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Do Democracy and Press Freedom Reduce Corruption? Evidence from a Cross Country Study

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Abstract

This paper calls attention to the instrumental role of democracy and press freedom in combating corruption. As opposed to an autocracy with no or limited press freedom, a free press in a democracy can inform voters about the corruption of political representatives, and voters in turn can punish incumbents by electing opposition parties. The empirical investigation carried out in this paper shows that democracy and press freedom can have significant impact on corruption. Though corruption may persist in the short- to medium-run, an increase in voters' participation and press freedom can reduce corruption.

Kurzfassung

Dieser Beitrag untersucht die Rolle von Demokratie und Pressefreiheit bei der Bekämpfung von Korruption. Im Gegensatz zu Autokratien, in denen Pressefreiheit vollständig oder teilweise eingeschränkt ist, kann in Demokratien eine freie Presse über die Korruption politischer Repräsentanten informieren. Darauf können Wähler reagieren, indem sie Oppositionsparteien wählen. Die empirischen Untersuchungen dieses Beitrages zeigen, dass Demokratie und Pressefreiheit einen signifikanten Einfluss auf Korruption haben. Auch wenn Korruption kurz- bis mittelfristig andauert, können eine Erhöhung der Wählerbeteiligung und Pressefreiheit Korruption reduzieren.

1 Introduction

Why are public officials – bureaucrats and politicians – more corrupt in some countries than in others? Are democratic societies less corrupt than non-democratic societies? Does a free press play any role in informing the citizens about public corruption? The purpose of this paper is to answer these questions by examining the link among democracy, press freedom and corruption. In a society in which corruption and bribery have been accepted as a part of business practice and social norms, efficient allocation of productive resources is vulnerable to corruption (Acemoglu and Verdier 1998). Bureaucratic corruption and delays are partly responsible for the lack of development and slower growth in many countries (Shleifer and Vishny 1993). Cross-country studies on corruption confirm the link between a high level of corruption and a low level of investment and growth (Mauro 1995).[1] Though the interest in the impact of corruption on economic development is not new (Leff 1964, Hutington 1968, Rose-Ackerman 1978), the availability of data on corruption for a large number of countries is a relatively new phenomenon. However, looking at those data we observe a significant cross-country variation in corruption.

After the fall of communism and other forms of dictatorship, democracy now is the paramount form of political organization. Similarly, an uncensored press, free from day to day government intervention, constitutes a pre-eminent component of a democratic society. A democratic government has political incentives to take timely action against corruption. The primary role of a free press comes from information dissemination; by spreading the state of corruption and misdeeds committed by public officials, bureaucrats and elected politicians, a free press can reduce the information asymmetries that otherwise prevail between voters - the principle, and public officials, bureaucrats and elected politicians - the agents. In addition, a free press can directly influence public policies by criticizing public misdeeds and corruption.

In fact, a functioning democracy and an uncensored press can complement and reinforce each other in combating corruption. While an uncensored press can bring information about corruption to the forefront, a functioning democracy can create incentives for the voters to protest against corruption and for the government to act against corruption. Whether a government takes action against corruption depends on whether the citizens exert pressure by making use of their political rights – criticizing, protesting and voting. However, in a functioning democracy with opposition parties, the government has immediate incentives to combat

[1] The early literature on corruption such as Leff (1964) and Huntington (1968) suggested that corruption could promote efficiency and growth in the context of pervasive and cumbersome regulations. For an account of harmful effects of corruption, see Rose-Ackerman (1996). A very good review on corruption issues can be found in Bardhan (1997). See Jain (2001) also for a recent review of corruption literature.

corruption. In contrast, in the absence of criticism from a free press and a pressure from the opposition, corruption can result from the political immunity enjoyed by government leaders in authoritarian countries.[2]

Therefore, we propose the following scheme, which shows the way democracy and press freedom influence the state of corruption. The presence of free press brings public corruption cases to the voters while voters in a democracy in turn punish corrupt politicians by ousting them from public offices. Hence elected politicians react to the voters by reducing corruption. The whole mechanism can be schematically summarized:

Free Press ➔ Voters' State of Knowledge ➔ Democracy ➔ Selection of Political Parties ➔ State of Corruption

Control of corruption through democracy and press freedom has two important benefits: First, the presence of corruption acts like a tax on the productive activities and hence any reduction of corruption can improve resource allocation by rewarding the most productive units to their full amount. Second, if democracy and press freedom are effective, a society does not need to allocate additional resources to control corruption. Since the democracy and press freedom are goals of every society as ends, they can serve as means too of combating corruption.

The direct link between a democratic country and the economic well being of its citizens is not evident. There is empirical evidence that states a positive link (Kaufmann and Kraay 2002, and Rivera-Batiz 2002), that finds a non-liner relationship (Barro 1997, 1999) and that does not find any link at all (Tavres and Wacziarg 2001) between democracy and economic growth. However, many academics are strong proponents of promoting democratic institutions. For instance, Rodrik (1999) in his analysis of institutions goes as far as to argue that international lenders should put democracy as the only loan precondition and that no other institutions should be imposed.

Whether additional emphasis on democracy and press freedom is justified and whether these two components have the potential to control corruption and increase growth potentials can only be determined by empirical investigation.[3] Motivated by the considerable interest in democracy and press freedom and the limited empirical evidence of their impact on corruption, we examine their impact in this paper. To carry out our empirical investigation we rely on a substantial data set that covers 97 countries over the period from 1995 to 2002 and we utilize both cross-section and time series properties of our data.

