Media and Economic Development – Sub Saharan Africa

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1. Introduction

The growing literature on economic development, and more that on new institutional economics, has increasingly realized media sector of a country to be of critical importance in its development process. While factors like human capital, investments, social and other demographic factors are necessary components of any recipe for development, the role played by the media sector has gained huge importance over time. An ideal efficient media sector, public or private, informs the populace without bias. It acts as an anchor in many facets of a society and caters to its best interests – upholding the party in rule or exposing its vices, bringing out the positives and negatives of the industry, making people's voices audible to the decision makers and most importantly, divulging and spreading economic and other information. As Islam (2002) points out, the three most critical attributes of an efficient media sector are independence, quality and reach. These benchmarks[1] ensure that information is reported without the fear of government and other interest groups, views are expressed from a wide variety of perspectives and media has the capacity to generate political, social and economic information to all segments of the society. By reducing information asymmetry in the society, a free media addresses the principal-agent problem and instates a process of checks and balances by raising accountability of forces in power.

As African countries strive for sustainable development, press freedom and the broader issue of democratization of communication has become primary concerns to all who express

[1] Independence implies that a media outlet has the ability to report information without the fear of getting penalized and that it is not under the control of any interest group. Islam stresses that second benchmark, quality, is hard to judge. Islam defines such characteristic as follows – quality media is one which objectively reports basic economic, social and political information can publish a diversity of opinions for which it can be held accountable and can scrutinize information in terms of its real values to the society. Finally, reach implies the extent of access the populace has to the print, electronic or broadcast media.

interest in creating such a society. Sustainable development here refers to the empowerment of people to seek not only their own self-improvement but also the improvement of future generations. From this standpoint, communication is related to sustainable development via participation of majority of the people in information acquisition and distribution and making informed economic, political and social decisions using the same. Freedom of the press helps reduce information asymmetry and create a transparent society. Adequate access to information furthers this goal by ensuring that the unbiased information flows freely and reaches the populace at large. Together, these two elements of a vibrant media sector further the goal of successful democratization and strengthen the path of sustainable development.

In the past two decades, the Sub-Saharan African (SSA henceforth) region has seen conflicting growth and developmental outcomes. According to IMF statistics, the region has shown a steady rate of growth in the past two decades. However, in terms of simultaneous development in institutional qualities, the region has not shown much promise. The conflicting development story in the region can be attributed to a large number of social, political, cultural and demographic factors. Of these, political stability is often cited as a key determinant of the development discourse of the region (Armah and Amoah, 2010). As mentioned earlier and acknowledged by adequate academic literature (discussed later), a robust media sector is considered to be a determinant of political stability in a country. To consider greater independence of the media sector along with a greater access to information as pertinent determinants of political stability in particular, and good governance in general, is intuitive. An unbiased media sector holds the key to ensure greater accountability and exchange between the ones in power and the populace and lessen corruption. However, for the media sector to perform its role effectively there needs to be other factors in place – especially greater reach of

the media outputs and a sufficiently literate populace to understand and interpret the media propagations meaningfully.

In this paper we build on the above intuition and investigate the explanatory power of independence of the press and access to information for an important aspect of development - political risk factors. The importance of the paper lies in the fact that it adds to the very scarce group of literature that looks at the role of an efficient media sector in development, specifically in the SSA region. Secondly, this paper considers the effect of press freedom and access to information together on political risk factors. The premise of considering independence and access to information together is to acknowledge that both these aspects are equally important for a well developed media sector.

In what follows, section 2 elaborates on the literature that emphasizes the importance of media development for economic development and a different strand of literature that explains the importance of political risk factors in shaping the discourse of development, section 3 explains the data used for the analysis and section 4 details the empirical specifications and results. Section 5 enlists the robustness checks and section 6 concludes.

2. Literature Review

An extensive literature has talked about how media can make the government transparent about its actions and accountable to the masses[2]. Sen (1984, 1999) emphasized media's role in overcoming critical public choice problem like prevention of famines. Stiglitz (2002) pointed out the significance of the media in mitigating principal-agent problems and also in improving

[2] There is a much less extensive literature looking at the impact of other factors on the presence of a free press. However, Dutta and Roy (2009) establish that higher foreign direct investment inflows to a nation contribute to a free press.

government accountability and transparency. The main idea of all these studies is that populace does not have perfect information about government's actions and, therefore, media can make such information available to masses and give them the power to analyze the government's actions. Norris and Zinnbauer (2002) confirm the same in their report and emphasize that an independent press is strongly associated with good governance and human development. In particular, free press nations are characterized by less corruption, greater administrative efficiency, politically stable environment, efficient rule of law and better economic development in general. Bandopadhyay (2009) finds that mass media and information-communication penetration is associated with lower levels of corruption and poverty. Dutta, Pal and Roy (2011) find that a free and independent media acts as a means of enhancing socio-political stability which in turn leads to higher economic growth via increased domestic investment. Freille, Haque and Kneller (2007) find evidence that both political and economic influences on the media are robustly related to corruption, while detrimental laws and regulations influencing the media are not. Guseva et. al (2008) emphasize the role of a free press as an instrument for development. Kaufmann (2006) has repeatedly recognized the key role of media as a part of the good governance, anticorruption and poverty alleviation endeavors of international organizations, especially the World Bank. He also emphasizes the need to popularize other measures of media development in mainstream academic literature to expand and improve analysis. Norris (2010) emphasizes the need to recognize media as an integral part of the core institutional framework that empowers a democracy. In this context she also points towards the necessity of undertaking a holistic approach towards media development instead of the present piecemeal short-term efforts.

