Media Freedom, Socio-Political Stability and Economic Growth

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This Draft, March 6th, 2011

Abstract

Using a panel of 138 countries over 1994-2005 we identify a channel through which a media free from government control promotes economic growth and development as measured by domestic investment. A free media may act as a means of enhancing socio-political stability that creates a favorable investment climate leading to higher investment. We set up a simultaneous equation model where investment and socio-political stability are jointly determined. Various indicators of socio-political stability such as ethnic tensions, external and internal conflict, government stability, law and order, military participation in government and religious tensions are used to construct an index of socio-political stability by applying the method of principal components. Media Freedom may promote socio-political stability by pursuing the government to act in the interest of the people and socio-political stability provides a favorable business climate which in turn promotes investment. Our results support the hypothesis.

JEL Classification: O11; O43; O50
Keywords: Socio-Political Stability; Media Freedom; Investment

We thank Russell Sobel, the seminar participants at the University of Connecticut and the seminar participants at the Southern Economic Association (SEA), 2010 meetings for indispensable comments and suggestions.

1. Introduction

The Global Press Freedom[1] index (1989-2007) constructed by Freedom House shows a high concentration of "unfree" media in most of North and Central Africa, Eastern Europe, the Middle East and parts of Asia.[2] Incidentally some of these countries are also the poorest in the world. In a study on media ownership and economic growth Djankov et. al (2003) show that "government ownership of media is higher in countries that are poorer...". These observations and findings reinforce the argument favoring the imperative role of information in promoting economic well-being as revealed in several other studies. Information, inter alia, improves the efficiency of economic markets by expanding the knowledge base of consumers and assists them in making the right choices in all spheres whether it be political, economic or financial. The provider of this information is largely the media sector and therefore it is important for this sector to have a greater reach, good quality and a considerable degree of freedom.

A free media is shown to promote economic development by solving principal (citizens) – agent (people) problems through the free flow of information, by improving public policy implementation, by increasing government accountability and transparency and also by increasing political consciousness of citizens (Leeson, 2008; Djankov, Mcliesh, Nenova and Shleifer, 2003; Besley, Burgess and Prat, 2002; Stiglitz, 2002; Besley and Burgess, 2000; Sen, 1999). We contribute to the literature on media freedom and economic development by identifying a specific channel, namely socio-political stability, through which a free media sector encourages economic growth and development. The share of domestic investment in gross domestic product proxies for economic development in our model. Thus, we hypothesize that a free media may promote socio-political stability which in turn improves domestic investment.

[1] Freedom implies freedom from government control

[2] Please visit http://freedomhouse.org/template.cfm?page=359 for an overview of historical trends in media freedom.

Relatively modern theories of economic development emphasize the role of social and political institutions in fostering economic development and growth. Most studies on socio-political instability and economic development show that high degrees socio-political instability hinders growth and investment to a large extent (Svensson, 1998; Alesina and Perotti, 1996; Zablotsky, 1994; Mauro, 1994; Levine and Renelt, 1992; Barro, 1991). The implication is that a relatively stable economy with a considerable degree of socio-political stability should experience higher levels of growth and investment.

A free media can be a useful tool in promoting socio-political stability. Pal (2011) examines the effect of media freedom on different socio-political instability indicators and finds that free media reduces different types of socio-political instability. Studies show that political leaders may manipulate 'captured' media to trigger civil unrest and exploit the situation to earn votes. A free media has been shown to reduce the information gap between government and citizens and enhance public policy implementation. This essentially means that the masses are aware of the policies enacted by the government and, thus, chances of misguided social tensions and turmoil are minimized. Further, as shown in existing literature, a freer media enhances political participation and also provides an inexpensive way of expressing mass grievance, both of which should work towards reducing ethnic, religious and social conflicts.

Our data consists of a panel of 138 countries observed over a period of 24 years. We adopt a simultaneous equation model (SEM), following Alesina and Perrotti (1996), in which the endogenous variables are socio-political stability and domestic investment. Specifically we attempt to answer the following question – Does media freedom promote economic development (as measured domestic investment) by improving socio-political stability?

