenya and South Africa. This multilayered approach enables us to check variation in the correlation between electoral volatility and living conditions at different levels of aggregation. The study also uses different analytical tools- bootstrap methods, Kendall W and Pearson r. The strength of this approach is that it enhances the robustness of the findings. Since the analysis at the national level yields consistent results with those at provincial and the constituency/municipal levels, despite the difference in aggregation levels and methodology used, I have more confidence in the robustness of the findings.

This section ties together the findings of the study. The overriding concern is whether, given the findings of the study up to this point, we can conclude that living conditions in sub-Saharan Africa affect volatility. I use t-values to determine the significance of the correlations between volatility and other key variables.

HDI was the key variable used to measure living conditions. However, due to lack of data at the constituency level in Kenya, I used Poverty Incidence. At the same time to be sure that the South African puzzle is not due to the use of HDI, I also used Unemployment as an alternate indicator of living conditions. The study shows

that living conditions, whether measured in terms of HDI, Unemployment or Poverty Incidence, have a significant influence on electoral volatility. In the Kenyan constituencies, it is noticeable that as poverty incidence in a constituency rises, voters are more likely to shift support from one party to another, leading to higher volatility. It is apparent that better living conditions are strongly correlated with low electoral volatility except at the provincial level in South Africa.

The robustness of the findings is further demonstrated by the fact that the South African provincial-level puzzle persists whether HDI or Unemployment is used to measure living conditions. The sample size notwithstanding, it is not surprising that the South African provinces with lower HDI and those with higher unemployment rates tend to register low volatility. At the same time, provinces with relatively high concentration of unemployed Coloureds tend to have higher volatility. It is thus understandable why Western Cape Province, with high concentration of Coloureds, has both the highest living standards and the highest volatility in South Africa.

Besides the unique position of the Coloureds in South Africa, there is no strong evidence of ethnic fragmentation influencing electoral volatility. In both the cross-national analysis and the Kenyan case study, the t-value for ethnic fragmentation is weak. As is the case with the South African provinces, it is noticeable that the municipalities in Western Cape Province with relatively greater concentration of the Coloureds such as *Laingsburg*, *Beaufort West*, *Bergriever* and *Cederberg*, registered relatively higher volatility. It is clear from Appendix 1 that the lowest concentration

of Coloureds in the 17 Western Cape municipalities studied are in *Overstrand* and *Knysna*, where they respectively constitute 37.3% and 44.1% of the population. The two municipalities also had relatively low volatility scores of 19.8% and 18.9% respectively. However, it must be remembered that the Coloureds are not a distinct ethnic group but a race in search of self identity.

Relatedly, party systems and institutional variables are only testable at the cross-national level. Indeed, cross-national variables such as political freedoms, electoral rules and party systems, are reduced into constants once the focus shifts to a single country. Political freedoms and concurrent elections had very weak t-scores. At the same time, the high electoral volatility in Western Cape Province and indeed, the volatility scores in all the South African provinces seem to have been inflated by a shift in voter preference from the New National Party (NNP) to the Democratic Alliance (DA). The t-value for NNP is -4.945 which is not only very high but is also indicative of the fact that as support for NNP declines, volatility increases. On the other hand, the t-value for DA is 2.301 which imply that as support for DA increase, so does electoral volatility. When these two observations are taken together, it implies that as support for NNP declined, that of DA increased. In effect, DA seems to be absorbing the disillusioned NNP supporters.

6.2 Implications of the Findings for the Investor-Voter Model

One of the key assumptions of the *Investor-Voter Model* which drives this study is that investor-voters are only loosely attached to political parties and that they can easily shift party preference if dividends are not forthcoming from their investment. This study has unearthed several ways in which loose attachments to party affect electoral volatility. First, when investor-voters are dissatisfied with the party in which they last invested their votes, they can shift not only to other parties, but can also shift support towards independent candidates as happened in Malawi in 2004.

Second, dissatisfied investor-voters may also become apolitical and refuse to vote as happened in Western Cape Province where only 42.6% of the voters turned out to vote as compared to the second lowest turnout of 64.4% in Mpumalanga. The other seven provinces had turnout ranging from 73.5% in Kwazulu Natal to 89.3% in North West. The few voters who turned out to vote in Western Cape apparently did so to 'throw out the rascals' as already discussed in the last chapter. The same cast was reenacted during Namibia's 1998 local authority elections where the national voter turnout was a paltry 34%. In fact some observers have noted that during those elections, the main opponent of the ruling party was not the opposition parties, but apathy. The low turnout was partly because in some case voters felt that 'the candidates lacked leadership qualities' and therefore voters 'could not see what difference voting would make, because they still face the same problems like poor education and unemployment' (Cowen and Laakso, 2002:204).