Based on a study on India, Besley and Burgess (2001) show that in regions where government is accountable and newspaper circulation is high, calamity relief expenditure and public food distribution is efficient. Jensen and Oster (2009) use data from rural households in four Indian states and explore the effect of the introduction of cable television on women's status in rural India. They find introduction of cable television to be associated with greater awareness about social status amongst women and with a decrease in fertility. Their study shows how mass media affects informal institutions and paves the way for economic development. Other literature has also stressed the role of media as a watchdog on the incumbents (government and state players) thus, enabling vulnerable citizens to monitor the power of the same (Besley and Burgess (2001)). Besley, Burgess and Prat (2002) identify the mechanisms through which mass media can enhance government accountability. Other studies in political science have also emphasized the role of the media as the primary source of information to the electorate (Brians and Wattenberg (1996); Mondak (1995)).

There are other studies which are not supportive of state ownership[3] of the media sector. Economies with intense government ownership of the media have been shown to suffer from poverty, high infant mortality rates, less access to sanitation, higher corruption and less developed capital markets (Djankov, Mcliesh, Nenova and Shleifer, 2003). Coyne and Leeson (2005) emphasized that, for a state controlled media, politicians get an additional edge in manipulating information reaching the public and serving their private interests at the expense of the society. Further, Leeson (2008) finds that in countries where government has direct or indirect control (by controlling vital infrastructural and distributional facilities) of the media

[3] Even some Pigouvian economists avoid making apparent comments about the role of the government in the media industry although they are very much pro regulation and nationalization in the case of other industries (Simons (1948), Myrdal (1953), Lewis (1955)).

sector, and restricts free flow of information in the society, citizens are more politically ignorant and apathetic.

A separate strand of literature has looked into the role political stability and political institutions play in economic growth and development of nations. Roe and Siegel (2007) confirms a strong linkage between political instability and financial backwardness. Sekkat and Veganzones-Varoudakis (2007) found that openness, sound infrastructure and robust economic and political conditions of countries make them more lucrative for FDI inflows. Similarly, Dutta and Roy (2008) find that a developed financial market of a nation works more efficiently to attract foreign funds in the presence of political stability. Busse and Hefeker (2007) show that government stability, absence of internal conflicts and ethnic tensions, democratic accountability and good law and order situation play a vital role in attracting foreign direct investment. Hess (2004) also confirms that in the role of attracting FDI political stability scores over a good political regime (i.e. democracy). A positive linkage between political stability and economic growth is confirmed by Alesina, Ozler, Roubini and Swagel (1996) and Feng (1997). Zablotsky (1996) proposes a two way relationship between political stability and economic growth. Tong (2005) shows that ethnic Chinese networks are more efficient in attracting FDI in countries with higher levels of bureaucratic quality. However, the study finds no such relation with respect to economic and legal environment.

The two strands of literature discussed above thus look into the important role a developed media sector and political risk/stability independently plays in the growth and development of countries. In this paper, we look at a developed media sector as a factor affecting political risk conditions of countries. Theoretically, a developed media sector (a media sector which is independent of capture and has adequate reach among the populace) can impact

political stability through multiple channels. First, "captured" media is likely to be manipulated by governments, and hence used to trigger political unrest that benefits ruling political parties. For instance, there have been several incidents of politically motivated riots in post-independent India in which a largely government controlled "communicating media" played a vital role. For instance, it is said that the government controlled monopoly press by and large displayed anti-Muslim prejudices and contributed a great deal to the nurturing of communal hatred (see Engineer 1991, Ch.1 for details). Secondly, free media and better media coverage improves the responsiveness of authorities by making the government more transparent and answerable to the public. This, in turn, reduces chances of social, ethnic and religious conflict. In a study on government efficiency Besley and Burgess (2001) examine data from India on the responsiveness of state governments in situations of food crisis by evaluating the public distribution system and find that states that have higher numbers of newspaper circulation, electoral turnout and literacy also have more efficient state governments in terms of mitigating the food crisis. In Besley et al. (2002) the authors suggest that the media helps to overcome the principal-agent problem that typically characterizes the relationship between citizens and their governments. There is usually a considerable amount of asymmetry in the information that the principals (citizens) and agents (the elected officials) possess. According to Besley et al., newspapers, by closing the information gap between the authorities and the masses incentivize the government to act in the interest of the people. Contrarily, in the absence of a free media and hence adequate information, governments tend to shirk. "Non-captured" media sorts efficient political agents and disciplines the incumbent and the incumbents stay in power because they act in the interest of citizens. Better media coverage has been shown in a study

with microdata to decrease corruption connected to the distribution of educational funds in Uganda (Reinikka and Svensson, 2005).