We hypothesize that a free and independent media would increase socio-political stability and encourage investment. Our results strongly support our hypothesis. An index of socio-political stability is constructed by applying the method of principal components to various indicators of socio-political stability. Our results are robust to various sensitivity analyses. This study contributes to the literature on institutions and economic development by identifying a channel through which a free media may promote economic growth and development. Our argument follows closely the study by Alesina and Perotti (1996) who adopt a similar model to show that income inequality increases political instability that in turn lowers investment.

The paper is divided into the following sections. Section 2 describes the role of free media in promoting socio-political stability and sheds light on the literature on the link between socio-political stability and economic development. Section 3 presents the empirical model and strategy. Section 4 provides an overview of the variables and data used in the study. Section 5 discusses the estimation results. Section 6 provides an analysis of various robustness checks and section 7 concludes.

2. Media Freedom, Socio-Political Stability, Investment

2.1 Media and Socio-Political Stability

Theoretically, free media may affect socio-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 may improve 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.

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. "Non-captured" media may also provide an inexpensive and non-violent way of expressing mass grievance which may

reduce ethnic, religious and social tensions. For example, in Bangladesh where media has become freer and stronger with the democratization of the economy, the media greatly supported non-governmental organizations to wage campaigns against religious extremism, (Anam (2002)).

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.

Leeson (2008) finds that political participation is higher in the presence of "non-captured" media. Hence there is greater citizen pressure on the authorities. Leeson studies thirteen central and eastern European countries for political knowledge and sixty countries for political participation and voter turnout in the existence of free media. His findings suggest that where media is "captured" people have less political knowledge, whereas less regulations and private ownership of media lead to greater political awareness and participation. An implication of this finding can be that a more politically active society may be able to resolve differences peacefully through the political process without having to resort to violence.

Finally, Pal (2011) shows that for four out of seven indicators of socio-political instability there are statistically significant negative correlations between media freedom and socio-political instability.

2.2. Socio-Political Stability and Investment

The role of capital accumulation or investment in economic growth was acknowledged in one of the earliest models of economic growth, the Harrod-Domar model. Apart from a direct relationship between savings and investment in a nation, the investment climate also has a substantial influence on the level of investment. Socio-political stability is one of the major determinants of the investment climate. Ikejiaku and Mordi (2010) find that the main reasons for Africa's low investments in extraction of natural resources is not unprofitability of such investments, rather it is factors like weak governance, conflict, high crime rate, corruption and lack of infrastructure, that militate against investment. Unfavorable investment climate raises transaction cost of investment and risk of businesses in general. Benhabib and Spiegel (1994, 1997) show that political instability stunts physical capital accumulation in countries. Existing literature also asserts that political instability by hurting property rights negatively affects investment climate and hence economic growth (Svensson, 1998; Zablotsky, 1994; Mauro, 1994; Levine and Renelt, 1992).

Several other studies have also stressed the importance of a politically stable climate in raising investment levels. Barro (1991) reports, for a sample 98 countries in the period 1960-1985, that growth rates are negatively related to measures of political instability. Alesina et. al. (1996) reiterate the same using a sample of 113 countries over 1950-1982 and validates the necessity of having a politically stable climate so as to ensure higher levels of investment in an economy, which in turn would ensure higher levels of economic growth. Collier (1999) finds that GDP per capita declines at a constant rate during years of civil war. The decline is partly triggered by destruction of capital stock, dissaving and capital flight (all of which reflect a decline in investment). Campos and Nugent (2003) find that causality runs from political instability to investment and that the effect is positive and strong for low income countries.

Fielding (2003) using time series data finds that violence of all kinds depresses aggregate investment demand.

Our study proposes a way of overcoming the possibilities of socio-political disturbances, which is by privatizing the media industry. This in turn should help economic development and growth.