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[2] This logic is similar to Dreze and Sen (1982) who argue that it is the openness and accountability of democratic societies that explain why India but not China has managed to avoid large-scale famines.

[3] Of course the value of democracy and press freedom goes far beyond the control of corruption. As argued in Sen (1999, pp. 148-51), participation in political and civil lives in the form of democracy and freedom of speech are the primary means and the principal ends of development.

Our paper differs from the previous literature on this issue at least in two important aspects as we will see in the next section: First, we use a more objective measure of democracy that accounts for two important dimensions: political competition and voters' participation. Second, we test the effect of incomplete information on corruption while controlling for democracy both in a cross-section and time series setting. The remainder of the paper is organized in the following manner: in the succeeding section we briefly review the theoretical link among political competition, voters' participation, incomplete information, and rent seeking. We also briefly review some empirical findings. In section III we describe the data and present correlations among democracy, press freedom and corruption. In section IV we present the econometric estimation and the discussion of the results, and in the final section we conclude the paper.

2 Political Competition, Incomplete Information and Rent Seeking: A Review

The strands of political economy literature that are relevant for our purpose are the political economy of rent seeking and the role of incomplete information in this field. The theoretical work on the political economy of rent seeking dates back as much as to Krueger (1974) who shows the way government restrictions upon certain activities such as international trade can lead to rents of a variety of forms and can result in a divergence between private and social costs. The conflict of interest between rent-seeking political representatives and private citizens has been further studied in Brennan and Buchanan (1980, 1981) who assume government as a malevolent revenue maximizing Leviathan.

Whether political competition can reduce rent-seeking behavior has been studied in Becker (1983) and Wittman (1989) among others. In a principal-agent framework, Wittman (1989) strongly argues that democratic political markets are capable of producing wealth-maximizing outcomes. He shows how various political institutions such as political parties, candidate reputation, and government structure arise in order to mitigate principal-agent problems in a democratic society. In contrast to Becker (1983), Wittman (1989) argues that the thrust for efficiency is a strong force and this study takes elections explicitly into account.

The issue of incomplete information is explored in Grossman and Helpman (1996) among others. In a world of incomplete information private citizens differ from interest groups because not all of the citizens (voters) have perfect information on the policy stances of competing political parties. This incomplete information on the part of the voters encourages government decision makers to pursue rent-seeking policies that benefit interest groups at the expense of the voters. Grossman and Helpman (1996) show that an informed voter casts her ballot for the party of her preference. However an uninformed voter may respond to campaign rhetoric. When the share of informed voters increases, the likelihood that their preferences are reflected in the election results increases as well.

To what extent political representatives exploit their power to appropriate resources for themselves and to what extent voters can discipline politicians through elections have been further discussed in Persson and Tabellini (2000, pp. 77-81). Under an incomplete contract where electoral promises cannot be enforced, politicians have complete discretion once in office. However, citizens vote retrospectively and deliberately punish corrupt behavior by removing incumbents from office. However, the behavior of politicians could be different under

asymmetric information that increases the likelihood for the incumbent to collect additional informational rents.

Empirical Studies: The aforementioned theoretical works predict that the state of competition in a political market and the citizens' state of information influence policy outcomes. There is a large body of empirical works on the impact of electoral competition and voters' turnout on policy outcomes. There is also a large body of literature on the role of media in informing and influencing voters. However, most of the literature referred to in this paper is limited to the USA.

Though theoretical prediction of the effect of political competition is very obvious, the empirical evidence in the US context is at best mixed. Rogers and Rogers (2000) test the effect of political competition on government size controlling for traditional influences for the period from 1950 to 1990. This study does not find any effect of party competition on the growth of the size of government measured by both revenue and expenditure. For party competition they use the percentage of votes won by the current governor in the most recent election. However, in a recent study on the US states for the period from 1960 to 1993, Besley and Case (2003) report significant impact of party competition on total taxes per capita and on workers compensation. An increase in party competition results in a decrease of these two components. For party competition they have used a measure based on distance from 0.5 in the fraction of seats held by democrats in the two houses.

Whether public opinion influences public policy in general has been examined in Wright, Erikson and McIver (1987) for the US states. Their measure of public opinion is based on CBS/New York Times opinion surveys. Using ordinary least square and instrumental variable regressions, they find that public opinion is a major determinant of state policy and that it is more important than social and economic characteristics of states.

Turning to the effect of voters' participation on policy outcomes, a number of studies have examined the effect of an increase in voting on policy outcomes. In a pooled time series analysis for the 50 US states from 1978 to 1990, Hill, Leighley and Hinton-Andersson (1995) have found a strong relationship between the degree of mobilization of lower class voters and the generosity of welfare benefits provided by state governments. Further support of this increase in participation and policy outcomes can be found in Husted and Kenny (1997). They have looked at how an expansion in voting franchise due to the elimination of poll taxes and literacy tests led to higher participation of poor voters and how this resulted in an increase in welfare spending while the other spending stayed unchanged. Their analysis has encompassed a panel of 46 US states from 1950 to 1988. These two works and others cited there support the view that participation is an important element of determining policy outcomes in a democratic society.