For the media to matter, it must also be possible to disseminate information easily. Thus, the impact of a free press should be greater, the better the informational infrastructure is. If the informational infrastructure is bad, the dissemination of information will be slower. The lack of informational infrastructure has been identified as a major problem regarding anticorruption efforts in Africa (TI, 2007) Therefore, it is reasonable to believe that there is an interaction effect between the informational infrastructure and the freedom of the press. The information-gap argument is also used in Djankov et al. (2002). They show that press freedom decreases corruption and civil rights. Strömberg (2004) examines the effect of radios on public spending and finds that an increase in the number of radio listeners in US counties accounts for obtaining greater relief funds for which they were eligible. A third way that a free media may reduce socio-political instability is that an unregulated media will have greater ability to disseminate news internationally. This dissemination may create external pressure on governments to act less in their own interests and more in the interests of their citizens. For example, there was little international outcry in the early 1970s when several Sub-Saharan African countries did not do much to alleviate famines, and Sen (2000, Ch.7) attributes the lack of international outcry to the lack of media freedom in these countries.

3. Exploring the Data

Data for this study has been taken from various sources. The sample consists of 46 SSA countries as identified by the World Bank classification and covers the years 1994-2009. The choice of years is entirely dependent on the availability of data used for analysis.

Press Freedom has been proxied by the Freedom House Freedom of Press Index. The index runs from 0 to 100. Countries are categorized as having a "Not Free", "Partly Free" or "Free" press. Freedom House originally defined the scores such that 0 is the best score (Free press) and 100 is the worst (Not Free press). For ease of explanation, the scores have been rescaled for this research and now 0 is the worst score (Not Free press) and 100 is the best score (Free press). The choice of this proxy follows the extensive literature and adequately acknowledged reliability of the data. Also, this index has the most comprehensive country and time coverage which also contribute to its usage in empirical research.

Access to information has been proxied by various indicators. These are collected from the World Development Indicator database (2010) published by the World Bank. Proxies of nclude measures of radio sets (per 1000 people), public payphones (per 1000 people), personal computers (per 1000 people), mobile phone subscribers (per 1000 people), household with a radio (%), fixed internet subscribers (per 100 people), international internet bandwidth (bits per second per person), internet users (per 100 people) and telephone lines (per 100 people).

Our dependent variable of interest namely governance and political stability has been proxied by indicators of the International Country Risk Guide (ICRG) database. The variables taken into account are bureaucratic quality, democratic accountability, government stability, corruption, law and order and socio-economic condition. Each of these variables has a particular range of values assigned to it and higher values signify better condition.

Various economic and demographic indicators are included in our specifications as control variables. This includes proportion of GDP per capita, population density, trade openness, electricity consumption per capita, road density, ethnolinguistic fractionalization, adult

literacy rate, percentage of population who were Catholics, Protestants and Muslims, latitude, land area and a dummy for landlocked countries.

4. Empirical Specifications and Results

As mentioned earlier, this paper investigates the relation between an efficient media sector and political stability factors. An efficient media sector is proxied by the interplay of the extent of press freedom and access to information in a country. The primary hypothesis of the paper is that a free press together with greater access to information brings about more political stability. The main benchmark specification therefore is:

$$Y_{it} = \alpha + \beta_1 Press\ Freedom_{it-i} + \beta_2 Access\ to\ Information_{it-i} + \beta_3 (Press\ Freedom * Access)_{it-i} + \beta_4 X_{it} + \varepsilon_t \quad (1)$$

where Y_{it} is our dependent variable of interest namely a proxy for political stability/risk of country "i" in year "t" and X_{it} is the matrix of control variables. We consider lagged (by one year) values of press freedom and access to information variables to begin with. Though taking lagged value of the explanatory variables does not allow us to claim causal connection definitively, it definitely is a step towards the same. Since we are considering the interactive effect of press freedom and access to information, we are interested in the total effect of either press freedom or the access variable (proxied by equations 2 and 3 respectively) on our dependent variable of interest.

$$\frac{\delta Political\ Risk_{it}}{\delta PF_{it-1}} = \beta_1 + \beta_3 Access\ to\ info_{it-1} \quad (2)$$

$$\frac{\delta Political\ Risk_{it}}{\delta Access\ to\ info_{it-1}} = \beta_2 + \beta_3 PF_{it-1} \quad (3)$$

