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Determinants of Institutional Quality in Sub-Saharan African Countries

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Abstract*

In this study, a number of factors have been considered as potential determinants of institutional quality in sub-Saharan African countries. The empirical analysis has shown that historical factors such as state legitimacy determine the quality of current institutions in the region. Foreign aid dependence is found to erode quality of governance as measured by rule of law, government effectiveness and control of corruption. Variability of aid is found to counterbalance the destructive nature of high level of aid dependence. However, the last result is not retained in the robust regression analysis performed. Countries with strong political constraints on the ruling elites, proxied by checks and balances between executive and legislative branches of governments, and press freedom, are found to have better quality of institutions. Large countries and those closer to equator are disadvantaged in their success of building better quality institutions. Unlike the popular discussions, ethnic fractionalization and identity of last coloniser do not explain variations in institutional quality in the region.

Key Words: Institutional Quality, Rule of Law, Foreign Aid, Colonialism, Ethnic Fractionalization and Sub-Saharan Africa

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I. Introduction

In this study, economic institutions are defined as the rules of the game which are equilibrium outcomes of strategic interaction of agents. Institutions are devised to constrain/encourage agents, to reduce the uncertainty of social interaction and to prevent transactions from being too costly and thus to allow the productivity gains of larger scale and improved technology to be realized (Bardhan, 1999).

I take good institutions as those that are good for economic development. Shirley (2003) puts two sets of institutions countries need to meet the challenges of development: those that foster exchange by lowering transaction costs and encouraging trust (contracts and contract enforcement mechanisms, commercial norms and rules, and habits and beliefs favouring shared values) and those that influence the state to protect private property rather than expropriate it (constitutions, electoral rules, laws governing speech and legal and civic norms). Acemoglu et al (2004) adds on the above point by taking good economic institutions as those that provide secure property rights for broad cross-section of the society with some degree of equality of opportunity so that those with good investment opportunities can take advantage of them.

There are four main approaches to the question of why countries have institutions that they are having now and why institutions differ across countries. According to 'Efficient Institutions' view, societies will choose economic institutions that are socially efficient weighing social costs against benefits to determine which economic institutions should prevail. A second view is that economic institutions differ across countries because of belief and ideological differences, between societies or their leaders, on socially beneficial institutions. According to 'Social Conflict' view, economic institutions are social decisions chosen for their consequences. Because different groups and individuals benefit from different economic institutions, there is generally a conflict over these social choices, ultimately resolved in favour of groups with greater political power. These groups will choose the economic institutions that maximize their own rents. Finally, the 'Incidental Institutions' view takes institutions as the unintended consequence of other social interactions or historical accidents. And these institutions persist for a long time Acemoglu et al (2004: pp 29-37).

Many people today live in countries that have failed to create or sustain strong institutions to foster exchange and protect property. In these countries, most bargains are enforced using informal mechanisms (threats to reputation, ostracism from kinship, ethnic or other networks, or the like) with little trust to trade with people not subject to these mechanisms. The state is either too weak to prevent theft of property by private actors, or so strong that the state itself threatens property rights. As a result, agents face a high risk of not being able to reap their return from investing in specific knowledge, skills or physical capital (Bardhan, 1999, and Shierly, 2003).

There is also a consensus that poor institutional quality is one of the main responsible factors for economic stagnation of sub-Saharan African countries. However, the consensus breaks down, when we come to the analysis of its determinants. There are many factors discussed in the literature that contributed to the poor institutional development of African countries such as: colonial heritages, resource curse and foreign aid dependence, political competition and constraints, and ethnic fractionalization.

Arguments, based on the persistence of historical institutions, advocate that historical accidents have major role in explaining the current quality of institutions in the region. It is often argued that colonialists introduced extractive institutions in their colonies depending on the identity of the coloniser and whether European themselves settled in their colonies. These colonial institutions are believed to persist and determine the quality of current institutions former colonies have. However, another version of historical explanations, i.e. the ‘state legitimacy’ hypothesis, points that the fact that all but one country has imported state structure explains that colonialism in itself does not explain variation in institutional quality in sub-Saharan Africa¹. Instead, whether colonial institutions discontinued the pre-existing political institutions and introduced institutions incongruent with the pre-colonial ones or not (vertical legitimacy in Englebert’s words) explains institutional quality in the region (Englebert, 2000).

¹ The occupation of Ethiopia by Italy from 1935-1941 is hardly included as colonialism in the literature considering the time it takes to build institutions.

This study provides an empirical support for state legitimacy hypothesis as I found a significant positive relationship between state legitimacy, as measured by vertical legitimacy, and the strength of rule of law. However, the identity of last colonizer variable generally do not explain variations in institutional quality as measured by rule of law, government effectiveness, regulatory quality, control of corruption, and political stability.

Some authors, in favour of indigenous institutional failures, doubt the persistence and continuity of colonial institutions to date. It is argued that independence took countries in widely different directions often accompanied by discontinuous changes in policy. Thus, revealing the need to consider post-colonial policies of rulers in understanding institutional quality today (Congdon Fors and Olsson, 2005).

It is argued that public officials are likely to deviate from benevolent behaviour, and hence to make the development of institutions of private property more difficult, whenever there exist rents likely to be captured by them (Straub 2000). Recently, foreign aid has been taken as an extractable rent present in most of sub-Saharan countries. This analysis provides evidence that higher aid dependence erodes the quality of institutions as measured by rule of law, government effectiveness and control of corruption. The mere expectation of aid is found, in the OLS regression, to be sufficient for eroding institutional quality as there is evidence that variation in the level of aid as a share of GNP counterbalances the destructive nature of heavy aid dependence on governance. But, this last result is not retained in the robust regression analysis performed while aid dependence still remains to be a significant explanatory variable.

However, when there are effective constraints on ruling elites that limit their power and range of distortionary policies that they can pursue, institutions of private property are more likely to arise or endure (Acemoglu et al, 2004). In this study, higher number of checks and balances between executive and legislative branches of governments are found to be important in determining institutional quality. Countries with strong checks and balance significantly have better quality of institutions as measured by rule of law, government effectiveness, regulatory quality, control of corruption, voice and accountability, and political stability. It is also shown that freedom of media, a measure of civil society participation and monitoring pressure on the public sector, has a strong positive association with strength of rule of law.

On the other hand, there are arguments pointing at ethnic fractionalization for the region's poor performance in institutional development. Ethnic fractionalization is closely associated with social polarization and entrenched interest groups thus resulting in sub-optimal policies and weak institutions (Easterly and Levine, 1997). However, it does not significantly explain the variations in institutional quality in this study. This is consistent with Englebert's argument that the region's success stories, in terms of institutional quality, are not different from the others when it comes to ethnic fractionalization Englebert (2000). This result has been complemented by a country specific study in which rather, politicization of ethnicity, and the underlying competition for power, may contribute to nations' instability and lack of durable peace.

This analysis sorts through the different theories and findings in the literature, in trying to find the significant variables in explaining institutional quality of 48 sub-Saharan African countries. Using a cross-sectional data from various sources, an empirical investigation of determinants of institutional quality is conducted. Many of the studies tried to explain this by including and excluding the sub sample of sub-Saharan countries while this study closely investigates this sub sample.

The rest of the paper is organised as follows. Section two broadly reviews related theoretical and empirical literature on institutional developments mostly in the context of Africa. Section three describes the nature and sources of the data used to analyze the issue at hand followed by a section for empirical analysis. In this section the basic model with the research hypotheses (theoretical expectations) of the study are presented. Regression results are also included in this section. One section is also devoted to a case study of Ethiopian institutions hoping that it would complement the cross country analysis by adding cultural, historical and political specificities. The final section concludes based on the major findings of the study.

II. Literature Review

Although different factors contribute to the bad development performance of the region, there is a consensus that poor institutional quality is one of the main responsible factors. The consensus breaks down, however, once we move to the analysis of its determinants. There are many factors discussed in the literature that contributed to the poor institutional development of African countries: colonial heritages, resource curse and foreign aid dependency, political competition and constraints, and ethnic fractionalization as discussed below.

Colonial heritage

The colonial heritage arguments, based on the premise that historical institutions persist and shape current institutions, state that African countries have poor institutions because they inherited bad and extractive institutions from their European colonizers. Legal origin has been used as proxy for the influence of colonial institutions on current activities of societies (La Porta et al 1999, Straub 2000 and Islam et al 2002). These studies find that countries with French legal origin have poorer institutional quality than those with other legal traditions. But why do the same colonizer countries establish different institutions in different countries? Acemoglu et al (2004) argue that European colonizers introduced extractive institutions in areas where there are resources and labour to be extracted and where the climate and the disease environment are not conducive for European colonizers to settle.

State legitimacy hypothesis states that it is rather the congruence between the colonial and pre-colonial institutions that matters for the quality of current institutions. Englebert (2000) argues that all but one African state are structures inherited from colonisation and hence the imported nature of the state is not by itself a factor of differentiation within Africa. Instead, he highlights its varying degrees of congruence with pre-existing political institutions in explaining diverse degrees of 'neo-patrimonialism' among African countries.

His argument is based on the point that formal institutions will be more likely to be efficient the more they are in harmony with informal institutions and norms, and the more they are outcomes of domestic social relations. In this line of argument ‘‘the legitimacy of African states is a function of its congruence with the pre-existing political systems and norms of political authority. Varying levels of legitimacy in turn create diverse sets of constraints to the power of political elites. The weaker the legitimacy of the states they inherit, the more likely it is that political contestation will turn into challenges to the state itself and the greater, therefore, the instability of the regime. In such conditions, elites are less likely to resort to developmental policies. Finally, the more neo-patrimonial the nature of the ruling system, the weaker the effectiveness of government institutions, the poorer the quality of governance, and the worse the choice of economic policies.’’ (ibid, 14)

In his empirical analysis, state legitimacy is also positively and strongly associated with state capacity² in the continent. He argues that Africa has paid a high price in terms of foregone growth by failing in the early 1960s to question the state structures it inherited from colonialism.