Similarly, although the study did not rely on voter's accounts of what motivates them to vote as they do, it has established an aggregate voting pattern whereby states, provinces, constituencies, and municipalities with poor aggregate living conditions, tend to record very high electoral volatility and vice versa. However, these aggregate units do not vote; it is the individuals residing in the units who actually cast their ballots in a way that produce high or low volatility. The fact that aggregate election results correlate well with aggregate economic variables like HDI and poverty incidence in different areas suggest that voters are conscious about the state of the economy.

6.3 Conclusions

This study set out to investigate the impact of voters' aggregate living conditions on electoral volatility. To do so it was necessary to address two major deficiencies from which studies on economic voting have suffered. First, I have presented a refined concept of electoral volatility which isolates the share of deserted seats from the Pedersen index of electoral volatility. I believe the resultant index reasonably captures volatility due to shifts in voter preference. Second, I have lifted the lid on the economic voting black box, and identified voters and not institutions or social cleavages as what gives form and substance to electoral volatility. In other words, voters are the primary link between economic variables and electoral volatility.

On the surface, it would appear that this study has unearthed mixed findings. At the cross-national level it is clear that countries with relatively better living conditions tend to register lower electoral volatility and vice versa. This finding is replayed at the provincial and constituency level in Kenya. However, the relationship between living conditions and volatility at the provincial level in South Africa is strong but in the reverse direction so that as HDI increases, electoral volatility also increases and vice versa. A close examination of Western Cape Province which had the highest electoral volatility in South Africa showed that municipalities with relatively better living conditions reported lower volatility as our theory predicts. It turns out that the provincial volatility in South Africa is exaggerated by the strategic realignment among anti-ANC voters as they abandon the NNP for DA. This realignment is also economically-driven and thus the hypothesis holds even in the case of South Africa.

6.4 Directions for Future Research

This study relied on anecdotal evidence from African countries such as Lesotho and Botswana, which shows that change in the electorate's composition, does not affect volatility. It is possible that the anecdotal evidence relied on are biased rather than representative of the continent. Therefore, there is need for systematic investigation on whether change in the composition of voters affects election outcomes.

There is still a need to determine whether there is any substantial difference between sociotropic and egotropic voting. In this study we have focused on broad economic voting, due to the aggregate nature of the study. It is possible that there is a strong

correlation between the two, so that those, whose individual living conditions are good, evaluate the national economy to be doing well and vice versa.

Still, it is important to establish why some people living in abject poverty would support incumbents while others enjoying good living conditions would reject the incumbents. This is prompted by the provincial level results in South Africa. In fact, it would be good to replicate the South African study at the precinct level.

The problem of data availability notwithstanding, this study has presented strong evidence of economic voting and its influence on electoral volatility in Sub-Saharan Africa. The study does not claim to have conclusively addressed causes of volatility, but it provides a useful conceptual, theoretical and methodological seedbed and thus a solid base for comprehensive studies on volatility in Sub-Saharan Africa.

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Appendix 1 Data on Selected Municipalities in Western Cape Province

District	Local Municipality	EV	HDI	Voter Turnout	Shift in ANC Support	Shift in NNP Support	Shift in DP/DA Support
Cape Wine	Stellenbosch	19.7	0.74	69.1	3.7	-20.1	09.3
	Drakestein	20.6	0.70	70.1	0.1	-15.2	10.5
	Witzenberg	13.8	0.72	69.2	3.8	-25.3	10.6
	Breede Valley	25.8	0.68	68.7	3.7	-25.0	11.9
Eden	George	25.5	0.69	74.0	-2.6	-21.6	22.0
	Kannaland	26.5	0.66	71.6	-5.4	-12.7	16.5
	Knysna	18.9	0.69	81.1	-9.7	-08.0	11.0
	Mossel Bay	33.2	0.70	79.5	4.0	-29.3	26.1
	Oudtshoorn	31.4	0.69	66.3	-3.6	-22.8	13.9
West Coast	Cederberg	32.8	0.67	73.5	8.4	-26.4	19.0
	Bergrivier	40.0	0.66	75.4	22.7	-36.3	20.0
Overbag	Bredersdorp	35.5	0.69	77.8	5.6	-32.5	24.7
	Overstrand	19.8	0.73	78.0	-2.3	-21.9	19.5
	Swellendam	28.2	0.72	75.6	5.2	-27.1	10.9
	Caledon	27.8	0.71	65.8	11.4	-26.0	3.9
Central	Lingsberg	36.4	0.68	77.1	13.1	-30.5	21.4
Karoo	Beafort West	33.1	0.64	79.7	14.8	-30.5	09.4

Data Source: Independent Electoral Commission of South Africa; Western Cape Provincial Economic Review and Outlook 2006 :(http://www.capegateway.gov.za/eng/publications/reports_research/W/133987-03/08/09).