In the case of the media, empirical works in the US context suggest that the media play a significant role in influencing the way voters think about issues competing candidates. A story of

public interest in the media often generates discussions and subsequent stories that could outweigh the story and multiply impacts. To see the political impact of prime-time television, Feldman and Sigelman (1985) conducted a study that examined the attitudinal effects of the television docudrama, "The Day After" which depicted the aftermath of a Soviet nuclear attack on Kansas City. Their panel data contains opinions before and after the program. They found that the program "The Day After" had its greatest impact on salience of and information about nuclear war. Their empirical findings show that the effects of the associated coverage of the program and the discussion that the program generated outweighed the effects of the program itself.

The role of the media goes beyond providing information and creating public opinion. In fact, there is evidence that suggests that the media not only influence the way voters think about issues but also the way voters think about competing candidates (Ramsden 1996). In a series of related studies conducted at the time of the national election in 1984, Rosenberg and McCafferty (1987) examined the nonverbal aspects of candidate presentation on image making and voters' preferences. Their results suggest that a candidate's image can be shaped in such a way as to manipulate voters' preferences.

The work by Besley and Burgess (2002) is directly relevant to confirming the role of both democracy and the media in ensuring that the preferences of voters are reflected in public policies in the developing country context. Using a panel data set of Indian states, they found that state governments are more responsive in states where newspaper circulation, electoral turnout, and political competition are higher.

In a related work by Djankov et al. (2001) the issue of media ownership on various outcomes is examined. They gathered a new data set on media ownership in 97 countries and found that government ownership of the press typically has a negative effect on citizens' rights, government effectiveness, and corruption. However, since they only have a cross-section of countries, it is difficult to establish the causal link.

Our paper is closely related to Bruentti and Weder (1999) and Treisman (2000). Bruentti and Weder (1999) examined the effect of a free press on corruption and found that a free press reduces corruption. They also included democracy in one of their cross-country regressions and did not find any significant impact of democracy on corruption. Treisman (2000) tested different variables associated with corruption including democracy. He found that while a current degree of democracy is not significant, long exposure to democracy reduces corruption.

A difficulty of past studies of this kind including Bruentti and Weder (1999) and Treisman (2000) is that they often define democracy as a phenomenon across countries that can be captured by a bivariate variable while the reality is probably more complex. Two important dimensions that make our paper different from Bruentti and Weder (1999), Treisman (2000), and other similar works is our measure of democracy that takes political competition and voters'

participation into account, and the empirical methods we follow in our analysis. Since both the theoretical and the empirical works reviewed here suggest that political competition and voters' participation are important determinants of public policy outcomes, omission of these components in any measure of democracy casts serious doubt on the validity of the measure.

3 Data and Summary Statistics

To carry out our empirical analysis we assembled a data set that includes information on 97 countries and covers the time period from 1995 to 2002. Our aim was to construct a comprehensive data set and, accordingly, inclusion of a country was determined by the availability of information on the variables that were required for our analysis. Due to unavailability of time series data on the relevant variables and unavailability of instruments, some countries could not be included in all the analysis. The list of countries in our data set, their distribution according to income categories and according to region is presented in Table A.1 in the appendix.[4]

The data set that we assembled is tailored to the needs of our empirical framework and contains information on corruption, democracy and press freedom. The data set also contains information on trade openness (Sachs Warner openness and Frankel Romer openness), GDP per capita (GDPPC), geography (Absolute Latitude), socio-cultural affiliation (Ethno-Linguistic Fragmentation, Percent Protestant), colonial origin (Common Law System), and natural resource endowments (exports of agricultural raw materials and other natural resources in merchandize exports). Table 1 provides a list of these variables, their descriptive statistics and it also indicates the source of the variables.

As a quantitative measure of corruption, we used the corruption perception index (CPI) published annually by the Transparency International (TI). The ***corruption perception index*** (henceforth ***CPI***) measures the degree of corruption as seen by business people, academics and risk analysts and ranges between 10 (highly clean) and 0 (highly corrupt). The CPI ranks countries in terms of the degree to which corruption is perceived among public officials and politicians. As argued in Lamsdorff (2002), "since the actual level of corruption cannot be determined directly, perception may be all we have to guide us." The CPI is a poll of polls and in 2002, CPI draws on 15 surveys from nine independent institutions. The CPI includes only those countries that are featured in at least three surveys. For details see www.tranparency.org and Lamsdorff (2002). The TI publishes its corruption perception index since 1995 and suggests that comparisons from year to year should be based on a country's score and not on its rank and we have followed this suggestion. However, like many other subjective indices, this index is not

[4] In terms of income categories, our data set consists of 24 low-income countries, 25 lower-middle income countries, 21 higher-middle income countries, 4 high-income non-OECD countries and 23 high-income OECD countries. In terms of region, our data set comprises 12 countries from East Asia and Pacific (EAP), 40 countries from Europe and Central Asia (ECA), 19 countries from Latin America and the Caribbean (LAC), 5 countries from Middle East And North Africa (MENA), 2 countries from North America (NA), 4 countries from South Asia (SA), and 15 countries from Sub-Saharan Africa (SSA).

without criticism. Nonetheless, we use this index due to its large coverage and time series property. Note that the CPI of TI is highly correlated with other similar indices such as the governance indicators constructed by Kaufmann et al. (2002); the correlation coefficient between the "graft" that measures the perception of corruption and the CPI in 2001 is 0.972.