On the other hand, there are debates on the relative influence of colonial institutions. Herbst (2000) for instance argues that in the *few decades* of colonization, it was impossible for Europeans to change ‘everything’. However, Robinson (2002), in his argument for the primacy of colonial heritages, opposes this idea by pointing to the influence Europeans had on African institutions long before formal colonization started in the Berlin conference of 1885. He argues that it is this earlier expansion of Europe (starting in the 15th century) ultimately leading to full colonization that played the major role in historical evolution and failure of African state institutions.

² A similar concept as institutional quality in this analysis. He proxied state capacity by governance variables of International Country Risk Guide (ICRG) which are often used as measures of institutional quality.

Congdon Fors and Olsson (2005) on the other hand argue that although colonial policy is relevant for understanding the current institutional environment, post-colonial policies of rulers should also be considered in understanding institutional quality today. According to them, the prevalence of a government-controlled stream of resource rents combined with weak interests in the modern sectors provided post-independence rulers with incentives to neglect or weaken private property rights institutions. This point is further discussed below.

Extractible Rents and Resource Curse

The availability of extractable rents is also taken as another determinant of institutional quality such as the efficiency of the public bureaucracy, the efficiency of the judiciary system, or corruption. The presence of extractable rents sometimes appears to make the development of institutions of private property more difficult (hence 'resource curse'). This is because public officials are likely to deviate from benevolent behaviour whenever there exists rents likely to be captured by them (Straub 2000).

Natural resource endowments of a country (exogenous rents) and non-natural rents, derived from aspects of the economic organisation that introduce monopolistic power in some sectors, are discussed in the literature. The size of these rents has been proxied by the share of natural resource export, the size of state-owned enterprises, openness, the level of existing price controls, the extent of regulatory burden and the degree of industrial concentration. (Straub, 2000 and Islam et.al, 2002)

Islam et.al (2002) found that concentration of trade in natural resources exports continues to be associated with poor institutional quality after openness in trade is accounted for. Congdon Fors et.al (2005) also observed a negative relationship between strength of property right institutions and country size, which is associated with greater potential for point natural resources and the cost of property rights institutions investment in their analysis.

Aid- Institutions Paradox

Recently in aid-institution paradox literature, foreign aid has been taken as an extractable rent present in most of sub Saharan countries. Knack (2000) in his analyses of cross-country data provide evidence that higher aid levels erode the quality of governance, as measured by indexes of bureaucratic quality, corruption, and the rule of law. However, Aid variability reduces the reliance on aid as a stable source of fund thus diminishing the harmful impact of aid in the quality of institutions. He found that aid variability matters but "Predictable variability" does not in reducing the adverse effects of aid. The latter finding is in line with the argument that expectation of foreign aid by itself suffice in eroding institutional quality in a country.

Aid dependency also believed to affect the tax effort of governments which many argue to be basic in institutional development of countries. Foreign aid is generally expected to reduce tax shares since aid provides an alternative, non-earned source of revenue for governments in addition to tax revenue. Consequently, a government that receives significant amount of aid is thought to have less incentive to tax and improve its tax administration (Brautigam and Knack, 2004 cited in Moss et al, 2006).

Aid has also been argued to weaken state-citizens relationships by undercutting government accountability, and ownership and participation on the part of citizens. Moss (2006: 14) justifies this point as follows: "Large aid flows can result in a reduction in governmental accountability because governing elites no longer need to ensure the support of their public and the assent of their legislatures when they do not need to raise revenues from the local economy..... If donors are providing the majority of public finance and governments are primarily accountable to those external agencies, then it may not be possible to expect a credible social contract to develop between the state and its citizens." He further argues that the decline in ownership as a result of the externalization of decision-making also undermines popular participation of citizens.

Ethnic Fractionalisation

Another explanation for institutions in Africa is that African countries have weak institutions and adopt poor policies because of their ethnic fractionalization. Easterly and Levine (1997) argue that ethnic diversity has led to social polarization and entrenched interest groups in Africa and has thereby increased the likelihood of selecting socially sub-optimal policies. They find ethnic diversity, as measured by ethno-linguistic fractionalisation index, to be a significant determinant of poor policies, weak institutions and low growth both in Africa and in world-wide cross sectional regressions.

However, Englebert (2000) argues against the above proposition by pointing that Africa's success stories are not significantly different from its failures in terms of their ethnic composition thus failing to be able to account for the variations in state capacity observed across Africa. He found no significant relationship between ethnic fractionalisation and governance indices.

Political Competition and Constraints

Some argue that Africa's weak institutions resulted from too little political competition (or lack of interstate conflicts). Herbst (2000) suggests that the structural conditions for state formation and institution building in Europe were absent in Africa. Unlike in Europe, land was not scarce in Africa. Thus in the pre-colonial period, states did not fight over land and hence were without constant necessity of defending territory. During colonialism, there was little fighting over borders between the colonial powers. Hence, they had little incentive to develop state institutions, except where there was a large European presence. After independence, colonial boundaries were made to largely determine the form of the newly formed nations by the international state system and United Nations hence preventing border disputes once again. As a result, Herbst argues that, African states did not develop institutions that could effectively guard their territories.

Accordingly, the lack of development of African state institutions helps explain many aspects of modern Africa. Since states never had to fight to survive they never had to build effective fiscal institutions. States never had to make political concessions to their citizens, hence the lack of functioning domestic political institutions in Africa. (ibid)

Political constraints on the ruling elites are another determinant of institutional quality in the social conflicts theories of institutions. When there are effective constraints on elites that limit their power and range of distortionary policies that they can pursue, institutions of private property are more likely to arise or endure (Acemoglu et al, 2004). Empirical studies have shown that higher number of checks and balances between the executive, legislative and judicial powers are important in determining overall institutional quality. Freedom of media also has an empirical justification of enhancing the quality of institutions in a country. (Islam et al, 2002)

This paper attempts to sort through these stories and investigate what explains the quality of contemporary institutions in Sub-Saharan Africa. Attempts will be made to investigate whether distant historical institutions like colonial heritages and/or indigenous factors decide the fate of African countries in their institutional development.

III. The Data

This analysis covers 48 countries in sub-Saharan Africa. As measures of institutional quality, I use the ‘Governance Matters IV’ data set constructed by Kaufmann et al (2005). This data set is based on the compilation of different governance measures from a variety of sources, organized in six clusters regarding the process by which authorities are selected and replaced (‘voice and accountability’ and ‘political instability and violence’), the capacity of the state to implement sound policies (‘Government Effectiveness’ and ‘Regulatory Burden’) and citizens’ and states’ respect for rules governing their interactions (‘rule of law’ and ‘control of corruption’). The six governance indicators are measured in units ranging from about -2.5 to 2.5, with higher values corresponding to better governance outcomes.³

‘Rule of law’ measures the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions. Specifically it measures the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. Rule of law has been used in the literature as a proxy for the strength of property right institutions. Its definition also indicates that this measure reflects the government’s administrative capacity in enforcing the law, as well as the potential for rent seeking associated with weak legal systems. I believe that rule of law captures the very essence of institutions in the sense that it includes the concepts of property rights and enforcements. Therefore, even if the basic model is estimated alternatively using the six dimensions of institutional quality, I focus on rule of law for further investigations of the model.

In terms of independent variables, I will account for colonial heritage by including identity of former colonizer variable from CIA world fact book (2005). Previously, it was the legal origin variable, which is used to analyze effects of colonialism on contemporary institutions, but it turns out that only British and French legal origins are found for the region. Instead, I will use the identity of the former colonizer variable in order to have more variation in this aspect.

³ Definition of the six institutional variables, by Kaufmann et al. (2005), can be found in the appendix of this paper.

Englebert's (2000) state legitimacy variables are used to test for the role of the variables in explaining the variation in institutional quality of the region. State legitimacy has two dimensions: vertical and horizontal legitimacy. According to Englebert, vertical legitimacy measures the existence of an agreement over the principles upon which the 'right to rule' is based while horizontal legitimacy measures the extent to which there is agreement about what community the state rules over.

Countries receive one in the vertical legitimacy dummy if: they were never colonized, there was no human settlement prior to colonization and if it is believed (by Englebert and other africanists) that the new state did not do severe violence to the pre-colonial arrangement in case there was some political authority or structure before colonization. The percentage of country's population which belongs to an ethnic group split between at least two countries is used to calculate horizontal legitimacy. This proportion is subtracted from one to get the horizontal legitimacy variable. It measures the arbitrariness of the state of the underlying society.

Because states strong enough to protect citizens' property right are also strong enough to confiscate it, political institutions that limit political discretion in a self-enforcing way are expected to enhance countries' institutional quality. Two indicators of political constraints: checks and balances, and press freedom, averaged over the period 1994-2000 are used.

The index of checks and balances used in this paper is developed by Henisz (2002). It measures the number of independent branches of government with veto power over policy change and estimates the feasibility of policy changes (the extent to which a change in the preferences of any one actor may lead to a change in government policy).

Index of press freedom, taken as a measure of civil society participation and monitoring pressure on the public sector, is drawn from Freedom House. It is an aggregate of three components: laws and regulations, political pressures and controls, and economic influences over media content. The index is constructed in such a way that higher values indicate lower press freedom in a given country.

To take geography into consideration, absolute value of latitude from CIA (2005) and political geography measuring ease of broadcasting power (Herbst, 2000) are used in this analysis. The latter is an ordinal variable with values of 1 to 4 as the quality of the design increases. I merged countries with difficult political geography and those with hinterlands together to form a dummy variable which takes one if countries have either qualities of political geography and zero otherwise. Another dummy has also been created for countries with favourable geography taking one and zero otherwise. Neutral political geography is taken as a base category.

The impact of foreign aid dependence (aid intensity) will be studied by using Official Development Assistance (ODA) as a percentage of GNP available for the period 1980-2003 in World Development Indicators (2005). The variable is averaged by country over the period.

Ethnic fractionalization index will be used to measure social heterogeneity in a country, to account for its possible effects on institutional quality. The ethnic fractionalisation data is from Alesina et al (2003) for the period 1979-2001.