3. The Empirical Model

We estimate a simultaneous equation system in which investment and political stability are jointly determined. We follow the methodology of Alesina and Perotti (1996). The following model is estimated:

$$INV_{it} = \alpha_0 + \alpha_1 SPS_{it} + \alpha_2 Controls_{it} + Year_t + \varepsilon_{it} \quad (1)$$

$$SPS_{it} = \beta_0 + \beta_1 INV_{it} + \beta_2 Media\ Freedom_{it} + Controls_{it} + Year_t + \vartheta_{it} \quad (2)$$

Equation (1) has share of investment in GDP (*INV*) as the dependent variable. The socio-political stability index *SPS* is the main explanatory variable. We also include a set of controls which may also determine the share of investment in GDP. The selection of the control variables is based on existing literature. The controls used in equation (1) are real GDP per capita, population growth, education and trade openness.

In equation (2), the dependent variable is *SPS*. The main explanatory variable is *Media Freedom*. We also include *INV* as an independent variable in this equation to account for the joint determination of investment and socio-political stability. Other controls in this equation include real GDP per capita, population growth, education and polity. We also include year effects in both equations. Equations (1) and (2) constitute our baseline specification that we estimate using 2SLS. We consider a panel of 138 countries over the period 1994 to 2005.

4. Data

The data for the present study is obtained from various sources. The main variables of interest are domestic investment, socio-political stability and media freedom. We also use different control variables in the specifications.

Domestic Investment

Domestic investment is measured by share of investment or gross capital formation in real GDP collected from the Penn World Tables.

Media Freedom

Freedom House maintains data on media freedom. These are survey data, spanning over a large time frame and the most comprehensive dataset available on global media freedom. The dataset is based on an annual survey of 'media independence in 195 countries and territories'. The index aims to capture the extent to which print, broadcast and internet freedom are present in every country of the world. The level of press freedom in each country is based on twenty three methodology questions divided into three categories: the legal environment, the economic environment and the political environment.

The legal environment category judges laws and criteria that could influence media contents, the ability of journalists' to operate freely and the government's use of regulations to curb media operations. The degree of political control over the content of news media forms the basis for the political environment. The economic environment includes the structure of media ownership, transparency and concentration of ownership and the impact of corruption and economic institutions on media.

The index provides numerical ratings and rates the independence level of a country's media as 'free', 'partly free' or 'not free'. The numerical rating assigns values between 0 and 100

points. The Freedom House index has assigned higher points to lower levels of press freedom. For the convenience of analysis, the scores have been rescaled between 0 and 1, so that higher scores denote a freer environment. The numerical ratings are available 1994 onwards. The Freedom House measure is widely used in the literature, for instance, Dutta and Roy (2009), Petrova (2008), Leeson (2008), Chowdhury (2004), Brunetti and Weder (2003), Djankov et al. (2003).

Socio-Political Stability

Socio-political stability proxies are obtained from the International Country Risk Guide (ICRG) database. The political risk rating aims to provide a means to compare and assess political stability across countries. The scores assigned to various indicators of political risk are such that higher scores reflect better condition.

Our main index of socio-political stability (*SPS*) is constructed by applying the method of principal components[3] to seven different components of socio-political stability, namely, ethnic tension (*Ethnic)*, a measure of the degree of tension associated with racial, language or nationality divisions; external conflict (*Extconf)*, that includes both violent and non-violent foreign actions that may threaten the incumbent government; internal conflict (*Intconf*), measuring political violence within a country including civil wars, coups and terrorism; government stability (*Govstab*), accounting for credibility of government policies and its ability to stay in office; law and order (*Law)*, an assessment of the judiciary and popular abidance to the law; military in politics (*Milit*), a measure of participation of military in government, and

[3] Appendix B provides a note on principal components analysis.

religious tensions (*Relig*), a measure of instability arising from religious wars and suppression.[4] All indices are rescaled between 0 and 1 where a higher score means greater stability.

Applying the method of principal components to these variables we generate the following index:

$$SPS = 0.38 * Ethnic + 0.37 * Extconf + 0.46 * Intconf + 0.28 * Govstab + 0.43 * Law + 0.39 * Milit + 0.30 * Relig$$

A higher score of *SPS* means greater stability. We also construct two other indices of socio-political stability following the above procedure but using subsets of the components included in *SPS*. These are used as robustness checks and discussed in Section 5.