We begin the analysis by considering *Ordinary Least Square (OLS)* regression to ascertain the causal relation between our independent variables and the dependent variables of interest. We further undertake a *quantile regression* analysis to separate out the effects based on the level of political stability within our sample of countries. This allows us to sort the data based on the distribution of the response or the dependent variable. Precisely, as (Koenker and Hallock, 1991) explains, quantile regression aims to estimate conditional quantile functions which are models in "which quantiles of the conditional distribution of the response variable are expressed as functions of observed covariates". This approach has been extensively used by (Koenker and Hallock, 1991) while they investigate the impact of various covariates on the birth weight of infants. As explained by them, in our analysis too, the relevance of quantile regression can be explained as follows: while a simple ordinary least square model can explain the impact of media development on political risk factors, it fails to answer the question whether media development affects countries with low levels of political risk differently than the ones with average level of political risk. They also state in their paper that while quantile regression focuses on the conditional distribution of the dependent variable, it can also avoid the selection bias associated with truncated regressions.

In a linear regression, the regression coefficient of an explanatory variable implies how much the dependent variable changes for a unit change in the particular explanator. In quantile regression, parameter estimates the change in a specified quantile of the regressand due to a one unit change in the predictor variable. Thus for our paper, this will help us capture how press freedom and access to information can affect various quantiles of political risk differently. Thus the coefficients of a linear regression model compared to a quantile regression model can be severely underestimated. Both asymptotic and bootstrapping methods generate standard

errors and confidence intervals of coefficient estimates of quantile regressions. Hao and Naiman (2007) establish that the bootstrapping method is more preferred and hence we use the same. In the following paragraphs we explain how the interplay of press freedom and access to information affect each proxy of political stability.

Corruption

Table (1a) reports the robust OLS regression results when the political risk proxy is *Corruption*. As explained before, by construction, higher values of this variable is better and so we expect a positive relation between the media sector proxies and corruption. This would be interpreted as, higher levels of media development (either as higher press freedom or greater access to information) has a positive impact on corruption (i.e. decreases corruption).

The table has four columns, each column representing a proxy for access to information. The last two rows of the table provide the threshold values for the access to information proxy and press freedom respectively, for which a unit change in the other variable dampens corruption. Column (1) of Table (1a) reports the result for how access to radio (proxied by % of households with radio) and press freedom affect corruption. The results show that a unit change in press freedom always dampen corruption (since higher values of both variables are better), irrespective of the households' access to radio. And, irrespective of the level of press freedom, a unit change in households' access to radio always raises corruption. Column (2) reports the results when fixed internet subscribers per 100 people is taken as a proxy for access to information. Here, irrespective of the number of fixed internet subscribers per 100 people, an unit change in press freedom is always corruption dampening. A unit change in the number of fixed internet subscribers per 100 people has a corruption dampening effect

only after press freedom level has reached a value of 54.5 and higher. In column (3) the proxy for access to information is telecom investment as a share of revenue. Like earlier, a unit change in press freedom always reduce corruption irrespective of the level of telecom investment. However, the score for press freedom needs to be more than 50 for a unit increase in telecom investment to have corruption reducing effect. Column (4) reports the results when mobile cellular subscription per 100 people is taken as the representative of access to information. The results show that a unit increase in press freedom reduces corruption when at least 20 mobile subscribers per 100 people. A unit rise in mobile subscribers reduces corruption when the level of press freedom is greater than 40. The above results suggest that rise in press freedom inevitably reduces corruption, even at low levels of access to information. However, for access to information to have a corruption reducing effect, the press needs to be at least partly free (the only exception in this case being the access to radio, which apparently would always raise corruption).

Using the same specification as equation (1), we re-run our results using the quantile regression analysis. As explained before, the process is more nuanced and helps us delineate the impact an efficient media sector has on political risk factors based on what the condition of political stability is. Table (2a) reports the results. It has eight columns with each pair of columns reporting the results for the lowest and highest quantile for each proxy of access to information. The results show that for the lower quantile (i.e q0.25 = 25% of the population lies below this qunatile), an unit increase in press freedom reduces corruption across board, even for low values of access to information. A unit increase in access to information however reduces corruption when the press freedom scores are high (at the higher end of the partly free score range or is completely free). For the highest quantile (i.e. q0.75 = 75% of the

population lies below this quantile), a unit change in press freedom is always effective in reducing corruption. But, for these countries, with low levels of corruption, a unit change in access to information is effective in reducing corruption at lower levels of press freedom. Thus, for countries with levels of corruption, higher access to information reduces corruption conditional on high levels of press freedom. For countries with low levels of corruption, access to information helps reduce corruption further, even when press freedom is low. As expected therefore, the quantile regression analysis reveals that ensuring press freedom is a necessary and sufficient condition to reduce corruption in highly corrupt nations. It is only then increased access to information would bolster the cause further. For countries with low levels of corruption however, there is no such binding conditionality. Increased access to information or increased press freedom in those countries would further reduce corruption irrespective of each other.