Table 1 presents the descriptive statistics of the variables used in this analysis. Countries' ranking of institutional quality is presented in figure 1. as can be seen from the figure, countries like Mauritius, Botswana, South Africa, Cape Verde and Namibia are among the top scorers of institutional quality as measured by rule of law while Liberia, Congo Democratic and Somalia are the least performers. Correlations between the independent variables, presented in table 2, deliver interesting findings. As expected, larger countries are more likely to be ethnically fractionalized and less likely to have a political geography favourable for broadcasting of political power as can be seen from the significant pair wise correlation coefficients of these variables. Size is also negatively related with aid as a share of GNP and the two state legitimacy variables.

I included absolute value of latitude because it is often argued that countries farther from the equator have less difficulty related to disease environment and adverse climatic conditions which has enabled them to develop their economies and possibly their institutions as well. Countries which are closer to equator are ethnically fractionalized and have poor press freedom. Belgium colonies cluster around equator unlike British colonies.

French colonies are negatively related to both vertical and horizontal legitimacy of the states in the countries under study. That is, French colonization is associated with interruption of pre-colonial institutions and with split of ethnic groups by arbitrary colonial borders of the respective colonies. On the other hand, British and Belgian colonisations are positively related with horizontal and vertical legitimacy respectively. However, Belgian colonies generally are closer to equator, and with poor political institutions as measured by checks and balance, and press freedom variables. Portuguese colonies tend to be more dependent on aid as can be seen from its significant positive correlation with the aid dependency variable.

The two state legitimacy variables are positively related to each other. Large and ethnically fractionalized countries perform poor in both dimensions of state legitimacy. Countries with relatively higher ease of broadcasting power tend to have a better state legitimacy. While difficult political geography is negatively associated with horizontal legitimacy, those with favourable political geography tend to have vertically legitimate states.

The two political institution variables i.e. checks and balances, and press freedom are highly correlated to each other. This could be due to the fact that political constraint from the public puts pressure on governments to have more checks and balance between their different branches or vice versa.

IV. Empirical Analysis

4.1 The Model

The model of the analysis will be:

$$INST = \beta_1 + \beta_2 COLONIAL + \beta_3 LEGCY + \beta_4 POLITIC + \beta_7 HETRO + \beta_8 AID + \beta_5 CONTROL + \varepsilon$$

Where INST is an index of institutional quality; COLONIAL denotes colonial heritage indicators i.e. identity of the last colonizer containing four country dummies of Belgium, Britain, France and Portugal; LEGCY is for vertical and horizontal state legitimacy; POLITIC stands for political institutions variables: checks and balances, and press freedom; HETRO for Social heterogeneity as measured by ethnic fractionalisation; AID stands for Aid dependency. And finally, CONTROL is for a set of control variables: absolute value of latitude and country size as measured by logarithm of total area of countries.

It is generally believed that colonialism introduced bad institutions which were made to be suitable for extraction of resources from the region rather than introducing property right institutions except in areas European themselves settled. So, the colonial variables are expected to have a negative sign in the regressions that follow.

Institutions are best recognised by the public and best perform the more they are embedded in the societies they serve. The newer colonial institutions were for the societies in the region, the less likely they are accepted and be part of society and the longer time they will take to be part of the social norm and to constrain/encourage economic agents' behaviour. So, following the state legitimacy hypothesis, I expect the two legitimacy variables to have positive effects on the quality of institutions.

Constraints on political elites are believed to discourage rulers from pursuing the worst policies as it may imply subsequent intervention by some other institutions. In general, when there are effective constraints on elites, it becomes less attractive to fight to take control of power and to have extractive institutions. Therefore, the two political constraint variables: press freedom and checks and balances are expected to enhance institutional quality.

The association between ethnic fractionalization and institutional quality can be positive or negative. Countries with low ethnic fractionalization may be able to build strong institutions. On the other hand, it may be the case that countries with strong institutions can counter ethnic tensions and maintain ethnically heterogeneous populations. Thus, I expect this variable to have either sign and let the regression analysis be the judge.

Aid dependency is expected to impair institutional quality as it supplies alternative source of revenue that governments would have needed from their own citizens. Had it been the latter case, governments would have to improve inefficient policies and institutions to legitimately collect taxes.

Latitude and country size are the control variables of this analysis. In the country size literature, rule of law is taken as local public good whose effects are less felt the further away from the centre. So it is expected that large countries face the difficulty of governing their citizens who are likely to be scattered in large range of area. Size is also associated with cost of institutional change as it is difficult for large countries to change institutions which they think are no more efficient.

4.2 Results

4.2.1 Regressions for Rule of Law

Foreign Aid Dependence

As can be seen from equation two of table 3, the aid coefficient is negative and significant. A ten percentage point increase in aid as a share of GNP reduces the rule of law index by 0.15 point. Aid explains a significant part of the variation in the dependent variable: omitting aid from equation two reduces adjusted R^2 from 0.41 to 0.36. The partial regression plot for aid dependence is depicted in figure 2.

If aid is highly variable over time within a country, it cannot be relied on as a stable source of funds. This reduced reliance could diminish the harmful impact of aid on the quality of governance. In specification 3, I included coefficient of variation of aid together with mean aid over the period 1980-03. However, controlling for mean levels of aid, coefficient of variation doesn't have a significant relationship with the dependent variable while the level of aid dependency still remains to have a significant negative sign.

I also included an interaction term of aid dependency and the coefficient of variation in regression 4. The interaction term is positive and significant indicating that aid variability lessens the harmful effect of aid levels on institutional quality i.e. strength of rule of law in this case. In this specification, aid variability significantly counterbalances the negative effect of aid dependency by reducing the expectation of aid. The level of aid dependency continues to have a significant negative coefficient at 1% level.

Political Constraints

Check and balance between different branches of governments is highly significant in explaining variations in rule of law across countries. The regression results (and its partial regression plot in figure 4) show that political constraints contribute to building institutions of better quality. Although it is difficult to establish causality due to problem of endogeneity, I tried to reduce this problem by taking the variable dated earlier (average of the period 1994-00) than the year the dependent variable is taken (2004). The same applies to the other political institution variable: press freedom.

I tested for the effects of press freedom on institutional quality in regression 5. Since the two political institution variables are highly correlated (-0.65), I include them one at a time. As a result, poor performance of press freedom has a significant negative association with the institutional outcome at 1% level. Since this variable also indicates citizens' freedom of expression of thoughts, inability of them to exercise such a right might contribute to lawlessness and thus, hinders the overall success of countries in developing a strong rule of law institutions. It could also be the case that those countries performing well in maintaining rule of law have better press freedom.

Colonial Powers

Although dummies for identity of coloniser mostly have a negative sign, they do not have significant relationship with many of the dependent variables of institutional quality in the region. They also alternate signs in different specifications as can be seen in table 3. Thus, these results do not accommodate the argument that colonial institutions persist and explain the performance of current *rule of law* institutional outcome.

State Legitimacy

In table 4, Vertical and horizontal legitimacy are introduced one at a time due to the high correlation between them (0.68). Vertical legitimacy has a significant positive effect on institutional quality at 10% level. Controlling for colonialism, countries whose pre-existing institutions were discontinued by colonialism perform lower in attaining stronger rule of law. Thus, the congruence of pre-colonial institutions with what colonialism had introduced matters for the current quality of rule of law institutions.

In the second specification, I included horizontal legitimacy whose effect is positive but slightly insignificant at a p-value of 10.5%. Controlling for the effects of ethnic fractionalization and colonialism, the extent to which there is agreement about what community the state rules over (the fact that ethnic groups are/are not split by arbitrary colonial borders) does not explain variation in rule of law scores significantly.

Ethnic Fractionalization

Ethnic fractionalization doesn't have a significant relationship with rule of law. The variable mostly has a positive sign, though insignificant, in the regressions for rule of law. According to this result, ethnically diverse societies do not score significantly different strength of rule of law. It tells some optimism that ethnically diverse societies are not at least destined to have poor institutional quality.

Size and Other Control Variables

As can be seen in Figure 5, there is a strong negative relationship between country size and the rule of law. The larger the country, the more likely it has remote and inaccessible areas. This is especially true in the presence of poor infrastructure in developing countries. Thus, it would become increasingly difficult to administer economic agents and to make formal rules form the basis for economic and social interactions. Informal constraints may work in place of formal ones in this case but they are not accounted for in this analysis.

However, when introducing a geographic variable, i.e. political geography, the size variable loses its significance even though it still has a negative sign. Controlling for ease of broadcasting power, larger countries do not have significantly lower rule of law score than others. However, the political geography variables themselves do not significantly explain the variation in rule of law in the region. Due to significant decline in adjusted R^2 and theoretically inconsistent signs of some of the dummies for political geography, this regression result is not presented in this paper.

Figure 6 shows that countries farther from the equator have significantly higher quality of institutions than those closer to it. This result is retained in all the regressions for all the six dimensions of institutional quality. Due to the difficulty related to disease environment and adverse climatic conditions in the tropics, countries closer to equator tend to perform poor in building better quality institutions and development in general.

4.2.2 Alternative Regressions

Alternative specifications are presented in table 5 using the six different dimensions of institutional quality. Large countries have significantly lower level of rule of law, control of corruption, voice and accountability, and political stability. On the other hand, countries farther to the equator score significantly higher level of institutional quality in all the six dimensions.

Aid dependency persistently has a negative effect in many specifications presented thus far. Countries highly dependent on aid significantly perform lower in rule of law, government effectiveness and control of corruption. Aid dependency is argued to work against government's accountability to their own citizens in the literature. However, it does not significantly explain variation in voice and accountability even though it still has the expected sign.

The identity of last colonizer variable generally do not explain variations in institutional quality significantly except Belgian colonies are positively related with voice and accountability at 10% level. The Belgian colonies dummy in political stability regression has also a very high p value (10.1%) though it loses its significance.

Political constraints in the form of checks and balances between different branches of government persistently remain a significant explanatory variable in explaining the variations in institutional quality in the region. Countries with strong checks and balance significantly have a better quality of institutions in all the six dimensions of institutional quality at 1% level. One of the arguments in favour of checks and balance was that, it makes control of power less profitable for elites by making rent seeking hard for them. Thus, it discourages those that are not in power to forcefully retain it and hence contributes to political stability. The above result is consistent with this argument as the variable significantly contributes to political stability at 1% level.