Appendix 2: Data on Sub-Saharan Africa

Country	Election Dates		EV	HDI	ELF	VO	FRE	SY	C
Benin	1999	2003	24.7	0.431	0.788	55.9	2.0F	PR	N
Botswana	1999	2004	06.0	0.570	0.358	76.2	2.0F	FPP	Y
Burkina Faso	1997	2002	39.6	0.302	0.480	64.1	4.0P	PR	N
Cameroon	1997	2002	19.8	0.501	0.818	70.0	6.0N	Mix	N
CA.R.	1998	2005	54.1	0.384	0.783	67.3	4.5P	FPP	Y
Chad	1997	2002	50.8	0.379	0.860	52.4	5.5N	FPP	N
Cote d'Ivoire	1996	2000	48.1	0.402	0.742	31.5	5.5N	FPP	N
Comoros	1996	2004	27.8	0.556	0.566	65.0	4.0P	FPP	N
Djibouti	1999	2003	16.9	0.495	0.514	47.8	5.0P	FPP	N
Ethiopia	2000	2005	36.9	0.406	0.772	82.6	5.0P	FPP	N
Equatorial Guinea	1999	2004	0.80	0.653	0.259	96.5	6.5N	FPP	N
Gabon	1996	2001	10.6	0.653	0.690	44.0	4.5P	FPP	N
Gambia	1998	2002	22.4	0.452	0.755	56.4	4.0P	FPP	N
Ghana	2000	2004	07.0	0.567	0.744	85.0	2.0F	FPP	Y
Guinea	1995	2002	18.4	0.425	0.700	71.6	5.5N	Mix	N
Kenya	1997	2002	32.0	0.488	0.859	57.0	4.0P	FPP	Y
Lesotho	1998	2002	32.9	0.493	0.006	66.7	2.5F	Mix	Y
Malawi	1999	2004	38.1	0.400	0.649	59.8	4.0P	FPP	Y
Mali	1997	2002	49.8	0.326	0.690	38.3	2.5F	FPP	N
Mauritania	1996	2001	19.4	0.454	0.660	54.4	5.0P	FPP	N
Mauritius	1995	2000	0.4	0.775	0.453	81.5	1.5F	FPP	N

Namibia	1999	2004	13.9	0.626	0.718 *	84.8	2.5F	PR	Y
Nigeria	1999	2003	10.0	0.453	0.815	49.3	4.0P	FPP	N
Sao Tome & Principe	1998	2002	12.9	0.645	0.330	66.3	1.5F	PR	N
Senegal	1998	2001	29.2	0.430	0.723	67.4	3.5P	Mix	N
Sierra Leone	1996	2002	46.6	0.273	0.720	83.0	4.0P	PR	Y
South Africa	1999	2004	18.5	0.653	0.861	76.7	1.5F	PR	Y
Tanzania	1995	2000	37.1	0.440	0.650 *	84.0	4.0P	FPP	Y
Zambia	1996	2001	47.5	0.386	0.751 *	68.5	4.5P	FPP	Y
Zimbabwe	2000	2005	14.1	0.513	0.307	47.7	6.5N	FPP	N

1. ELF values for Lesotho, Mauritius and South Africa are taken from Norris Pippa and Robert Mattes. 2003. Does Ethnicity Determine Support for the Governing Party? *Afrobarometer Working Paper 26* (<http://www.afrobarometer.org/abseries.html-02/05/09>).

2. Data Source: Freedom House. 2006. *Freedom in the World 2006: the Annual Survey of Political Rights and Civil Liberties*. New York: Rowman and Littlefield; UNDP. 2006. *Human Development Report 2006. Beyond Scarcity: Power, Poverty and the Global Water Crisis*. New York: Palgrave Macmillan; Parline database on national parliaments (<http://www.ipu.org/parline-e/parlinesearch.asp-02/25/09>); Adam Carr's Election Archives (<http://psephos.adam-carr.net-02/24/09>). Scarritt and Mozaffar Dataset on African Ethno-political group fragmentation and Concentration (<http://webhost.bridgew.edu/smozaffar-02/20/09>); African Elections database (<http://africanelections.tripod.com-02/28/09>); The Joshua project (<http://www.joshuaproject.net/countries.php?rog3=CN-03/08/09>); IDEA International: (<http://www.idea.int/esd/world.cfm-02/24/09>); CIA World Fact book <https://www.cia.gov/library/publications/the-world-factbook/-02/13/09>).