Table 1: Data and Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Max
Corruption Perception Index, 2002 [(a)]	97	4.591	2.379	1.200	9.700
Competition, 2000 [(b)]	97	46.610	19.141	0.000	70.000
Participation, 2000 [(b)]	97	41.310	15.709	0.000	70.000
Democracy, 2000 [(b)]	97	20.954	12.339	0.000	45.600
Press Freedom, 2000 [(c)]	97	39.165	22.004	5.000	83.000
Sachs and Warner Openness [(d)]	75	0.400	0.493	0.000	1.000
Log of Frankel Romer Openness [(e)]	81	2.696	0.809	0.830	5.640
GDPPC, 2000 [(f)]	95	9525.986	13157.770	115.880	56372.000
Graft 2000-2001[(g)]	97	0.249	1.004	-1.140	2.250
Absolute Latitude [(h)]	81	28.197	17.685	0.230	63.890
Ethno Linguistic Fragmentation [(i)]	72	38.444	30.097	0.000	93.000
Percent Protestant [(j)]	85	14.599	24.006	0.000	97.800
Common Law System [(k)]	85	0.282	0.453	0.000	1.000
Natural resource exports in 1970[1)] [(l)]	63	66.02	29.35	6.71	99.43

[1)] As a % of merchandise exports. It includes agricultural raw material exports, fuel exports, ores and metal exports, and food exports.

Sources: [(a)] Transparency International (http://www.transparency.org); [(b)] Vanhanen's index of democracy www.svt.ntnu.no/iss/data/vanhanen; [(c)] Freedom House (http://www.freedomhouse.org); [(d)] Sachs and Warner (1995); [(e)] Frankel and Romer (1996); [(f)] World Bank (2002); [(g)] Kaufmann et al (2002); (h) Hall and Jones (1999); [(i)] Mauro (1995); [(j)] Barro (1996); [(k)] La Porta (1997). [(l)] WDI (2003).

For democracy we used Vanhanen's democratization index (henceforth VDI). Though different operational indicators of democratization have been formulated and used in cross-country regressions (for instance Barro, 96, Treisman, 2000), we were interested in finding quantitative indicators of democratization that take the most important dimensions into account, available for a large section of countries over a long time period. It seems to us that the VDI fulfills all these criteria. The index is based on two dimensions, public contestation and the right to participate, which are named as ***competition*** and ***participation*** respectively.[5] Competition is based on the electoral success of smaller parties and calculated by subtracting the percentage of the votes won by the largest party from 100 per cent. For participation, the percentage of the

[5] As mentioned in Vanhanen (1992), these two measures of democracy are based on Dahl (1971).

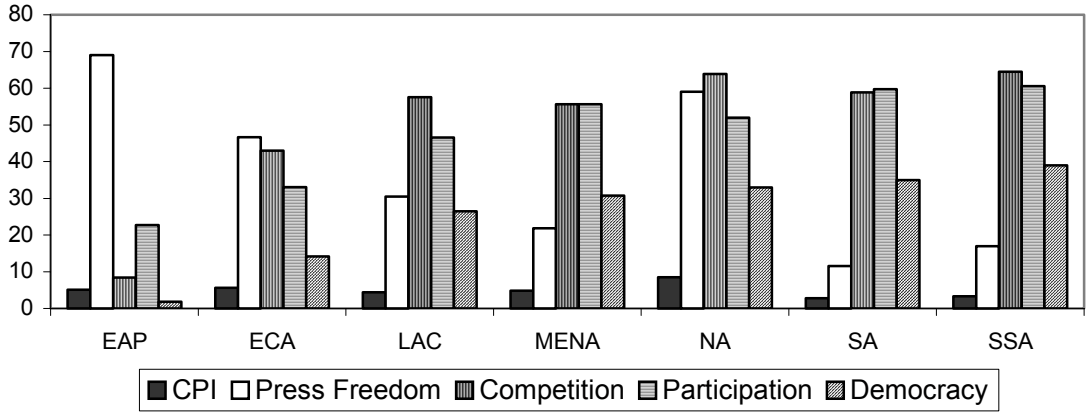
population that actually voted in these elections is used as a measure. Since competition and participation represent two different dimensions of democracy, according to the author, "a combination of the two would be a more realistic indicator of democracy." Accordingly, the author constructed an equally weighted ***index of democratization*** (henceforth ***democracy***) by multiplying competition and participation and dividing the outcome by 100 which the author considers as the principal indicator of democracy (Vanhanen 1992, pp. 22-23).

The two measures, participation and competition, that Vanhanen (1992) utilized to construct the measure of democracy make it a better indicator than a dichotomized variable that divides countries between autocracy and democracy only and does not take the degree of democracy within the democratic countries into account. However, there are important variations across democratic nations that can have significant impact on policy outcomes that Vanhanen's index of democratization does not take into account. For instance, many European democracies that have a political system where the proportion of seats held is proportional to the vote share differ from a majoritarian system such as the United States that do not yield proportionality. Yet, the Vanhanen's index does not take such difference into account.

Press freedom is a measure of the press freedom of countries conducted by the Freedom House annually since 1979. The index has three components: First, laws and regulations that influence media content measured on a scale between 0 and 30; second, political pressure, controls and violence that influence content measured on a scale between 0 and 40; third, economic pressure and control that influence content measured on a scale between 0 and 30. Each of these components is based on multiple criteria. Each country's rating and score is based on a total of three categories where the higher the number the lower the press freedom. The data come from correspondents overseas, staff's travels, international visitors, the findings of human rights organizations, specialists in geographic and geopolitical areas, the reports of governments and a variety of domestic and international media. Though the Freedom House has made changes in methodology over the years, it claims that the changes do not alter the "comparability of data for a given country over the 23-year span, or of the comparative ratings of all countries over that period", which makes the data suitable for our purpose. For details see http://www.freedomhouse.org and Sussman and Karlekar (2002).