The ethnic fractionalization variable alternates signs between different specifications. However, ethnic diversity doesn't seem to explain the variations in institutional quality in the region. This is consistent with Englebert's argument that the regions success stories, in terms of institutional quality, are not different from the others when it comes to ethnic diversity.

4.2.3 Outlier Analysis and Robust Regression

In this section, a regression diagnostics in search of potential outliers and influential cases will be made. I will be looking for observations that may be substantially different from all other observations and those that can possibly make a large difference in the results of the above regression analysis. As can be seen from the residual versus fitted plot in figure 7 and also from the various partial regression plots, Botswana and Gabon may be considered to have unusual dependent variable value given their values on the predictor variables⁴.

On the other hand, observations with extreme values on predictor variables i.e. points with high leverage, may also have an effect on the estimates of the regression coefficients. With the conventional cut off point for evaluating leverage points, Burundi, Congo democratic, Mozambique and Somalia are considered as observations with high leverage⁵

But the question is, are these unusual observations influential in the sense that removing them from the analysis substantially changes the estimate of the coefficients of the OLS regressions. Using Cook's distance as a summary indicator of influence, Botswana, Comoros, Liberia and Somalia are found to be influential cases⁶.

Robust regression analysis is used to deal with these outlying and influential cases. As can be seen from table 6 the robust regression kept all the outlying and influential observations, giving them less weight instead of deleting them. Country size, distance from the equator, checks and balances, and aid dependence variables retained their significance and expected signs, though not the magnitude of the regression coefficients. However, the interaction term between dependence and variability of aid loses its significance in this analysis. Thus, this result does not support the hypothesis that the variation of aid counter balances the negative effect of heavy aid dependence on governance as found in the above OLS regression.

⁴ Both countries have $|studentized\ residual| > 2$ having the two largest residuals in the sample. they may be considered moderately unusual though not problematic.

⁵ Leverage is a measure of how far an independent variable deviates from its mean. And the conventional cut off point for evaluating leverage points as high is $(2 * no. of\ predictors + 2) / the\ sample\ size$

⁶ Cook's distance measures the influence of a given observation on all fitted values of observations in the sample. The conventional cut off point for Cook's distance to consider observations as influential is $4 / number\ of\ observations$

V. Case Study of Institutions in Ethiopia

5.1 Governance Profile of Ethiopia

In what follows, institutional profile of Ethiopia will be presented together with historical, cultural and political contexts of the country's institutional development which is believed to complement the cross-country analysis. Due to the highly political nature of the issue in the literature, I tried to present those which are based on evidence/ data rather than those that are mere opinions of authors as much as possible. As a result, this section heavily depends on the household survey and expert panel study for the national country report (2003) on governance in Ethiopia conducted by United Nations Economic commission for Africa (ECA) for the year 2002 and the doing business survey of the world bank (2006) the data covering for the year 2005.

1. Human rights, the rule of law and enforcement

The right of due process of law, enclosed in Ethiopian constitution to protect citizens against arbitrariness, uncertainty and inequality, has come to signify a guarantee of fairness in law enforcement embodying many specific rights, which an individual should enjoy when government action threatens to deprive liberty or property rights (Getachew, 2004).

However, according to the report of the justice sector reform program of Ethiopia, quoted in Getachew, the machinery of justice is not efficient. The civil justice system is too costly, complex and unpredictable. According to the same report some of the impacts of the inefficiency are: court congestion and delays, obstacles in the promotion and protection of human and democratic rights, inefficient system of enforcement and obstacles in the smooth operation of the market and hence economic development of the country. The expert panel survey mentioned above disclosed also the same fact as the majority of the panel members believed that citizens have low confidence in the ability of law enforcement organs to protect them from crime

Furthermore, according to ECA (2004), the official public watchdog organizations which are established to exercise effective oversight over the government, ensure the protection of civil rights and the rule of law are not independent of the executive. This coupled with the relative

weakness of the legislature in terms of access to information and lack of experience has resulted in limited control by these watchdog organizations.

2. Transaction cost and ease of doing business in Ethiopia

World Bank's ranking of countries on ease of doing business point to the administrative and regulatory reforms needed to create a favourable environment for doing business. Aggregating the regulatory burdens involved in performing standardized tasks such as starting a business, registering property, getting credit, hiring and firing workers, enforcing contracts, protecting investors, and closing a business, Ethiopia is ranked 101st out of the 155 countries included in the study in the year 2005. This is too low when we compare it with that of Botswana (40th) which is often considered as success story in institutional quality in sub-Saharan Africa.

When entrepreneurs start a business, the first obstacles they face are the administrative and legal procedures required to register the new firm. In Ethiopia, entrepreneurs can expect to go through 7 steps to launch a business over 32 days on average, at a cost equal to 65.1% of gross national income (GNI) per capita. They must deposit at least 1532.0% of GNI per capita in a bank to obtain a business registration number. This minimum capital requirement is burdensome as compared to the sub-Saharan standard (297.2 %) let alone to that of Botswana (0%).

Securing rights to property strengthens incentives to invest and facilitates trade. More complex procedures to register property are associated with less perceived security of property rights, more informality, and more corruption. In Ethiopia, it takes 15 steps and 56 days to register property costing 10.4% of the overall property value. In this dimension, the country is ranked 140th out of 155 countries covered by the doing business survey in 2005.

It has also been argued in the report that what companies must disclose to the public has a large impact on legal protection for investors. The disclosure index is based on several measures of ownership disclosure that reduce expropriation and help investors. In 0 to 10 scale of aggregate investors' protection index, where higher values indicate greater disclosure, greater liability of directors, greater powers of shareholders to challenge the transaction, and better investor protection, Ethiopia scores 2.7 as compared to 4.3 and 5.0 in Botswana and sub-Saharan Africa's average respectively.

Without good contract enforcement, trade and credit will be restricted to a small community of people who have developed relationships through repeated dealings or through the security of assets. Thus, contract enforcement is critical to enable businesses to engage with new borrowers or customers. The efficiency of contract enforcement is reflected in two indicators: the number of judicial procedures to resolve a dispute and the time required to enforce a commercial contract. It takes 30 steps and 420 days to enforce commercial contracts in Ethiopia costing 14.8% of the debt.

3. Peace and Stability

Ethiopia is also not performing well in capacity of building peace and avoiding destabilizing political crises. According to Center for International Development and Conflict Management (CIDCM, 2001), Ethiopia is one of the bottom ten countries in capacity of building peace in sub-Saharan countries. Country's peace-building capacity is rated high insofar as it has avoided recent armed conflicts, successfully managed movements for self-determination, maintained stable democratic institutions, has substantial material resources, and is free of serious threats from its external environment / neighbourhoods.

4. The quality of public service delivery

The overall perception, from the household survey results of the national country report on governance in Ethiopia, is that the quality of and access to public services is poor. The majority of the surveyed population does not have access to a reliable clean water supply (69%), electricity (74%) or a safe waste disposal (83%) though primary education and government clinics are reported to be easy to reach for most of the public ECA (2004).

5.2 What seems to explain the situation of Ethiopian institutions?

As can be referred from the outlier analysis in the previous chapter, Ethiopia is, by any measure, not an outlier from the pool of countries in the sample. Figure 8 shows that, Ethiopia is one of the countries that are found within the 95% confidence interval of the mean prediction line. Furthermore, the linear prediction plot with confidence interval for individual forecasts (figure 9) discloses that all countries except Botswana have an actual value of the dependent variable i.e. rule of law, within the 95% confidence interval estimate of their own predicted values. Thus, it is reasonable to argue that the above regression model has enough predictive power in explaining the quality of institutions in Ethiopia. In what follows, I try to present qualitative data which complements the quantitative analysis in the context of Ethiopia.

1. The Constitution and checks and balances

The Constitution of the Federal Democratic Republic of Ethiopia (FDRE) formally contains provisions for ensuring checks and balances between the three branches of government. The Constitution has further provided for a system of checks and balances between the federal and regional governments by dividing power between the two tiers of government. However, the system of checks and balances is not viewed, by the Panel of Experts, as effective in practice. Over 80% of the experts questioned indicated that the Legislature is largely ineffective in holding the Executive accountable. The same proportion of the Expert Panel also believed that the Judiciary was dependent on other branches of government at least to some degree (ECA, 2004).

Regarding the independence of the Executive, nearly two thirds of the panel thought that many policy areas were being influenced to varying degrees by external actors often due to the country's dependence on foreign aid. The decentralized local governments are also part of the executive structure. Despite the considerable amount of powers and responsibilities assigned to regional government structures by the Constitution, they tend to be highly dependent on federal financial transfers to fulfil their duties, which in turn restrict their autonomy from the central government (ibid).

2. Non-state Actors and Governance

Akalu (2005) argues that Ethiopia had historically been a centralized state ruled by autocratic governments with little space to entertain the views of independently organized groups. Therefore, the role of the Ethiopian civil society has been limited to filling gaps in the successive governments' service delivery arena than being proactively engaged in improving governance processes.

The period since 1991 has seen the dramatic growth of organizations in many parts of the non-governmental sphere. Despite the mushrooming of civil society bodies in business, development, advocacy, and social sectors, few if any have developed into blocs sufficiently powerful or energetic to lobby and influence the state. Associational life in most Ethiopian societies is limited to kinship and focused on immediate social welfare of its members. And most of them are results of disaster relief efforts and supply driven by international donors. Dialogue with the government on matters of policy has been of less importance to most than consolidation of their own capacity and activities. Thus, civil society has contributed less to the processes of building good governance (Vaughan, 2004 and Akalu, 2005).

The media in Ethiopia is controlled by the state, and the private press is subject to tight surveillance by the government. The lines of press freedom are not clearly drawn in practice, a situation which many claim gives the government room to persecute its critics, occasionally imprisoning editors, and regularly tying up the resources of critical publications with lengthy court prosecutions (Vaughan, 2004).

3. Conflict and Ethnicity

According to Alemayehu (2004), there are three types of conflicts underlying the lack of durable peace and stability in the country. These are: competition for position of power, popular revolt against those in power and conflict among people over resources such as water and grazing land.