Other Controls

We consider several control variables that can potentially affect domestic investment and socio-political stability. These controls include macroeconomic and demographic factors, social factors and institutional factors.

We control for real gross domestic product (GDP) per capita. According to neoclassical investment theory, real output is positively related to real investment through the accelerator effect. This has been empirically proven by Fielding (1997), Fielding (1997), Wai and Wong (1982)) and Ndikumana (2000). In the context of socio-political stability the variable captures the idea that recessions may instigate mass discontentment resulting in higher instability. For instance, in Acemoglu (2001), the authors argue that in a non-democratic society ``the initially disenfranchised poor" may contest for power by giving threats of revolutions especially in times of recessions when the opportunity cost of such actions is low. The variable also controls for the

[4] A detailed description of the components of the socio-political stability index is presented in Appendix A.

observed fact that economically backward countries typically have more risk of political instability compared to developed countries possibly due to the absence of effective legal institutions. We use real GDP per capita data from the Penn World Tables.

We control for population in our specifications. Literature has shown that population can be a determinant factor for both investment and political stability of a country. In terms of political stability, a higher population growth might be desirable in situations of political conflict since the government would need bigger military and youth population to have a better support in the army (Lehmijoki and Palokangas[5], 2005). Likewise, a higher population should affect domestic investment of a nation strongly. The impact can be ambiguous. According to neo-classical growth models, for example, the Solow growth model increases in population growth rates lower the rate of capital accumulation and hence slow down economic growth. The Kremerian theory of population and economic growth, however suggests that population growth enhances economic growth by providing more innovative minds. There are greater incentives to invest when research and development progresses as more brains work on them.

Our model also controls for human capital or education. We measure education by using the percentage of population that completed secondary school. The Barro and Lee dataset on schooling provides the data for education. The relationship between human capital and domestic investment seems quite obvious. With higher levels of human capital (higher levels of schooling or higher enrolment rates), adoption of new technology will be much quicker. Mankiw et. al (1992) show that human capital accumulation is correlated with savings and population growth. Therefore excluding human capital will create an upward bias in the estimates of investment and

[5] At the same time, the paper also stresses in such situations, the government would be prone to deter women from joining the labor force. Thus, thought we have controlled for total population in our benchmark specifications, we have controlled male population solely as part of robustness tests later.

population growth rate. Also existing literature stresses the need for human capital in the context of foreign direct investment (FDI) inflows (Xing, 2004; Noorbakhsh, Paloni and Youssef, 2001; Borensztein, Gregorio and Lee, 1997). Following the same argument, human capital should be a determinant factor for domestic investment as well.

The correlation between education and socio-political stability or instability thereof may not be unambiguous. Education may generate greater awareness about consequences of political or social violence and give the government incentives to act in the interest of the people thereby lowering possibilities of instability. However we have also observed the participation of educated citizens in incidents of socio-political unrest historically.[6]

Trade openness is included as a control in the determination of domestic investment. Harrison (1996), Levine and Renelt (1992) show that among several measures of openness, trade has the strongest impact on investment.[7] We obtain trade openness data from the Penn World Tables that measure openness as the share of exports and imports in GDP.

Finally we take into account an institutional factor measured by the variable "polity" that assumes a score between +10 and -10 and reflects the extent to which a country has a functional democracy. Research has shown that political institutions of an economy have important implications for its socio-political stability (or instability). Gupta, Madhavan and Blee (1998) show that the linkage between economic growth and political stability is very much conditional on the nation's initial (at the beginning of the sample period) economic and social environment,

[6] Dasgupta(1973) provides an account of the Naxal movement in India which started off as a protest against landlords by peasant but eventually took over the intellectual class of the society and was joined by students and the educated elite.

[7] Imports can bring in more investment goods to a country and thus can raise investment. Likewise, higher exports bring in the much needed foreign exchange for the purchase of capital goods. Yet, if imports are biased towards consumer goods, domestic production would be hampered.

irrespective of its political regime. In this context, the authors argue that both democracies and autocracies are capable of fostering or retarding political instability in a nation. Thus, we control for 'polity' or the extent of democracy/autocracy so that we can assert confidently that our media coefficient is not picking up the effect of democracy on socio-political stability.