Democratic Accountability

The results when the proxy variable for political risk factor is the level of *Democratic Accountability* are reported in Tables (1b) and (2b). In the OLS specification, like before a unit increase in press freedom increases democratic accountability across specifications. Unit increases in the various access to information proxies improve democratic accountability too, even at low levels of press freedom.

The quantile regression results reflect that improvement in press freedom is always democratic accountability enhancing, for countries with low levels of democratic accountability and high levels of democratic accountability alike. Improvement in access to information unanimously raises democratic accountability for countries with low levels of democratic

accountability (the lowest quantile). For the highest quantile, the results are mixed. For access to radio, internet and mobile phones per capita, improvement in access improves democratic accountability further, but conditional on certain levels of press freedom.

The results reflect that for countries with low levels of democratic accountability, improvement in both press freedom and access to information helps improve the situation. An increase in both raises democratic accountability. For countries with high levels of democratic accountability, an increase in press freedom improves democratic accountability further, always. An increase in access to information improves democratic accountability further too, but only after press freedom has reached certain thresholds (specified in the tables).

The rest of the tables are not reported yet but the results are similar and statistically significant

Table 1a: Impact of Press Freedom and Access to Information on Political Risk Factors (Corruption)

VARIABLES	(1) Household with a Radio (%)	(2) Fixed Internet Subscr per 100 people	(3) Telecom Inv as % of Rev.	(4) Mobile cellular subsc. Per 100 people
Lagged Press Freedom	0.0453	0.0150**	0.00954*	-0.0182**
	(0.0398)	(0.00546)	(0.00497)	(0.00635)
Lagged Access to Information	-0.0173	-1.095**	-0.0141***	-0.0347**
	(0.0247)	(0.500)	(0.00462)	(0.0126)
Interaction	-0.000321	0.0149**	0.000205**	0.000521**
	(0.000703)	(0.00673)	(7.40e-05)	(0.000205)
GDP per capita	0.000105	0.000116	5.52e-05	0.000132
	(0.000207)	(0.000119)	(9.86e-05)	(0.000116)
Population Density	-0.0177**	-0.00365	-0.00276	-0.00278
	(0.00737)	(0.00476)	(0.00393)	(0.00434)
Adult Literacy rate	0.0210	0.00980	0.0191**	0.00991
	(0.0131)	(0.00842)	(0.00890)	(0.00767)
Ethno-Linguistic Frac.	5.426	6.129***	7.369***	5.749***
	(3.263)	(1.536)	(1.505)	(1.475)
Road Density	-0.0392	-0.0587	-0.0739**	-0.0585*
	(0.0402)	(0.0371)	(0.0310)	(0.0333)
Trade Openness	0.00675	0.00550	0.00518	0.00481
	(0.00510)	(0.00415)	(0.00365)	(0.00383)
Landlocked Dummy	-0.714***	-0.438	-0.461	-0.403
	(0.224)	(0.261)	(0.271)	(0.240)
% Catholic (1980)	-0.0572***	-0.0354***	-0.0442***	-0.0311***
	(0.0148)	(0.0110)	(0.00940)	(0.0105)
% Muslim (1980)	-0.0233	-0.0307***	-0.0348***	-0.0286***
	(0.0148)	(0.00781)	(0.00692)	(0.00727)
% Protestant (1980)	-0.0159	-0.0238**	-0.0341***	-0.0235**
	(0.0200)	(0.00927)	(0.00923)	(0.00823)
Latitude	0.0559	0.123***	0.139***	0.119***
	(0.0645)	(0.0292)	(0.0278)	(0.0285)
Ln (Land Area)	-0.777***	-0.385***	-0.430***	-0.336***
	(0.242)	(0.125)	(0.108)	(0.109)
Electricity Cons. (Kw p.c)	-0.000110	-0.000212	-0.000317	-0.000179
	(0.000462)	(0.000206)	(0.000190)	(0.000197)
Year Dummy	Yes	Yes	Yes	Yes
Constant	9.245***	2.695	2.570*	2.063
	(3.127)	(1.611)	(1.390)	(1.303)
Observations	107	149	149	149
R-squared	0.677	0.595	0.620	0.619
$\frac{\delta Corr_{it}}{\delta PF_{it-1}} = \beta_1 + \beta_2 Access\ to\ info_{it-1}$>0	Always	Always	Always	Access to Info > 20
$\frac{\delta Corr_{it}}{\delta Access\ to\ info_{it-1}} = \beta_1 + \beta_2 PF_{it-1}$>0	Never	PF > 54.5	PF > 50	PF > 40

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 1b: Impact of Press Freedom and Access to Information on Political Risk Factors (Democratic Accountability)