Inspired by Gebre-Hiwot's (one of the development thinkers of early 20th century Ethiopia) analysis of the class-based nature of the Ethiopian conflicts, Alemayehu argues that most of the conflicts that have rendered the country unstable were motivated by competition for power. According to him, conflict among people has been rare and where it occurred, it happened in competition over resources and driven by economic rather than political or ethnic interests.

He further argues that despite the diverse ethnic and religious groups, Ethiopians are considered as a culturally homogeneous people due to the continuous interaction through intermarriages, trade, migration, war and other social activities for thousands of years thus creating unity in diversity. Though recognizing the presence of conflicts of other sorts, both authors argue that ethnic conflicts and politicization of ethnicity have power interest in the background making class based conflicts the major contributors of instability in the country. Insignificance of ethnic fractionalization, in the cross country analysis, in explaining institutional quality in itself can be seen in light of this country specific explanation.

Modalities used to resolve conflict themselves contribute to another round/sort of conflict in the country. Alemayehu puts this phenomenon as follows:

' ... one observes certain pattern of conflict trajectory – a pattern that the modality employed to resolve one conflict saw the seed for another round of conflict. The dawn fall of the imperial regime can best be explained by the misery that system caused on the majority of the rural population, who were basically in the state of serfdom. This is resolved by the abolishing of the system, through popular uprising-cum-military coup. The response to the grievance can be read from the first and important proclamation of the Dergue – nationalization of land and its distribution to the peasants. This, with its concomitant - and suitable - ideology of 'socialism' is the modality used to resolve the first round of the conflict (ie. pre 1974). In the second round of the conflict (1974-1990) the failure of promises that were supposed to come form socialism started to frustrate the population in general and the 'educated elite in particular'. The exclusion of the majority of the elite from power by the military junta (the Dergue) has aggravated the problem. Since that period's elite was virtually left leaning, the ideological weapon used for the ensuing conflict had been either some refinement to the idea of socialism, or other historically appealing grievance indicators – such as ethnicity. The rebels, who are successful in toppling the Dergue, have used ethnic dominance or difference (whether perceive or real) as an ideology. The second crisis period thus reaches its peak by the end of 1990s. Owing to the major ideology used by the rebels, the modality of solving the second crisis (1974-1990) and the political discourses associated with it became ethnicity. This started to inform, the economic, the political and the social arena of the Ethiopian polity since 1992.' Alemayehu (2004, 24)

In general, greed for power, the negligible opportunity cost of the elite that purses a violent mechanism to power sharing, and the path dependent nature of power transferring in the country made sustaining peace and stability difficult in Ethiopia in his analysis.

VI. Conclusions

In this analysis a number of competing hypotheses, on what contributes to sub-Saharan African countries' poor performance of institutional quality, have been tested using econometric model. Forty eight sub-Saharan African countries are studied using governance data of Kaufmann et al (2005). Based on the assumption of persistence of historical institutions, colonial institutions are argued to play major role in shaping current institutions of the countries under study. However, identity of last coloniser variable is generally insignificant and doesn't explain variation in institutional quality in the region. Rather, the congruence of colonial institutions with pre-existing political institutions and norms of political authority is significant determinant of institutional quality in the region. As expected, vertical legitimacy has a significant positive relationship with strength of rule of law. Controlling for colonialism and ethnic fractionalization, the fact that ethnic groups are split by arbitrary colonial borders does not have a significant impact on governance. Thus, the results confirm that historical factors matter for development of current institutions.

Post-independence factors also have contributions to institutional failures of countries in the region. Foreign aid dependence undermines institutional quality by making difficult for societies to have strong rule law, encouraging corruption, and alleviating pressures to reform inefficient bureaucracy and public service delivery. The OLS regression result is also consistent with the argument that the mere expectation of foreign aid is sufficient in destructing institutional quality. Variation of aid is found to counter balance the negative effect of aid dependence on strength of rule of law. However, this counter balancing effect of aid variability disappears when robust regression analysis is used.

In line with the social conflicts view, countries with strong checks and balances between their executive and legislative branches of governments significantly have better quality of institutions in all the six dimensions. It is also shown that freedom of media is strongly associated with better quality of institutions, as measured by rule of law.

Ethnic fractionalisation, which has often been pointed at as the major factor contributing for weak institutions, does not significantly explain variations in institutional quality of all dimensions. This is not surprising considering that most of the countries in the sample are ethnically fractionalised with average and standard deviation of 0.66 and 0.23 respectively. This result is optimistic in the sense that ethnically diverse countries are not at least destined to have worse institutional quality. This result has been complemented by the country specific study in which rather, politicization of ethnicity, and the underlying competition for power, may contribute to nations' instability and lack of durable peace.

Large countries and countries closer to equator are disadvantaged in their success of institutional building. Large countries have significantly lower level of rule of law, control of corruption, voice and accountability, and political stability. On the other hand, countries closer to the equator, score significantly lower level of institutional quality of all the six dimensions.

In general, historical factors as well as policies of post independent rulers explain current performance of institutional quality in the region. Both exogenous and policy variables are responsible for the general institutional failure of sub-Saharan African countries.

References

1. Acemoglu D., Johnson S. and Robinson J. (2004). "Institutions as Fundamental Cause of Long run Growth," forthcoming Handbook of Economic Growth edited by Philippe Aghion and Steve Durlauf.
2. Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., and R. Wacziarg.(2003). "Fractionalization", Journal of Economic Growth. 8(2), 155-194.
3. Congdon F. Heather and Olsson, O. (2005). "Endogenous Institutional Changes After Independence," Göteborg University, Working Paper in Economics No.163
4. CIA (2005).The World Factbook 2005. <<http://www.cia.gov/cia/publications/factbook/index.html>
5. CIDCM. (2001). "Peace and Conflict" Center For International Development and Conflict Management. University of Maryland, College Park.
6. Easterly, William and Ross Levine (1997). "Africa's Growth Tragedy: Policies and Ethnic Divisions." *The Quarterly Journal of Economics*, vol 112, No.4, pp 1203-1250
7. ECA. (2004). "Governance Profile of Ethiopia." Economic Commission for Africa, Addis Ababa, Ethiopia.
8. Englebert, Pierre. (2000). "Pre-Colonial Institutions, Post-Colonial States and Economic Development in Tropical Africa," *Political Research Quarterly*, vol 53, No.1, pp 7-36
9. Geda, Alemayehu. (2004). "Does conflict explains Ethiopia's Backwardness? Yes and Significantly." Addis Ababa University, Ethiopia.
10. Greif, Avner. (1994). "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies." *Journal of Political Economy*.vol 102 no.5. University of Chicago
11. Henisz, W. J. (2002). "The Institutional Environment for Infrastructure Investment." *Industrial and Corporate Change* **11**(2): Forthcoming.
12. Herbst, Jeffrey I. (2000). *States and Power in Africa*. Princeton: Princeton University Press.
13. Islam, Roumeen and Montenegro, Claudio E. (2002). What Determines the Quality of Institutions? World Bank Policy Research Working Paper No.2764

14. Kitaw, Getachew. (2004) "Judicial Reform for Harnessing Economic Growth and Development." Ethiopian Bar Association,
15. Knack, Stephen and Philip Keefer. 1997. "Does Social Capital Have an Economic Payoff? A Cross-country Investigation." *Quarterly Journal of Economics*, 112:4, pp. 1251-88.
16. Knack, Stephane. (2000). "Aid Dependence and the Quality of Governance," World Bank. Policy Research Working paper series No.2396
17. Kaufmann, D., A. Kraay, and M. Mastruzzi (2005) .Governance Matters IV: Governance Indicators for 1996-2004. World Bank Policy Research Working Paper 3630.
18. La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1999. "The Quality of Government." Oxford University press. *Journal of Law and Economics*
19. Moss T, Pettersson. G, and Van de Walle, N. (2006)."A Review of Essay on Aid Dependency and State Building in Sub-Saharan Africa, " Center for Global Development. Working paper series No. 74
20. Paulos, Akalu.(2005). "The Ethiopian Civil Society Phenomenon: The Prospects for Democratic Governance." Unpublished material.
21. Robinson, A. James. (2002). "States and Power in Africa by Jeffrey Herbst: A Review Essay" *Journal of Economic Literature*, Vol. XL, pp. 510–519
22. Straub, Stephane. (2000). Empirical Determinants of Good Institutions, Do we know anything?. InterAmerican Development Bank, Research Department, Working Paper No 423.
23. Svensson, Jakob (1999). "Foreign Aid and Rent-Seeking " *Journal of International Economics* 51 (2000): pp 437–461
24. Teshome Mulat. (1991). "The Nature and Causes of the Deepening African Economic Crisis," Eastern Africa Social Science Review 7 No.2: pp. 26-47
25. Vaughan, Sarah. (2004). "Ethiopia: A Situation Analysis and Trend Assessment" WRITENET Independent Analysis. United Kingdom.
26. World Bank. (2005). World Development Indicators Washington D.C
27. World Bank. (2006). "Doing Business in 2006" Washington D.C

Table1. Descriptive Statistics of the Variables

<u>The Six Institutional Variables</u>					
Variable	Obs	Mean	Std. Dev.	Min	Max
Voice & Accountability	48	-0.5669	0.7924	-1.96	.94
Political Stability	48	-0.5856	0.9097	-2.39	.91
Gov't Effectiveness	48	-0.7421	0.6474	-2.32	.83
Regulatory Quality	48	-0.6496	0.7209	-2.63	.96
Rule of Law	48	-0.7698	0.6451	-2.31	.84
Control of Corruption	48	-0.6463	0.5744	-1.65	.92