Figure 1 shows the state of corruption (CPI), press freedom, the two components of democracy – participation and competition – and democracy for the year 2000 for seven geographic regions: East Asia and Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA), and Sub-Saharan Africa (SSA).

Figure 1: Corruption, Press freedom and Democracy in 2000



Among these seven regions, the most corrupt region and the least corrupt region in 2002 were South Asia and North America, respectively. Not surprisingly, North America had the highest level of press freedom and democracy and South Asia had the lowest level of press freedom and third lowest level of democracy. In terms of political competition and voters' participation, MENA had the lowest level of both components. However, its overall democratization index was higher than the SSA's and coincidently, its level of corruption was lower than the SSA's. Countries of the EAP region on an average had a level of corruption only marginally lower than the average of the regions. Coincidently, their score in press freedom, political competition, voter's participation and democracy was slightly above the average. Looking at Figure 1 this apparent link among press freedom, political competition, voters' participation and democracy, and corruption can be made about ECA and LAC, too.

In fact, a simple display of the relationship between democracy and corruption shows a powerful and close association between these two components. Figure 2 shows corruption levels across countries plotted against democracy and Figure 3 shows corruption levels across countries plotted against press freedom. For democracy and press freedom, the data is for the year 2000 and for corruption, the data is for the year 2002. In all cases, the values are the difference from the respective mean. However, for democracy, it is democracy minus mean, for corruption, it is mean minus CPI and for press freedom it is mean minus press freedom. That means, for ith country, the value in democracy is the ith country's index of democratization minus the mean value of the index of democratization for all countries. But for corruption, the ith country's value in corruption is the mean value of CPI for all countries minus the ith country's CPI. Similarly for press freedom is the mean value of press freedom for all countries minus the ith country's score in press freedom. It implies that for a country that has a positive value in democracy/press freedom has a higher than the global average level of democracy/press freedom and vice versa, and a country that has a negative value in corruption has a lower than the global average level of corruption and vice versa.

Figure 2: Democracy and Corruption

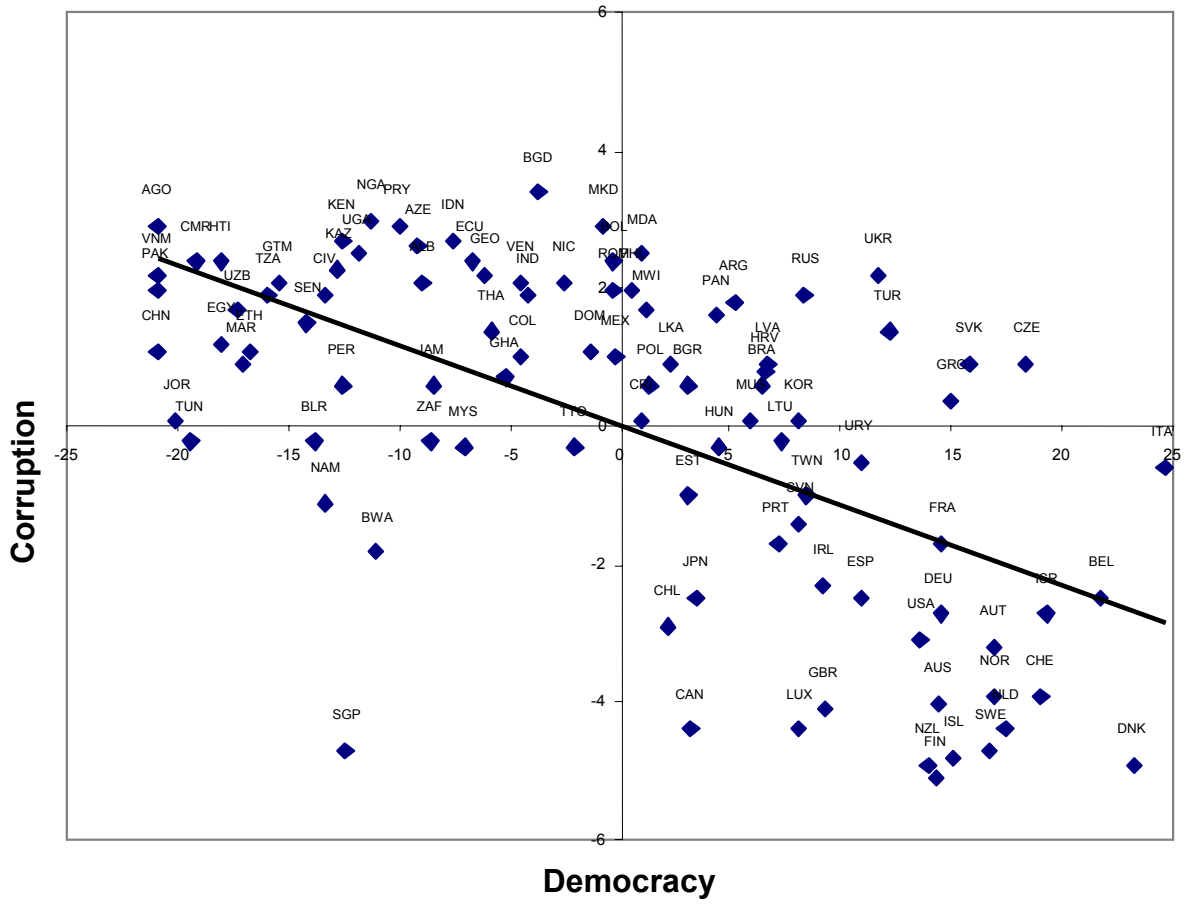
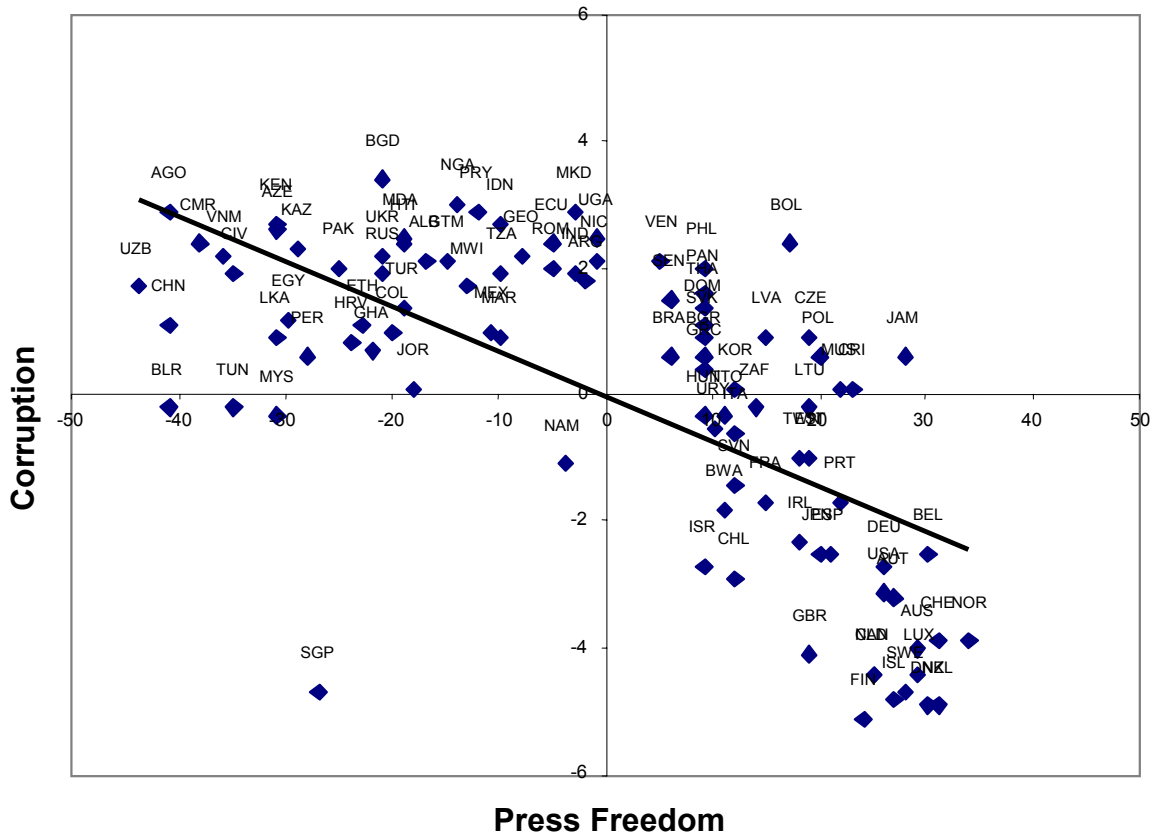