VARIABLES	(1) Household with a Radio (%)	(2) Fixed Internet Subscr per 100 people	(3) Telecom Inv as % of Rev.	(4) Mobile cellular subsc. Per 100 people
Lagged Press Freedom	0.0421	0.0312***	0.0380***	0.0368***
	(0.0292)	(0.00583)	(0.00703)	(0.00491)
Lagged Access to Information	0.0114	-0.332	-0.0141***	-0.0217***
	(0.0243)	(0.219)	(0.00356)	(0.00676)
Interaction	-0.0001	0.00680**	0.000283***	0.000653***
	(0.000523)	(0.00301)	(6.94e-05)	(0.000155)
GDP per capita	3.20e-05	4.94e-05	1.40e-05	4.60e-05
	(0.000282)	(0.000122)	(0.000121)	(0.000122)
Population Density	0.00124	-0.00224	-0.00319	-0.00315
	(0.00445)	(0.00452)	(0.00419)	(0.00410)
Adult Literacy rate	-0.00920	-0.00625	-0.00982	-0.00380
	(0.0112)	(0.00919)	(0.00880)	(0.00874)
Ethno-Linguistic Frac.	5.954**	6.336***	5.859***	5.528***
	(2.706)	(1.276)	(1.103)	(1.105)
Road Density	-0.0678*	-0.0696**	-0.0590**	-0.0613**
	(0.0362)	(0.0289)	(0.0233)	(0.0263)
Trade Openness	0.00793	0.0102*	0.0103*	0.00982*
	(0.00609)	(0.00543)	(0.00554)	(0.00509)
Landlocked Dummy	1.059***	0.810***	0.880***	0.823***
	(0.248)	(0.277)	(0.289)	(0.263)
% Catholic (1980)	-0.00584	-0.0150	-0.00889	-0.0143
	(0.0129)	(0.0159)	(0.0152)	(0.0155)
% Muslim (1980)	-0.00130	-0.00477	-0.00135	-0.00179
	(0.0119)	(0.00978)	(0.00958)	(0.00865)
% Protestant (1980)	-0.000961	-0.00238	0.00456	-0.00372
	(0.0176)	(0.0116)	(0.0109)	(0.0106)
Latitude	0.0149	0.0186	0.00856	0.00641
	(0.0673)	(0.0341)	(0.0342)	(0.0315)
Ln (Land Area)	-0.0789	-0.351***	-0.340***	-0.289***
	(0.200)	(0.0957)	(0.0925)	(0.0925)
Electricity Cons. (Kw p.c)	8.36e-05	0.000276	0.000304	0.000277
	(0.000479)	(0.000233)	(0.000235)	(0.000220)
Year Dummy	Yes	Yes	Yes	Yes
Constant	-2.331	1.933	1.755	1.483
	(1.766)	(1.305)	(1.435)	(1.290)
Observations	107	149	149	149
R-squared	0.673	0.648	0.648	0.668
$\frac{\delta Corr_{it}}{\delta PF_{it-1}} = \beta_1 + \beta_3 Access\ to\ info_{it-1}$	Always	Always	Always	Always
$\frac{\delta Corr_{it}}{\delta Access\ to\ info_{it-1}} = \beta_2 + \beta_3 PF_{it-1}$	Always	PF > 33	PF > 33.3	PF > 20

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2a: Impact of Press Freedom and Access to Information on Political Risk Factors (Corruption) – Quantile Regression Analysis