<u>The Independent Variables</u>					
Variable	Obs	Mean	Std. Dev.	Min	Max
Log Area	48	11.9575	2.1312	6.12	14.7341
Latitude	48	11.6615	7.5688	0	29.3
Aid	48	15.7529	13.8565	0.34	72.63
Aid CV	48	0.5125	0.3038	0.18	2.08
France	48	0.3542	0.4833	0	1
British	48	0.3750	0.4893	0	1
Belgium	48	0.0625	0.2446	0	1
Portugal	48	0.1042	0.3087	0	1
Vertical	47	0.2128	0.4137	0	1
Horizontal	46	0.5724	0.3208	0	1
Checks& Balance	47	0.1702	0.1740	0	0.55
Press Freedom	48	57.6996	17.6366	23.86	86.43
Ethnic	47	0.6583	0.2300	0	0.93
Difficult & Hinter	40	0.3500	0.4831	0	1
Favorable	40	0.4750	0.5057	0	1
Landlock	48	0.3125	0.4684	0	1

Table 2. Pair Wise Correlation Coefficients of The Independent Variables

	Log Area	Latitude	Aid	France	British	Belgium	Portugal	Vertical	Horizontal	Checks& Balance	Press Freedom	Ethnic	Difficult& Hinter	Favor-able
Log Area	1.000													
Latitude	0.1116	1.000												
Aid	-0.3251**	-0.181	1.000											
France	0.1604	-0.05	-0.183	1.000										
British	-0.0380	0.242*	-0.185	-0.574***	1.000									
Belgium	-0.0323	-0.341**	0.006	-0.191	-0.200	1.000								
Portugal	-0.2086	0.010	0.539***	-0.253*	-0.26*	-0.088	1.000							
Vertical	-0.5597***	0.114	0.092	-0.391***	0.125	0.290**	0.158	1.000						
Horizontal	-0.3536**	0.100	-0.065	-0.450***	0.251*	0.173	0.226	0.68***	1.000					
Checks & Balance	0.1444	0.188	-0.102	0.171	-0.034	-0.258*	0.177	-0.161	-0.083	1.000				
Press Freedom	0.2270	-0.38***	0.019	-0.083	-0.049	0.343**	-0.163	-0.163	-0.174	-0.65***	1.000			
Ethnic	0.6267***	-0.295**	0.003	0.220	-0.133	-0.186	0.026	-0.66***	-0.262*	0.155	0.134	1.000		
Difficult & Hinter	0.6820***	0.201	0.069	0.011	-0.135	-0.010	0.189	-0.171	-0.333**	0.072	0.040	0.189	1.000	
Favorable	-0.7041***	-0.012	0.043	0.037	-0.116	0.109	-0.081	0.318**	0.226	-0.224	0.005	-0.38**	-0.698***	1.000

Note: *** denotes significant at 1% level, ** significant at 5% level and * significant at 10% level

Table 3. Regressions for Rule of Law

Dependent Variable: Rule of Law in 2004					
	(1)	(2)	(3)	(4)	
(5)					
LogArea	-0.1341** (0.0517)	-0.1500*** (0.0516)	-0.1494*** (0.0524)	-0.1469*** (0.0531)	-0.0525 (0.0401)
Latitude	0.039*** (0.0116)	0.0386*** (0.0108)	0.0378*** (0.0114)	0.0388*** (0.0116)	0.0168* (0.0089)
French Colonialism	-0.1546 (0.2575)	-0.2148 (0.2555)	-0.2259 (0.2691)	-0.1606 (0.2797)	-0.1458 (0.2046)
British Colonialism	-0.0302 (0.2625)	-0.0920 (0.2576)	-0.0906 (0.2627)	-0.0212 (0.2631)	0.0219 (0.2033)
Belgian Colonialism	-0.0492 (0.2728)	-0.0725 (0.2834)	-0.0236 (0.3634)	-0.0462 (0.3143)	0.1420 (0.2191)
Portuguese colonialism	-0.3920 (0.328)	-0.2088 (0.3633)	-0.1889 (0.374)	-0.1703 (0.3562)	-0.2533 (0.2459)
Checks and Balance	1.5700*** (0.4922)	1.4426*** (0.4632)	1.4351*** (0.472)	1.3855*** (0.4853)	-
Press Freedom ^a	-	-	-	-	-0.0276*** (0.0037)
Ethnic Fractionalization	0.3008 (0.6258)	0.4020 (0.6044)	0.4074 (0.6192)	0.4762 (0.6350)	0.1497 (0.5277)
Aid (mean) ^b	-	-0.0149* (0.0083)	-0.0159* (0.0091)	-0.0304*** (0.0098)	-
Aid (CV) ^c	-	-	-0.0842 (0.2876)	-0.4933 (0.3941)	-
Aid mean*Aid CV	-	-	-	0.0415* (0.0209)	-
Constant	0.0191 (0.5345)	0.4184 (0.5389)	0.4730 (0.5987)	0.4931 (0.5929)	1.2238** (0.4908)
Adj R ²	0.3621	0.4087	0.3932	0.4024	0.6621
N	47	47	47	47	47

OLS estimation with White's Heteroscedasticity corrected standard errors in parenthesis.

*** denotes significant at 1% level, ** significant at 5% level and * significant at 10% level

Notes:

- Press freedom variable is constructed in a way that the higher the number, the less free a country is in this dimension
- Aid denotes aid as a proportion of GNP. 1980- 2003 Period average is taken.
- Aid CV denotes coefficient of variation of Aid /GNP over the time period 1980-03.

Table 4. Regressions with State Legitimacy

Dependent Variable: Rule of Law in 2004		
	(1)	(2)
LogArea	-0.1049* (0.0520)	-0.1058* (0.0563)
Latitude	0.0337** (0.0132)	0.0310** (0.0143)
French Colonialism	-0.0332 (0.3633)	-0.0639 (0.3447)
British Colonialism	0.0012 (0.3568)	-0.0882 (0.3342)
Belgian Colonialism	-0.2554 (0.3504)	-0.2666 (0.3324)
Portuguese Colonialism	-0.3538 (0.3916)	-0.4312 (0.3903)
Checks and Balance	1.5644*** (0.4906)	1.5126*** (0.5101)
Ethnic Fractionalization	0.6467 (0.5325)	0.1469 (0.6188)
Vertical Legitimacy	0.5660* (0.2932)	-
Horizontal Legitimacy	-	0.5243 (0.3146)
Constant	-0.6567 (0.6788)	-0.4126 (0.6529)
Adj R ²	0.4071	0.3535
N	46	45

OLS estimation with White's Heteroscedasticity corrected standard errors in parenthesis.
 *** denotes significant at 1% level, ** significant at 5% level and * significant at 10% level

Table 5. Regressions for Alternative Measures of Institutional Quality

	(1)	(2)	(3)	(4)	(5)	(6)
	ROL	GE	RQ	COC	VAA	PS
LogArea	-0.1500*** (0.0516)	-0.0693 (0.0536)	-0.0857 (0.0694)	-0.1282** (0.0567)	-0.1413*** (0.0474)	-0.1828** (0.0768)
Latitude	0.0386*** (0.0108)	0.0407*** (0.0122)	0.0373** (0.0152)	0.0330** (0.0136)	0.0406*** (0.0112)	0.0447*** (0.0134)
French Colonialism	-0.2148 (0.2555)	-0.0572 (0.2612)	0.0524 (0.3261)	-0.1534 (0.2039)	0.1198 (0.2713)	-0.1158 (0.3948)
British Colonialism	-0.0920 (0.2576)	0.0933 (0.2401)	0.0616 (0.3627)	-0.0271 (0.1988)	0.2802 (0.2717)	-0.1958 (0.3996)
Belgian Colonialism	-0.0725 (0.2834)	0.3587 (0.3146)	0.1936 (0.4842)	0.1722 (0.3455)	0.4174* (0.2188)	-0.7771 (0.4622)
Portuguese colonialism	-0.2088 (0.3633)	0.0628 (0.3567)	0.0407 (0.4997)	-0.0359 (0.3077)	0.2466 (0.4166)	-0.1029 (0.3993)
Checks and Balance	1.4426*** (0.4632)	1.1646** (0.5097)	1.4110*** (0.5174)	0.8904** (0.4283)	2.5811*** (0.5274)	1.2748** (0.5561)
Ethnic Fractionalization	0.4020 (0.6044)	0.1955 (0.6151)	0.4041 (0.7294)	0.4237 (0.6005)	0.6264 (0.4652)	-0.4744 (0.8060)
Aid (mean) ^a	-0.0149* (0.0083)	-0.0203** (0.0088)	-0.0134 (0.0137)	-0.0142* (0.0073)	-0.0103 (0.0065)	-0.0015 (0.0134)
Constant	0.4184 (0.5345)	-0.4606 (0.5939)	-0.4332 (0.7552)	0.3420 (0.8104)	-0.2689 (0.4430)	1.3527 (0.8876)
Adj R ²	0.4087	0.3444	0.1735	0.2391	0.5026	0.4190
N	47	47	47	47	47	47

OLS estimation with White's Heteroscedasticity corrected standard errors in parenthesis.

*** denotes significant at 1% level, ** significant at 5% level and * significant at 10% level

Notes: Dependent Variables for the above table are:

1. ROL = Rule of Law in 2004
2. GE = Government Effectiveness in 2004
3. RQ = Regulatory Quality in 2004
4. COC = Control of Corruption in 2004
5. VAA = Voice and Accountability in 2004
6. PS = Political Stability in 2004

Table 6. Robust Regression Analysis

Dependent Variable: Rule of Law in 2004		
	OLS	Robust
LogArea	-0.1469*** (0.0531)	-0.1675*** (0.0562)
Latitude	0.0388*** (0.0116)	0.0394*** (0.0142)
French Colonialism	-0.1606 (0.2797)	-0.2290 (0.2916)
British Colonialism	-0.0212 (0.2631)	-0.1044 (0.2847)
Belgian Colonialism	-0.0462 (0.3143)	-0.0279 (0.4762)
Portuguese colonialism	-0.1703 (0.3562)	-0.2507 (0.4009)
Checks and Balance	1.3855*** (0.4853)	1.3637*** (0.5028)
Ethnic Fractionalization	0.4762 (0.6350)	0.6809 (0.5460)
Aid (mean)	-0.0304*** (0.0098)	-0.0331** (0.0153)
Aid (CV)	-0.4933 (0.3941)	-0.6580 (0.5090)
Aid mean*Aid CV	0.0415* (0.0209)	0.0495 (0.0353)
Constant	0.4931 (0.5929)	0.7260 (0.6372)
N	47	47

The OLS estimation is with White's Heteroscedasticity corrected standard errors in parenthesis.