3. EV = Electoral volatility; HDI = Human Development Index; ELF = Ethno-Linguistic Fractionalization Index; VO = Voter Turn Out; FRE = Freedom; SY = Electoral System; C = Concurrent Presidential and parliamentary Elections; PR = List PR; FPP = First Past the Post; Mix = Mixed System; F = Free; N = Not Free; P = Partially Free; Y = Yes; N = No.

Appendix 3: Data on Kenyan Provinces

Province	HDI	Electoral Volatility	Voter Turnout	ELF
Central	0.607	24.1	66.1	0.077
Rift Valley	0.510	16.4	60.8	0.668
Eastern	0.525	27.9	60.9	0.547
North-Eastern	0.473	18.2	57.8	0.069
Western	0.449	54.2	57.1	0.211
Nyanza	0.440	31.3	55.6	0.503
Coast	0.467	52.4	42.1	0.533
Nairobi	0.758	00.0	42.0	0.704

Data source: The European Union Observer Mission Report: (<http://aceproject.org/regions-en/ied/KE/reports/Kenya%20-%20EU%20rep02.pdf-02/08/09>); The Third Kenya Human Development Report: [http://hdr.undp.org/en/reports/nationalreports/africa/kenya/ Kenya_2003_en.pdf](http://hdr.undp.org/en/reports/nationalreports/africa/kenya/Kenya_2003_en.pdf) (02/08/09); Government of Kenya.1989 Kenya Population Census. University of Pennsylvania. East Africa Living Encyclopedia <http://www.africa.upenn.edu/NEH/kethnic.htm-02/15/09>).

Appendix 4: Data on South African Provinces

Province	HDI	EV	Voter Turnout	ELF	Unemployment	Change in ANC Support	Change in DP/DA Support
Eastern Cape	0.618	13.9	81.1	0.287	29.6	5.4	0.9
Free State	0.672	14.6	78.9	0.564	28.6	8.2	3.0
Gauteng	0.735	23.5	76.4	0.672	25.7	0.5	2.7
Kwa Zulu	0.631	17.9	73.5	0.337	28.7	7.7	0.3
Limpopo	0.594	4.7	85.3	0.639	27.8	0.4	2.1
Mpumalanga	0.649	9.2	64.4	0.726	24.8	1.1	2.2
North-West	0.606	8.1	89.3	0.499	24.4	1.3	5.8
Northern Cape	0.686	23.2	80.5	0.474	28.0	4.4	1.8
Western Cape	0.771	40.7	42.6	0.573	18.6	3.7	12.8

Data Source: Independent Electoral Commission of South Africa; South Africa Human Development Report, 2003; South Africa.info; South Africa Labor Force Survey, September 2004, cited in Statistics South Africa. 2006. *Provincial Profile 2004: Free state*. Report No. 00-91-04

Appendix 5: Data on Selected Kenyan Constituencies

Constituency	Electoral Volatility	Poverty Incidence I*	Poverty Incidence II*	Voter turnout
Ainamoi	15.8	52	45	59.0
Alego	26.3	62	68	50.6
Amagoro	36.6	48	50	60.6
Bonchari	35.8	62	74	58.3
Budalangi	17.4	68	70	64.2
Charangany	36.7	51	49	61.5
Dagoretti	11.7	46	46	47.3
Eldama Ravine	0.0	43	47	66.9
Eldoret North	8.4	47	54	57.1
Galole	25.5	62	42	53.5
Gichugu	5.8	34	34	70.2
Ikolomani	38.1	71	72	54.6
Imenti North	18.2	44	44	65.1
Kacheliba	6.6	47	47	46.2
Kajiado South	4.1	50	50	60.7
Kaloleni	38.8	73	74	42.7
Kandara	27.1	36	36	65.3
Kathiani	33.9	62	59	52.6
Keiyo South	12.3	40	38	69.4
Kilgoris	22.9	53	59	64.7
Kisauni	18.4	47	46	33.2
Kitui South	72.4	74	63	50.3
Laikipia East	13.2	43	44	59.4
Likoni	8.4	48	45	34.8
Lugari	17.3	61	64	58.4
Makadara	15.7	59	59	41.0
Malindi	19.9	63	61	40.4
Marakwet East	27.9	41	42	66.3
Matungu	40.8	58	59	63.1
Mbooni	19.0	67	65	57.6
Molo	20.2	40	43	58.3
Mt. Elgon	11.3	53	55	66.1
Muhoroni	12.9	52	58	53.3
Mwala	24.7	64	64	52.1
Mwatate	25.1	58	59	49.3