5. Estimation results

Table 1 presents the coefficient estimates of the baseline specification (equations 1 and 2). Column (1) shows the coefficient estimates of equation (1). The main variable of interest is the socio-political instability index *SPS* which has a positive sign and is significant at the 5% level. The coefficient shows that a higher socio-political stability score is associated with higher investment, specifically, an increase in socio-political stability by 1 unit increases investment share in GDP by 4.313 units.

Column (2) shows the estimation results of equation (2). *Media Freedom* shows a significantly positive correlation with *SPS*. The estimate implies that a unit increase in the media freedom score is associated with an increase in the value of the socio-political stability index and hence increases in socio-political stability by 0.797. The coefficient is also significant at the 1% level. The coefficients in columns (1) and (2) together imply that a unit rise in media freedom raises investment share in GDP by 3.44

The coefficient estimates of *Media Freedom* in equation (2) together with the coefficient estimate of *SPS* in equation (1) suggest that greater media freedom is strongly correlated with greater socio-political stability and greater socio-political stability is associated with higher domestic investment. It therefore follows that higher media freedom may promote domestic investment by increasing socio-political stability.

Investment which is also included as an explanatory variable in equation (2) has a positive and significant coefficient showing that higher levels of investment are correlated with greater socio-political stability. Real GDP per capita is positive and significant in both the equations but it has a negligible effect in both equations. The positive sign suggest that economic prosperity favors both investment and socio-political stability climates.

Population growth has a negative and statistically significant correlation with investment (as shown in column (1)) supporting the hypothesis that population growth hampers economic growth; however the variable is insignificant in the context of socio-political stability (column (2)).

Education has a positive and significant coefficient in column (1) showing a positive correlation between human capital and investment. The coefficient is negligible and statistically insignificant in the determination of socio-political stability as shown in column (2). Column (2) shows the coefficient estimate of polity. Polity has a small negative and statistically significant coefficient (-0.015) which indicates that a more democratic society may also have greater chances of socio-political instability. The negative sign is possibly accounting for the fact that democratic societies tend to have more unstable governments since people can use their voting rights to replace bad governments with good ones. Finally, trade openness which is included in equation (1) has a positive and significant coefficient, as shown in column (1), implying that a more open economy also provides larger opportunities of investment

The estimation results for our base model suggest that there is empirical evidence in support of our hypothesis that free media may contribute to economic development by fostering a stable socio-political climate. However, we want to clarify that the results only imply strong correlations and we cannot claim causality simply on the basis of this model. There may be

unobserved effects that have not been accounted for. Nonetheless, the strong correlations obtained have important policy implications. Promoting free media, relaxing government control on the media industry can have positive impact on economic development.

6. Sensitivity Tests

Our model is subject to various sensitivity tests. We construct alternative measures of socio-political stability by using subsets of the components used to calculate the *SPS* index in the base model. These measures are:

$$SPS_2 = 0.39 * Ethnic + 0.39 * Exconf + 0.47 * Intconf + 0.44 * Law + 0.41 * Milit + 0.33 * Relig$$

$$SPS_3 = 0.5 * Ethnic + 0.47 * Exconf + 0.57 * Intconf + 0.45 * Relig$$

Tables 3 and 4 present the estimates for SPS_2 and SPS_3 respectively. The model is robust to these measures of socio-political stability. In both the cases we can see that while media freedom has a strong positive correlation with SPS, SPS has a strong positive correlation with investment share in GDP. The control variables retain their sign and significance.

We also test the base model for robustness by using one period lagged value of media freedom. This controls for the potential problem of simultaneity that may occur when we use contemporaneous values of media freedom and socio-political stability. The results have the same implications, though the coefficient of SPS in equation (1) loses significance. The coefficient of media freedom in equation (2) remains strongly significant.[8]

[8] We also estimate the base model using the initial period value of media freedom (1994 values). This estimation captures the correlation between socio-political stability and investment rate given the degree of media freedom in the economy in the beginning of the time period used in the analysis. Media freedom has a coefficient of 0.716 and is significant at the 1% level.