*** denotes significant at 1% level, ** significant at 5% level and * significant at 10% level

Figure 1. Countrys' Institutional Quality Ranking

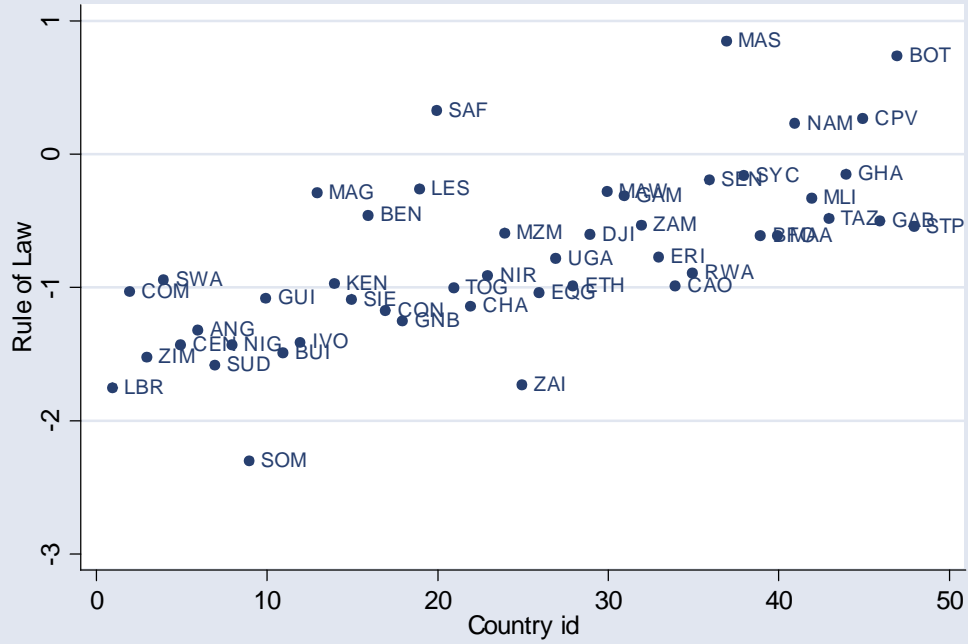


Figure 2. Partial Regression Plot of Aid Dependence

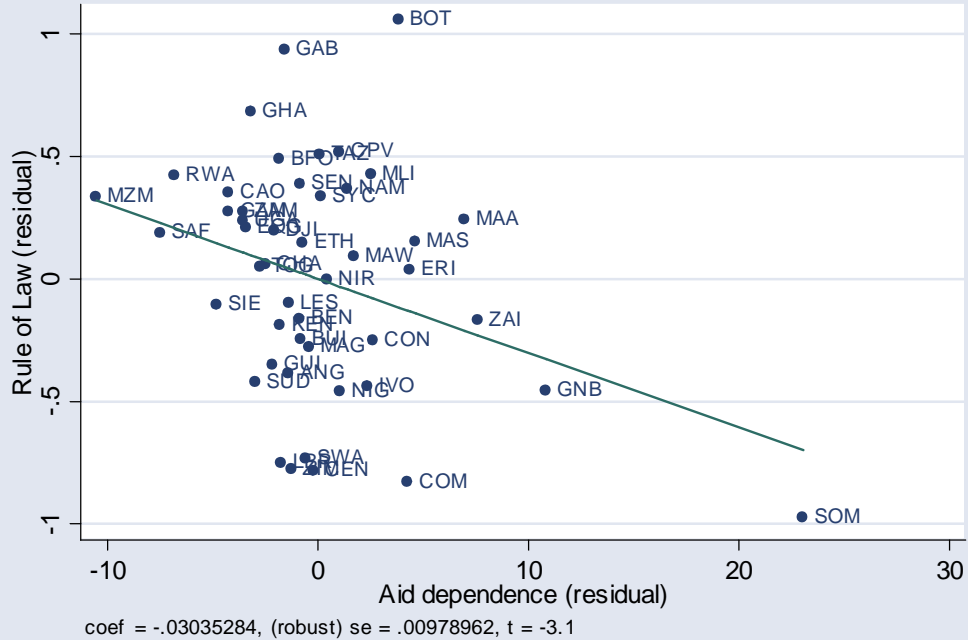


Figure 3. Partial Regression Plot of Aid Dependenc * Aid Variation

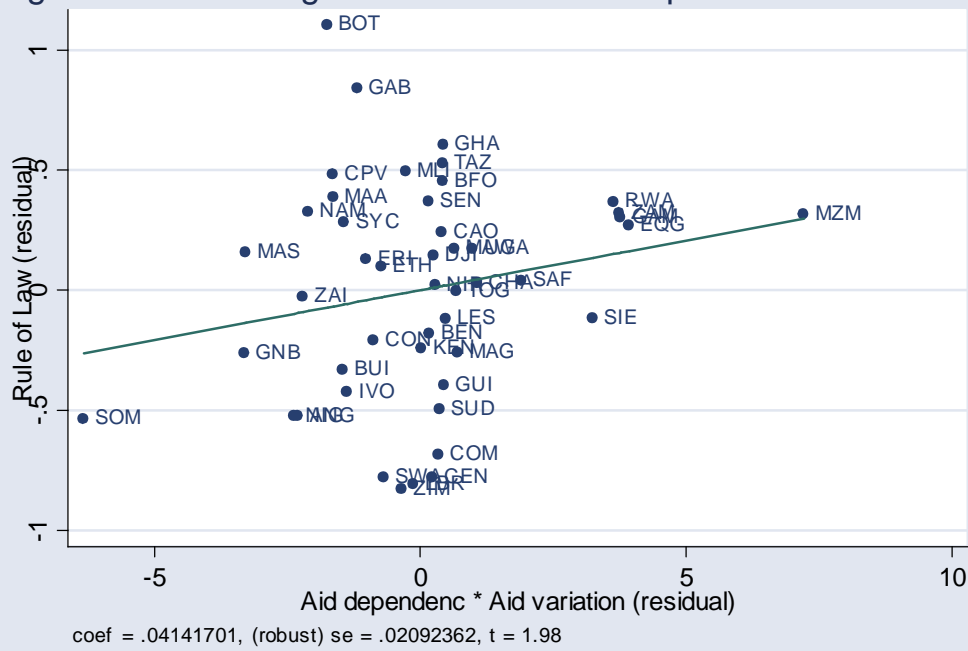


Figure 4. Partial Regression Plot of Checks and Balances

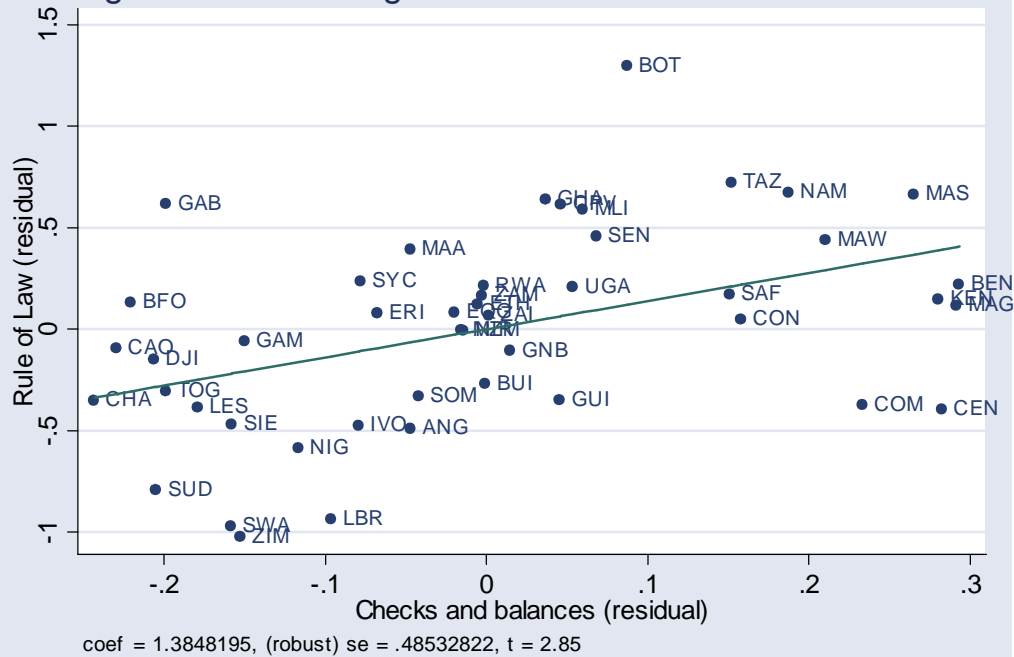


Figure 5. Partial Regression Plot of Country Size

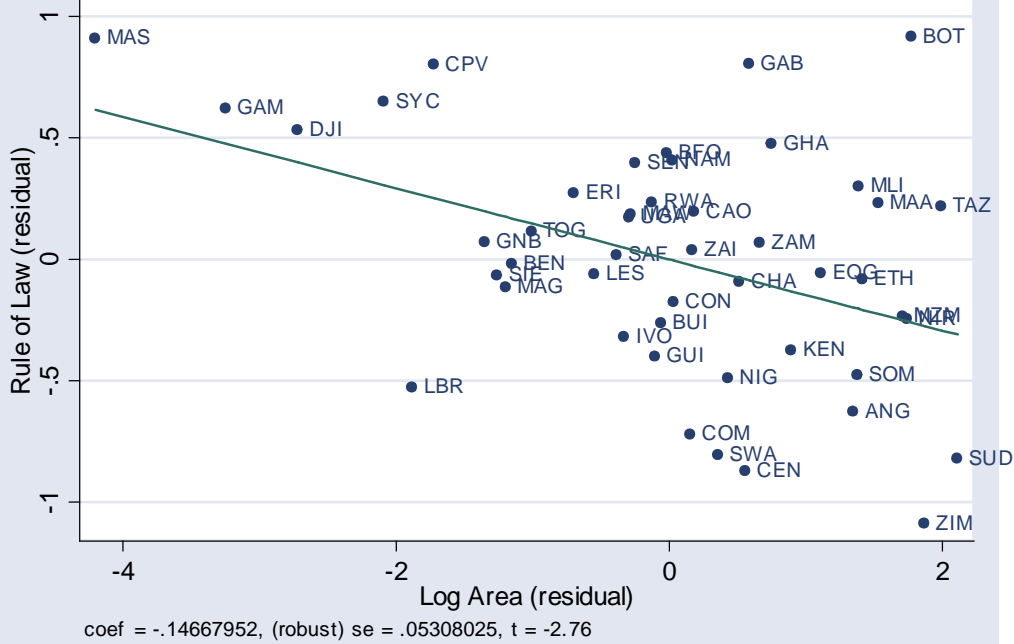


Figure 6. Partial Regression Plot of Distance from the Equator

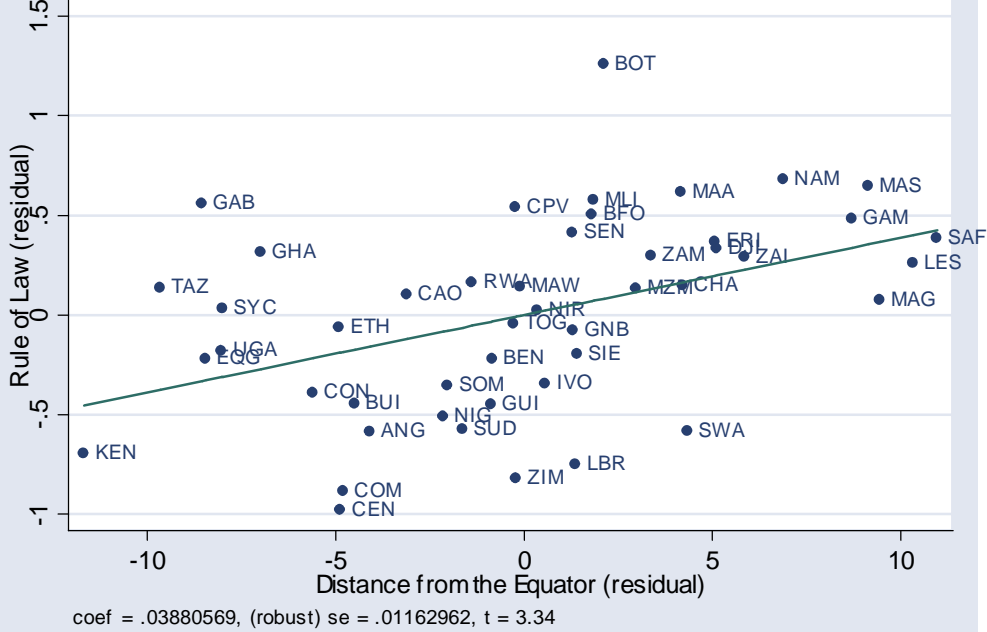


Figure 7. Residual versus Fitted Plot (OLS)

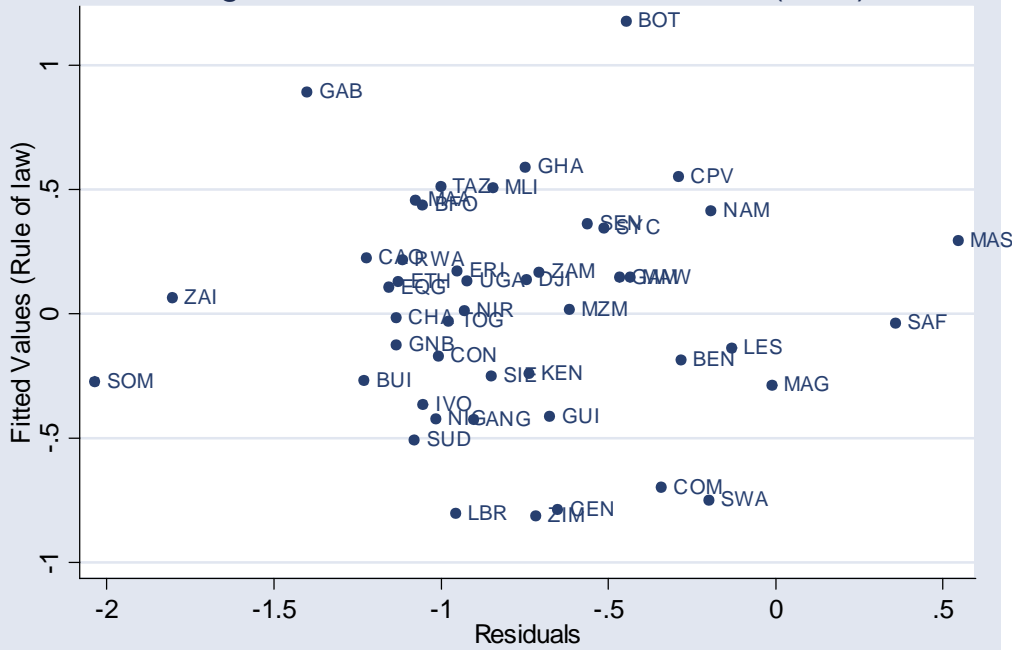


Figure 8. Linear prediction plot with CI of the mean prediction