VARIABLES	(1) Household with a Radio (%) (q25)	(1) Household with a Radio (%) (q75)	(2) Fixed Internet Subscr per 100 people (q25)	(2) Fixed Internet Subscr per 100 people (q75)	(3) Telecom Inv as % of Rev. (q25)	(3) Telecom Inv as % of Rev. (q75)	(4) Mobile cellular subsc. Per 100 people (q25)	(4) Mobile cellular subsc. Per 100 people (q75)
Lagged Press Freedom	0.0122	-0.00918*	0.0160*	0.0128***	0.00490	0.00338	0.0193***	0.0159**
	(0.0508)	(0.0453)	(0.00814)	(0.0101)	(0.00474)	(0.00309)	(0.00681)	(0.00751)
Lagged Access to Information	-0.0197***	-0.0418	1.324	0.821***	-0.0161***	-0.00448	-0.0127***	-0.0418**
	(0.0338)	(0.0405)	(4.800)	(1.676)	(0.00327)	(0.00286)	(0.0260)	(0.0198)
Interaction	0.000189***	0.000939	0.0173	0.0116***	0.000282***	0.0001	0.000355***	0.000649***
	(0.000957)	(0.000884)	(0.0713)	(0.0295)	(5.00e-05)	(4.18e-05)	(0.000352)	(0.000231)
GDP per capita	0.000279**	0.000265***	0.000321***	1.05e-05	9.13e-05	2.59e-05	0.000139***	3.48e-05
	(0.000109)	(7.07e-05)	(3.55e-05)	(2.64e-05)	(0.000103)	(7.34e-05)	(3.52e-05)	(3.15e-05)
Population Density	-0.0297***	-0.0115***	-0.00354**	-0.00376***	0.000990	-0.00222	0.00111	-0.00207*
	(0.00314)	(0.00166)	(0.00142)	(0.000977)	(0.00475)	(0.00273)	(0.00154)	(0.00115)
Adult Literacy rate	0.0193**	0.0169***	0.00448	0.0262***	0.0219***	0.0336***	0.00418	0.0248***
	(0.00830)	(0.00415)	(0.00281)	(0.00171)	(0.00734)	(0.00561)	(0.00278)	(0.00199)
Ethno-Linguistic Frac.	7.653***	4.443***	5.053***	7.758***	7.592***	9.213***	6.926***	7.082***
	(1.547)	(0.839)	(0.628)	(0.306)	(1.652)	(0.963)	(0.634)	(0.310)
Road Density	-0.0734***	-0.0608***	-0.0678***	-0.0964***	-0.0858***	-0.119***	-0.0892***	-0.0975***
	(0.0171)	(0.00879)	(0.0113)	(0.00441)	(0.0292)	(0.0134)	(0.0127)	(0.00501)
Trade Openness	0.00547*	0.00196	0.00750***	0.00567***	0.00698**	0.00586**	0.00261*	0.00369***
	(0.00281)	(0.00166)	(0.00124)	(0.000812)	(0.00318)	(0.00234)	(0.00140)	(0.00102)
Landlocked Dummy	-0.383**	-1.019***	0.0319	-1.457***	0.130	-1.494***	-0.0588	-1.393***
	(0.186)	(0.0967)	(0.0984)	(0.0479)	(0.234)	(0.137)	(0.110)	(0.0555)
% Catholic (1980)	-0.0770***	-0.0474***	-0.0239***	-0.0617***	-0.0362***	-0.0674***	-0.0186***	-0.0549***
	(0.00833)	(0.00448)	(0.00350)	(0.00207)	(0.00877)	(0.00636)	(0.00392)	(0.00243)
% Muslim (1980)	-0.0381***	-0.0359***	-0.0165***	-0.0378***	-0.0221***	-0.0412***	-0.0289***	-0.0342***
	(0.00684)	(0.00391)	(0.00226)	(0.00151)	(0.00558)	(0.00420)	(0.00236)	(0.00176)
% Protestant (1980)	-0.0376***	-0.0217***	-0.00726**	-0.0316***	-0.0213**	-0.0394***	-0.0253***	-0.0260***
	(0.0103)	(0.00602)	(0.00342)	(0.00207)	(0.00851)	(0.00652)	(0.00337)	(0.00228)
Latitude	0.0368	0.103***	0.0603***	0.181***	0.110***	0.195***	0.151***	0.178***
	(0.0313)	(0.0172)	(0.0108)	(0.00665)	(0.0290)	(0.0189)	(0.0102)	(0.00724)
Ln (Land Area)	-1.181***	-0.603***	-0.474***	-0.290***	-0.504***	-0.286***	-0.507***	-0.272***
	(0.127)	(0.0607)	(0.0331)	(0.0215)	(0.0858)	(0.0622)	(0.0361)	(0.0253)
Electricity Cons. (Kw p.c)	4.76e-05	-0.000459***	0.000199***	-0.000377***	-0.000163	-0.000427***	-0.000204***	-0.000311***
	(0.000262)	(0.000148)	(7.47e-05)	(4.77e-05)	(0.000198)	(0.000136)	(7.57e-05)	(5.71e-05)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	16.93***	8.234***	4.156***	0.949***	2.210	-0.303	2.695***	1.049**
	(1.660)	(0.635)	(0.520)	(0.325)	(1.578)	(0.943)	(0.554)	(0.404)
Observations	107	107	149	149	149	149	149	149

$\frac{\delta Corr_{it}}{\delta PF_{it-1}} = \beta_1 + \beta_2 Access\ to\ info_{it-1}$	Always	10	Always	Always	Always	Always	Always	Always
$\frac{\delta Corr_{it}}{\delta Access\ to\ info_{it-1}} = \beta_1 + \beta_2 PF_{it-1}$	100	40	Always	Always	66	40	75	40

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2b: Impact of Press Freedom and Access to Information on Political Risk Factors (Democratic Accountability) – Quantile Regression Analysis