Narok South	20.8	53	53	62.6
Nyakach	17.9	61	64	57.8
Olkalau	11.7	33	33	68.1
Rongo	7.3	45	44	58.5
Runyenjes	55.4	58	58	64.8
Saku	15.7	45	46	73.3
Sigor	32.4	54	53	59.8
Sirisia	4.4	58	58	63.0
Sotik	40.1	56	49	65.1
Tharaka	44.7	63	63	73.1
Tigania West	27.7	58	61	75.4
Tinderet	29.9	57	56	62.9
Turkana Central	46.6	72	64	52.9
Uriri	42.0	49	49	58.5
Vihiga	31.2	56	57	55.5
Lagdera**	22.8	-	64	58.5
Mandera East**	30.8	-	65	64.6
Wajir West**	24.3	-	63	55.7

Data Source: World Bank. 2003. *Poverty and Inequality: Geographic Dimensions of Well Being in Kenya: Where are the Poor?* (Volume I and II): <http://go.worldbank.org/Z1Q8HEQOE0> and <http://www.cbs.go.ke/surveys/poverty/pdf/KenyaPovAtlasIIfinal2cl.pdf>; The European Union Observer Mission Report: (<http://aceproject.org/regions-en/ied/KE/reports/Kenya%20-%20EU%20rep02.pdf-02/08/09>); Institute for Education in Democracy.1998. *Understanding Elections in Kenya: A Constituency Profile Approach*. Nairobi: Institute for Education in Democracy.

*Poverty Incidence I is based on volume I and Poverty Incidence II is based on volume II of the World Bank (2003).

**constituencies marked with asterisk are from North-Eastern Province. Since volume I of the World Bank (2003) did not have data for the province, the three selected constituencies do not have Poverty Incidence I data.

Appendix 6: Revised Kenya Constituency-Level Analysis

The analysis in section 4.3 is based on poverty incidence data derived from *World Bank. 2003. Poverty and Inequality: Geographic Dimensions of Well Being in Kenya: Where are the Poor? (Vol. I; Chapter 5)* (<http://go.worldbank.org/Z1Q8HEQOE0>). The data is aggregated at administrative levels, like *Divisions*, and not at the constituency-level. I therefore, relied on personal knowledge of the country to determine constituency poverty incidence from the *Division*-level data. In this regard, I selected *Divisions* which, in my judgment, constitute a given constituency, and used their rural poverty incidence averages as the poverty incidence for that particular constituency. At the same time, Volume I lacks data for North-Eastern Province and therefore I omitted the province from my analysis.

However, in the final stages of preparing the paper, I accessed Volume II of the same document (<http://www.cbs.go.ke/surveys/poverty/pdf/KenyaPovAtlasIIfinal2cl.pdf> - table 1). It has data for North Eastern province as well as constituency-level poverty incidence data for all the 210 Kenyan constituencies. The two volumes are hosted by different websites. I first performed the test of difference of means to check whether the two sets of data have significantly different means for the constituencies I had selected. The *Paired t-test* results are: $t = 0.120$, $df = 49$, $p\text{-value} = 0.905$, the 95% confidence interval for the test ranges from -1.263 to 1.423. The mean poverty incidence from volume I data is 53.94, while from volume II data is 53.86. In effect, the mean of the differences is 0.08, which is not statistically significant given $p\text{-value} = .905 > \alpha = .05$. This means that the difference between the poverty incidence scores in volume I and II are not statistically significant.

using volume II data, I ran two robust regression models. Model 1 replicated the analysis presented in table 4 using poverty incidence data from volume II data. This was necessary because the analysis presented in table 4 is based on rural poverty incidence only, while the volume II data has general poverty incidence scores for each constituency. In Model 2, I added 3 constituencies from North-Eastern

Province (the last three constituencies in Appendix 5), since module I had no data for the province. The results of the two models are presented below:

Table 7: Robust Regression of Constituency-Level Electoral Volatility in Kenya

	Model 1	Model 2
Poverty Incidence	0.570 *	0.549 *
	(0.186)	(0.173)
	[3.064]	[3.167]
Voter Turnout	0.188	0.188
	(0.204)	(0.194)
	[0.922]	[0.967]
Intercept	-18.378	-17.500
	(17.262)	(16.251)
	[-1.065]	[-1.077]
Residual Standard Error	13.42	12.66
N	50	53

*significant at 95% confidence level.

The standard error for each variable is in parenthesis, while the t-scores are in the brackets.

The results are substantively the same as those in table 4, and hence do not need re-interpretation. It is clear that volume I and II data yield more or less similar results.