In order to account for regional effects we include regional dummies in equation (2) and re-estimate the model. The results are presented in Table 5 and they are robust to the inclusion of regional dummies. The regional dummies themselves are insignificant expect for Sub-Saharan Africa, South Asia and Europe and Central Asia.

Finally we also modify the set of control variables by including a measure of financial development, namely, the share of private credit by banks in GDP. Data is obtained from Ross and Levine database of financial development indicators. The results as shown in Table 6 are similar to the previous ones. While the coefficient of SPS in equation (1) is insignificant, the coefficient of media freedom in equation (2) is very much significant. Most of the other variables retain their sign and significance.

7. Conclusion

Our study addresses the role of media in economic development. We set up a simultaneous equation system that jointly determines share of domestic investment in GDP (a proxy for economic development or growth) and socio-political stability (an index constructed by applying the principal components analysis to various indicators of socio-political stability). We show that free media has a positive correlation with socio-political stability and greater socio-political stability enhances domestic investment. Thus we claim that free media may promote economic development by improving socio-political stability. Several sensitivity tests reinforce our hypothesis.

The co-existence of economic underdevelopment and socio-political instability is not a rare phenomenon. The absence of a stable business environment not only impedes foreign investment but may also lead to capital flight. A socially and politically stable economy boosts

investors' confidence. It is therefore not a coincidence that countries that are prone to social and political unrests such as the Sub-Saharan African countries, Pakistan, Bangladesh, Iraq, etc. are also staggeringly poor. Government policies in these countries need to address the issue of socio-political stability for long-term growth and development.

Our findings also suggest that one of these policies could be promoting autonomy and privatization of the media industry. Countries like Zimbabwe and Myanmar are not only poor and had multiple incidents of political and social violence historically, but also characterized by suppressed media. On the other hand a free media may reduce such incidents through various channels discussed earlier. In Bangladesh, for example, democratization of the economy also freed the media industry from control and the industry lent active support to non-governmental organizations campaigning against religious extremism (Anam, 2002).

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Table 1: Summary Statistics

	Mean	S.D.	Min	Max
Investment/GDP	21.46	10.28	-7.36	59.66
SPS	1.93	0.38	0.55	2.59
Media freedom	0.59	0.23	0.00	0.95
Real GDP per capita	11997.94	11351.25	308.92	45694.50
Trade openness	76.32	48.45	14.78	446.06
Population growth	1.57	1.08	-1.48	9.09
Education	11.07	9.82	0.10	48.20
Polity	5.15	5.79	-9.00	10.00

Notes: N = 1043. Media freedom scores are rescaled between 0 – 1, where a higher score means greater freedom. SPS scores are constructed by applying the principal components method to several indicators of socio–political stability, namely, ethnic tensions, external and internal conflict, government stability, law and order, military in government and religious tensions.

$$SPS = 0.38 * Ethnic + 0.37 * Extconf + 0.46 * Intconf + 0.28 * Govstab + 0.43 * Law + 0.39 * Milit + 0.30 * Relig$$

A higher value of the SPS index implies greater socio-political stability.

Table 2: Media freedom, Socio-Political Stability and Investment

	(1)	(2)
Explanatory Variables	Investment/ GDP	SPS
Investment/GDP		0.018***
		(0.003)
Media freedom		0.797***
		(0.077)
SPS	4.313*	
	(2.411)	
Real GDP per capita	0.000	0.000***
	(0.000)	(0.000)
Population growth	-3.333***	0.006
	(0.323)	(0.014)
Education	0.130***	-0.000
	(0.035)	(0.001)
Polity		-0.015***
		(0.003)
Trade openness	0.053***	
	(0.006)	
Constant	12.599***	1.078***
	(4.465)	(0.086)
R-squared	0.419	0.454

N = 1043. *** p<0.01, ** p<0.05, * p<0.10. Standard errors in parentheses. All regressions include year dummies, not reported.