VARIABLES	(1) Household with a Radio (%) (q25)	(1) Household with a Radio (%) (q75)	(2) Fixed Internet Subscr per 100 people (q25)	(2) Fixed Internet Subscr per 100 people (q75)	(3) Telecom Inv as % of Rev. (q25)	(3) Telecom Inv as % of Rev. (q75)	(4) Mobile cellular subsc. Per 100 people (q25)	(4) Mobile cellular subsc. Per 100 people (q75)
Lagged Press Freedom	0.0246**	0.0544**	0.0235***	0.0361***	0.0308***	0.0497***	0.0320***	0.0397***
	(0.0100)	(0.0239)	(0.00318)	(0.00510)	(0.00398)	(0.00492)	(0.00753)	(0.00290)
Lagged Access to Information	-0.00259	-0.00913	1.024***	-0.0370	0.0129***	0.0160***	0.0285***	-0.0123***
	(0.00730)	(0.0184)	(0.178)	(0.199)	(0.00294)	(0.00380)	(0.00874)	(0.00374)
Interaction	0.000113	0.000191	0.0159***	0.00205	0.000281***	0.000301***	0.000808***	0.000331***
	(0.000189)	(0.000420)	(0.00243)	(0.00274)	(4.64e-05)	(6.43e-05)	(0.000168)	(7.56e-05)
GDP per capita	0.000267***	-1.81e-05	0.000140*	-4.90e-05	7.71e-05	0.000158*	0.000182	-2.58e-05
	(6.76e-05)	(0.000157)	(7.43e-05)	(0.000103)	(8.79e-05)	(9.41e-05)	(0.000181)	(6.04e-05)
Population Density	0.0113***	-0.00488	0.000866	-0.00206	-0.00117	-9.48e-05	0.00172	-0.00166
	(0.00184)	(0.00488)	(0.00267)	(0.00354)	(0.00317)	(0.00289)	(0.00633)	(0.00260)
Adult Literacy rate	0.0158***	0.00819	0.0212***	0.00424	0.0274***	0.00393	0.0110	0.00137
	(0.00426)	(0.00983)	(0.00475)	(0.00715)	(0.00506)	(0.00587)	(0.0105)	(0.00409)
Ethno-Linguistic Frac.	8.812***	3.606*	7.514***	4.396***	6.411***	4.140***	6.841***	3.833***
	(0.952)	(1.898)	(0.934)	(1.290)	(1.077)	(1.055)	(2.125)	(0.755)
Road Density	-0.0773***	-0.0370*	-0.0566***	-0.0614***	-0.0494***	-0.0628***	-0.0440	-0.0672***
	(0.0107)	(0.0188)	(0.0141)	(0.0179)	(0.0161)	(0.0148)	(0.0300)	(0.0101)
Trade Openness	-0.000128	0.0108***	0.00377*	0.00879***	0.00611**	0.0113***	0.00215	0.00911***
	(0.00179)	(0.00403)	(0.00224)	(0.00320)	(0.00243)	(0.00250)	(0.00491)	(0.00188)
Landlocked Dummy	1.388***	0.996***	1.238***	0.643***	1.234***	0.794***	1.263***	0.800***
	(0.108)	(0.273)	(0.152)	(0.221)	(0.177)	(0.187)	(0.342)	(0.127)
% Catholic (1980)	0.00181	-0.00453	0.00870	-0.00966	0.0125**	-0.000559	0.00386	-0.00491
	(0.00488)	(0.0102)	(0.00542)	(0.00825)	(0.00586)	(0.00751)	(0.0129)	(0.00471)
% Muslim (1980)	-0.00561	0.0104	0.00171	0.00293	0.00587	0.00107	-0.00160	0.00532
	(0.00410)	(0.00920)	(0.00348)	(0.00598)	(0.00365)	(0.00543)	(0.00824)	(0.00352)
% Protestant (1980)	0.00893	0.00997	0.0131**	0.00243	0.0204***	-0.000997	0.00542	0.00357
	(0.00664)	(0.0141)	(0.00577)	(0.00855)	(0.00623)	(0.00751)	(0.0130)	(0.00493)
Latitude	0.103***	-0.0493	0.0994***	-0.0257	0.0779***	-0.0348	0.0860**	-0.0419**
	(0.0183)	(0.0432)	(0.0190)	(0.0282)	(0.0209)	(0.0244)	(0.0428)	(0.0174)
Ln (Land Area)	-0.317***	-0.0367	-0.439***	-0.259***	-0.406***	-0.239***	-0.378**	-0.249***
	(0.0668)	(0.169)	(0.0621)	(0.0901)	(0.0748)	(0.0767)	(0.153)	(0.0539)
Electricity Cons. (Kw p.c)	-0.000253*	0.000274	3.49e-05	0.000532***	0.000139	0.000668***	-0.000104	0.000512***
	(0.000145)	(0.000320)	(0.000144)	(0.000201)	(0.000160)	(0.000172)	(0.000335)	(0.000124)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.519*	-0.947	1.089	2.496	1.400	1.471	0.420	2.443**
	(0.791)	(2.341)	(0.882)	(1.540)	(1.116)	(1.178)	(2.179)	(1.039)
Observations	107	107	149	149	149	149	149	149

$\frac{\delta Corr_{it}}{\delta PF_{it-1}} = \beta_1 + \beta_2 Access\ to\ info_{it-1} > 0$	Always	Always	Always	Always	Always	Always	Always	Always
$\frac{\delta Corr_{it}}{\delta Access\ to\ info_{it-1}} = \beta_1 + \beta_2 PF_{it-1} > 0$	PF > 30	PF > 50	Always	PF > 20	Always	Always	Always	P > 33.3

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1