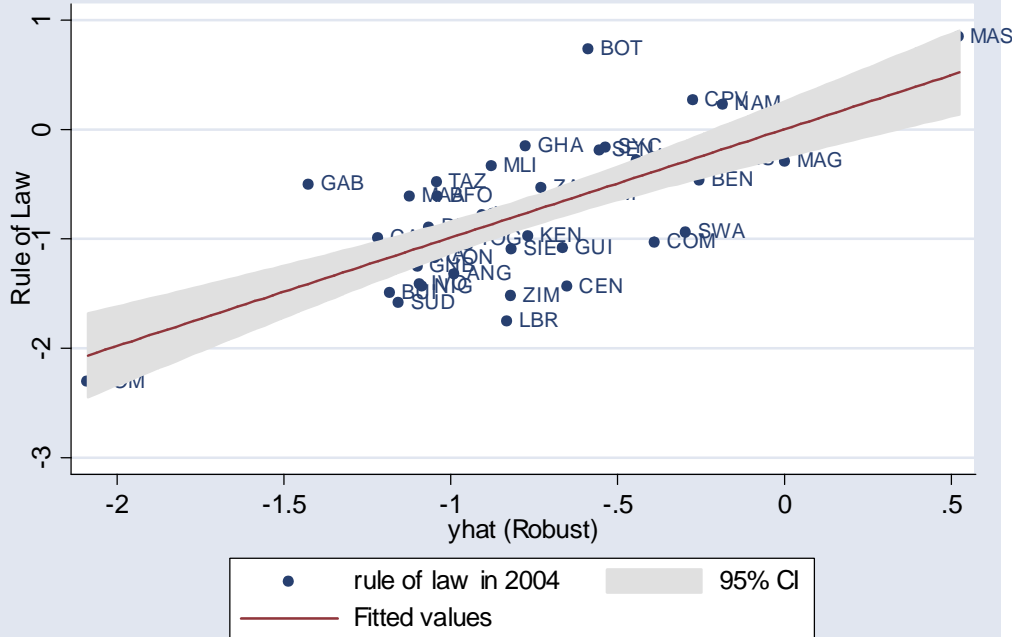
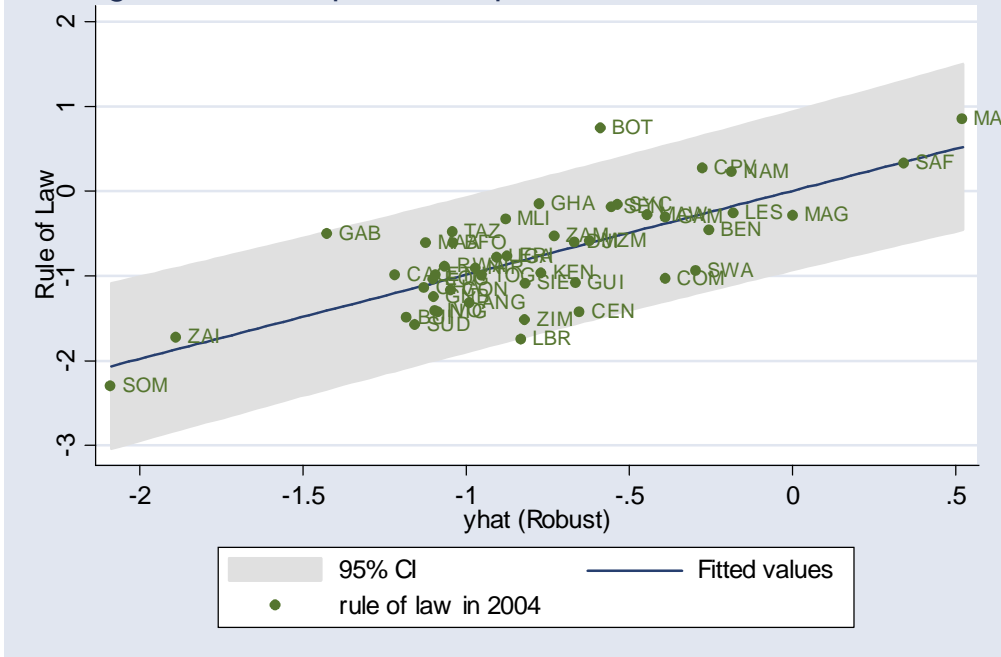


Figure 9. Linear prediction plot with CI for individual forecasts



Definition of the Six Institutional Variables

1. *Voice and Accountability* – measuring political, civil and human rights
2. *Political Instability and Violence* – measuring the likelihood of violent threats to, or changes in, government, including terrorism
3. *Government Effectiveness* – measuring the competence of the bureaucracy and the quality of public service delivery
4. *Regulatory Burden* – measuring the incidence of market-unfriendly policies
5. *Rule of Law* – measuring the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence
6. *Control of Corruption* – measuring the exercise of public power for private gain, including both petty and grand corruption and state capture