Notes: Column (1) shows the coefficient estimates of equation (1). The main variable of interest is the socio-political stability index SPS which has a positive sign and is significant at the 5% level. The coefficient shows that a higher socio-political stability score is associated with higher investment, specifically, an increase in SPS by 1 unit increases investment share in GDP by 4.313 units. Column (2) shows the estimation results of equation (2). Media freedom shows strongly positive correlation with SPS. The estimate implies that a unit increase in the media freedom score is associated with an increase in the value of the SPS index and hence increases in socio-political stability by 0.797. The coefficient is also significant at the 1% level.

Table 3: Alternative Measure of Socio-Political Stability

	(1)	(2)
Explanatory Variables	Investment/GDP	SPS_1
Investment/GDP		0.018***
		(0.003)
Media freedom		0.821***
		(0.077)
SPS_1	4.852**	
	(2.243)	
Real GDP per capita	0.000	0.000***
	(0.000)	(0.000)
Population growth	-3.253***	0.001
	(0.327)	(0.014)
Education	0.128***	-0.000
	(0.036)	(0.001)
Polity		-0.013***
		(0.003)
Trade openness	0.053***	
	(0.006)	
Constant	11.925***	0.998***
	(4.084)	(0.089)
Observations	1043	1043
R-squared	0.415	0.477

N = 1043. *** p<0.01, ** p<0.05, * p<0.10. Standard errors in parentheses. All regressions include year dummies, not reported.

Notes: An alternative measure of socio-political stability is used, SPS_1 that excludes government stability. Government stability can have a negative or positive effect on investment. While a more stable government creates a safer business environment, greater instability of government may also signal that the political system actively replaces bad governance with good ones. This may attract investment as well.

Table 4: Alternative measure of Socio-Political Stability 2

	(1)	(2)
Explanatory Variables	Investment/GDP	SPS_2
Investment/GDP		0.014***
		(0.003)
Media freedom		0.573***
		(0.069)
SPS_2	8.445***	
	(2.969)	
Real GDP per capita	0.000**	0.000
	(0.000)	(0.000)
Population growth	-3.132***	0.008
	(0.332)	(0.013)
Education	0.122***	-0.000
	(0.036)	(0.001)
Polity		-0.007***
		(0.003)
Trade openness	0.051***	
	(0.006)	
Constant	6.918	1.014***
	(4.844)	(0.078)
R-squared	0.388	0.226

N = 1043. *** p<0.01, ** p<0.05, * p<0.10. Standard errors in parentheses. All regressions include year dummies, not reported.

Notes: Another measure of socio-political instability is used. SPS_2 includes measures of socio-political stability that involve more violence. These include internal and external conflict, ethnic and religious tensions.

Table 5: Estimation results including regional dummies

	(1)	(2)
Explanatory variables	Investment/GDP	SPS
Investment/GDP		0.021***
		(0.005)
Media freedom		0.747***
		(0.080)
SPS	8.778***	
	(2.173)	
Real GDP per capita	0.000	0.000***
	(0.000)	(0.000)
Population growth	-3.005***	0.000
	(0.321)	(0.015)
Education	0.119***	0.000
	(0.036)	(0.001)
Polity		-0.011***
		(0.003)
Trade openness	0.049***	
	(0.006)	
Sub Saharan Africa		0.128**
		(0.060)
South Asia		-0.117*
		(0.066)
Middle East & N. Africa		0.076
		(0.051)
E. Asia Pacific		-0.053
		(0.049)
Europe & C. Asia		0.105*
		(0.058)
Latin America & Caribbean		-0.020
		(0.039)
Constant	4.649	0.992***
	(4.070)	(0.127)
R-squared	0.383	0.429

N = 1043. *** p<0.01, ** p<0.05, * p<0.10. Standard errors in parentheses. All regressions include year dummies, not reported.
Notes: Equation (2) includes regional dummies to account for regional effects.