Figure 2 contains observations for 97 rich and poor countries. Some important facts to note based on Figure 2 are: first, in general, countries with a higher level of democracy, expressed by a multiplication of political competition and voters' participation, have a lower level of corruption. Second, to achieve a reduction of corruption to the level of the global average, democracy needs to be at the level of the global average (second and fourth quadrants). Third, autocratic countries with a level of corruption lower than the average are exceptions since only nine out of 97 countries have a rate of democracy below the average combined with a level of corruption lower than the average (third quadrant). Fourth, countries with above the average democracy but above average corruption are mostly the transition countries that started building up a democratic society only recently (first quadrant).

In Figure 3, similar to Figure 2, there is a strong association between press freedom and corruption. Some of the important observations to be made are: First, countries with a higher level of press freedom generally have a lower level of corruption. Second, to achieve a reduction of the level of corruption to the global average, the level of press freedom needs to be on the average (second and fourth quadrants). Third, countries with levels of press freedom and corruption below the average are exceptions since this applies only to five out of 97 countries (third quadrant). Fourth, countries with above average press freedom and above average

corruption are mostly transition countries (first quadrant). In these countries a free press developed only recently.

Figure 3: Press Freedom and Corruption



4 Estimation and Results

What is the link between theoretical prediction and the actual outcome? In other words, to what extent are political competition, voters' participation and incomplete information matter for controlling corruption? To be able to estimate this, we carry out a regression analysis for a cross-section of countries and use OLS regressions, instrumental variable regressions, a static panel analysis and a dynamic panel analysis. While we have direct measures of political competition, and voters' participation and their combined measure of democracy, we use press freedom for incomplete information.

4.1 Parsimonious Form

Following Hall and Jones (1999), we start our estimation with a parsimonious form where corruption depends primarily on democracy and press freedom. However, to see the effects of each of these variables, we start with the effects of democracy and the effects of press freedom separately and for the partial effects we combine them. Column 1 and column 2 in Table 2 report the OLS regression of CPI on democracy. Column 1 reports the coefficients of the two components of democracy, competition and participation separately, and column 2 reports the combined index of democracy. In both cases competition and participation and democracy together have a significant negative impact on corruption. Similarly, press freedom, reported in column 3, has a significant negative impact on corruption. Column 4 combines democracy and press freedom in a single OLS regression and shows that both democracy and press freedom affect corruption negatively. Not surprisingly, the effect of democracy and press freedom decreases when these components are put into a single regression. However, it is important to note that both remain significant. Column 5 is similar to column 4. However, in this case democracy is split into its two components, competition and participation, and combined with press freedom. It shows that it is the participation component of democracy that is statistically important in reducing corruption. The estimated coefficients indicate that a 1% increase in voters' participation can result in a 3.9% improvement in CPI (column 5). In terms of the magnitude of the influence, press freedom seems the most important factor, because a 1% reduction of press restriction entails a 5.1% improvement in CPI (column 4). Though we do not report it, notably this finding remains robust when we explore alternative methods and specifications.

Table 2: Effects of Democracy and Press Freedom on Corruption: OLS Regressions

Dependent Variable: Corruption Perception Index 2002

	(1)		(2)		(3)		(4)		(5)	
Competition	0.025	*							-0.022	
	(0.013)								(0.014)	
Participation	0.060	**							0.039	***
	(0.016)								(0.014)	
Democracy			0.115	***			0.048	**		
			(0.016)				(0.022)			
Press Freedom					-0.071	***	-0.051	***	-0.069	***
					(0.008)		(0.012)		(0.012)	
Constant	0.911		2.171	***	7.361	***	5.561	***	6.692	***
	(0.625)		(0.385)		(0.376)		(0.901)		(1.160)	
Number of observations	97		97		97		97		97	
F (2, 94)	19.57		53.14		71.11		39.38		27.93	
Prob>F	0.000		0.000		0.000		0.000		0.000	
R-squared	0.294		0.359		0.428		0.456		0.474	
Adj R-squared	0.279		0.352		0.422		0.444		0.457	

Values in the parenthesis are the respective standard deviations. ***, **, * indicate the level of significance at 1% or better, 5% or better and 10% or better, respectively.

4.2 Robustness Analysis

The empirical findings described above suggest that democracy and information (press freedom) have a significant impact on the observed corruption and that the presence of democracy and the availability of information can reduce the level of corruption significantly. However, there is a number of potential problems of such OLS regressions as recognized in Dollar and Kraay (2003), such as omitted variables, endogeniety, and measurement errors. We start with the issue of omitted variables:

Although our estimates imply that democracy and press freedom significantly reduce the likelihood of corruption, all estimates assume that the observed corruption in a country and democracy and press freedom are not correlated via any third factor. This means that the validity of the results will be threatened if other factors correlated with the estimates of democracy and press freedom affect corruption. To address this issue of omitted variable bias, we carried out a robustness analysis that controls for additional variables. Needless to say that it is impossible to control for all possible variables that might be correlated with democracy, press freedom and corruption. Table 3 reports the robustness of the OLS results.

Table 3: Effects of Democracy and Press Freedom on Corruption: Robustness Analysis

Dependent Variable: Corruption Perception Index 2002

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8): Graft	
Democracy	0.038	*	0.059	**	-0.007		0.0418	*	0.052	**	0.071	***	0.057	*	0.057	**
	(0.023)		(0.025)		(0.016)		(0.025)		(0.022)		(0.027)		(0.028)		0.026	
Press Freedom	-0.028	**	-0.045	**	-0.024	**	-0.051	***	-0.033	**	-0.041	***	-0.028	*	-0.040	***
	(0.013)		(0.015)		(0.009)		(0.012)		(0.013)		(0.016)		(0.017)		0.015	
S-W Openness	2.410	***														
	(0.441)															
Frank-Rom			0.457	*												
			0.256													
GDPPCx10^3					0.13	***										
					(0.01)											
Regional Dummies:																
EAP							1.857									
							(0.896)									
ECA							1.146	**								
							(0.829)									
LAC							0.067									
							(0.856)									
MENA							2.495	*								
							(1.061)									
NA							3.135	**								
							(1.438)									
SSA							0.823									
							(0.875)									
Percent Protestant									0.033	***						
									(0.009)							
ELF											-0.009					
											(0.008)					
Natural Resource Exports in 1970													-0.027	***		
													(0.009)			
Constant	4.149	***	3.999	**	4.433	***	4.678	***	4.412	***	5.324	***	6.602		0.752	**
	(0.893)		(1.259)		(0.641)		(1.214)		(0.940)		(1.152)		(1.324)		(0.363)	
Number of observations	75		81		95		97		85		72		63		97	
F	42.75		24.81		86.58		13.38		30.79		25.04		24.85		47.57	
Prob > F	0.000		0.000		0.0000		0.0000		0.0000		0.000		0		0.0000	
R-squared	0.644		0.4915		0.7405		0.5488		0.5328		0.525		0.558		0.5030	
Adj R-squared	0.629		0.4717		0.7320		0.5078		0.5155		0.504		0.536		0.4924	
Root MSE	1.505		1.7889		1.2383		1.6689		1.6928		1.783		1.699		.71521	

Regional Dummies: EAP: East Asia and the Pacific; ECA: Europe and Central Asia; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; NA: North America; SA: South Asia; SSA: Sub-Saharan Africa (SSA). ELF: Ethno-linguistic Fragmentation. Values in the parenthesis are the respective standard deviations. ***, **, * indicate the level of significance at 1% or better, 5% or better, and 10% or better respectively.