Table 6: Estimation results included financial development indicator

	(1)	(2)
Explanatory Variables	Investment/GDP	SPS
Investment/GDP		0.022***
		(0.003)
Media freedom		0.780***
		(0.082)
SPS	3.661	
	(2.425)	
Real GDP per capita	0.000	0.000***
	(0.000)	(0.000)
Population growth	-3.444***	0.032*
	(0.363)	(0.017)
Education	0.052**	-0.000
	(0.026)	(0.001)
Private Credit/GDP	4.053***	
	(0.954)	
Polity		-0.014***
		(0.003)
Trade openness	0.049***	
	(0.006)	
Constant	12.278***	0.977***
	(4.459)	(0.091)
R-squared	0.467	0.397

N = 968. *** p<0.01, ** p<0.05, * p<0.10. Standard errors in parentheses. All regressions include year dummies.
Notes: A measure of financial development, namely share of private credit of the banking sector in GDP is included as a control in equation (1).

Appendix A

Description of Data

A.1 Socio-Political Instability Components

- *Ethnic Tension* captures any unrest in a country attributable to racial, nationality and language diversities. The score varies from 0 to 6. In all the above cases, as mentioned before, higher scores denote better situation.
- *External Conflict* assesses the influence of foreign action on incumbent government. This may take non-violent forms such as diplomatic pressure, territorial disputes or violent forms such as cross-border conflicts or wars. The index ranges from 0-4, and a higher value indicates lower risk.
- *Internal Conflict* is composed of threat of civil unrest, terrorism or political violence and occurrence of civil war. It captures the extent of political unrest in a country and its potential impact on government functioning. The scoring ranges from 0 to 12.
- *Government Stability* assesses the government's ability to stay in office and perform its declared duties. Its subcomponents are legislative strength of the government, government unity and popular support. The score for this indicator runs from 0 to 12.
- *Law and Order*, as the name suggests, consists of law and order separately. The total score of this range from 0 to 6 with higher values depicting "Low Risk".
- *Military in Politics* measures the risk associated due to involvement of military in politics is taken as a diminution of democratic accountability and is also seen to be an indication of an internal or external threat. The score for this factor ranges from 0 to 6 points with a higher value indicating "Lower Risk".
- *Religious Tensions* reflect dominance of the government by any particular religion and suppression of the others and has the potential to initiate civil strife. The score for this factor ranges from 0 to 6, with a higher value indicating "Lower Risk".

A.2 Domestic Investment

According to the definition provided by WDI, this variable is defined as the expenditure on addition to the stock of fixed assets of the economy and also the spending on the net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the

construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress." According to the 1993 SNA, net acquisitions of valuables are also considered capital formation.

Appendix B

Principal Components Analysis (PCA)

PCA is a multivariate statistical technique used to examine relationships among different quantitative variables. This method can be used to reduce the number of variables in a dataset into a smaller number of 'dimensions'. Mathematically speaking, if there are n correlated variables, PCA generates uncorrelated indices or components, where each component is a linear weighted combination of the n variables. For example, for a set of variables $X_1....X_n$,

$$PC_1 = w_{11}X_1 + w_{22}X_2 + ... + w_{1n}X_n$$
$$\vdots$$
$$PC_m = w_{m1}X_1 + w_{m2}X_2 + ... + w_{mn}X_n$$

where, w_{mn} represents the weight for the *m*th principal component and the *n*th variable. These weights are the eigenvectors of the co-variance matrix (since we have standardized our data; otherwise it is the correlation matrix). The eigenvalue of the corresponding eigenvector is the variance (σ) for each principal component. The first principal component, PC_1 explains the largest possible variation in the dataset subject to the constraint, $\sum_{i=1}^{n} w_{1i}^2 = 1$. Since the sum of the eigenvalues equals the number of variables in the original dataset, the proportion of total variation accounted for by each principal component is the ratio σ_i / n.

Similarly, all subsequent principal components ($PC_2...PC_n$) are uncorrelated with the previous principal components but explain smaller and smaller proportions of the variation of the original variables.

In our study, the set of variables $X_1....X_n$ are the different indicators of socio-political stability. We use the first principal component to construct the socio-political stability index *SPS*.