We start with the openness to international trade. Since trade barriers create opportunities for public diversion,[6] openness to trade could be related to corruption as well as democracy and press freedom. We use the Sachs and Warner's (1995) openness index (S-W Openness) and Frankel and Romer's (1996) predicted trade share (Frank-Rom). The S-W openness measures the fraction of years during the period from 1950 to 1994 in which an economy has been open. This is measured on a [0,1] scale. The Fran-Rom trade share is the log of predicated trade share of an economy estimated on the basis of a gravity model of international trade that only uses a country's population and geographical features. Column 1 and column 2 of Table 3 report the estimated coefficients. As can be seen from the table, an economy's openness significantly reduces the extent of its corruption. However, addition of this factor does not change the role of democracy and press freedom in combating corruption.

The second set of controls that we tested is related to income and regional characteristics. However, there could be a couple of identification problems linked to the inclusion of income as an exogenous variable. There is no doubt that democracy, press freedom, corruption and other institutional variables evolve jointly with economic variables, and Barro (1999) maintains that a higher standard of living promotes democracy. However, recent studies that control for the endogeniety of institutions (Mauro 1995, Hall and Jones 1999, Acemoglu et al 2001) found that it is rather the institution that affects income. Nonetheless, we control for income by including gross domestic per capita income (GDPPC) and for regional characteristics we control for seven geographic regions. For GDPPC, the data is from the World Bank's World Development Indicators and for regions, we follow the World Bank's classification of all countries into seven categories: East Asia and the Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), North America (NA) and Sub-Saharan Africa (SSA). The omitted region is chosen arbitrarily to be South Asia (SA). Column 3 and column 4 of Table 3 show the results for income and regions respectively. The inclusion of income makes democracy insignificant. This is primarily because of the high correlation between income and democracy. For the regions, both democracy and press freedom remain significant, implying that the results are not driven by any particular region.

In column 5 and column 6, we use religious affiliation (per cent protestant) and ethno-linguistic fragmentation (ELF). Barro (1996) used religious affiliation to explain democracy and Mauro (1995) instrumented for corruption using ethno-linguistic fragmentation. However, as can be seen from columns 5 and 6, these factors do not change the significance of democracy and press freedom.

To control for "natural resource curse", we used natural resource exports as a percentage of merchandize exports in 1970. Here natural resource exports include agricultural raw material exports, fuel exports, ores and metal exports, and food exports. It has been argued in literature that natural resources create opportunities for rent seeking behavior and that there is empirical

[6] See Krueger (1974) for theoretical arguments and some early evidences from India and Turkey.

evidence that supports this view.[7] Column 7 reports the estimated coefficients. Similar to Leite and Weidman (1999), we find a strong association between natural resource abundance and corruption. However, the significance of democracy and press freedom in controlling corruption still remains.

In the last column (column 8), we used the corruption indicator constructed by Kaufmann et al (2002). Instead of regressing CPI 2002 on democracy and press freedom, we regressed graft 2000-01 on democracy and press freedom. Though we see a change in magnitude, the impact of democracy and press freedom remains significant.

4.3 Instrumental Variable Analysis

The robustness analysis presented in Table 3 shows that democracy and information (press freedom) have a significant impact on corruption. However, the analysis is subject to endogeniety and measurement errors. To correct these problems, we use instrumental variables as suggested in Hall and Jones (1999), Acemoglu, Johnson, Robinson (2001) and Dollar and Kraay (2003). For democracy we use the percentage of the population that speaks any major European language (Eurfrac) and the distance from the equator (Latitude). Dollar and Kraay (2003) used Eurfrac to instrument intuitional quality and Hall and Jones (1999) used Eurfrac and Latitude to instrument social infrastructure. We use Eurfrac as an instrument following Lipset (1993, p.168) and Barro (1999, p.174) who argued that colonial heritage can play an important role in the subsequent democratic and non-democratic practices.

For press freedom, we use ethno-linguistic fragmentation (ELF) and common law system (CLS) as instruments. Mauro (1995) used the ELF index constructed by Taylor and Hudson (1972). The ELF measures the probability that two randomly selected persons from a given community will not belong to the same ethno-linguistic group; therefore, the higher the probability, the more fragmented the country. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) used the CLS to explain the legal determinants of external finance in a cross-section of countries. The CLS is the bivariate variable that is equal to one if the origin of the company or commercial law of a country is English Common Law. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) argue that most countries' legal systems have an origin and most of the countries have adopted their legal systems from their former colonizers.

[7] See, for instance, Leite and Weidmann (1999) and the references therein.

Table 4: Effects of Democracy and Press Freedom on Corruption: IV Regressions

Dependant Variable: Corruption Perception Index 2002

	(1)		(2)		(3)	
Democracy	0.184	***			0.193	***
	(0.026)				(0.027)	
Press Freedom			-0.138	***	-0.016	
			(0.032)		(0.030)	
Constant	0.917		9.937	***	1.487	
	(0.592)		(1.164)		(1.479)	
Number of observations	81		71		71	
F (2, 94)	51.890		18.880		41.780	
Prob>F	0.000		0.000		0.000	
R-squared	0.295		0.206		0.551	
Adj R-squared	0.286		0.194		0.538	
Instruments:	Eurfrac		ELF		Eurfrac	
	Latitude		CLS		Latitude	
					ELF	
					CLS	
Sargan OverID Test:						
p value	0.682		0.183		--	
test result	accept		accept		--	

ELF: Ethno Linguistic Factionalism; CLS: Common Law System. Values in the parenthesis are the respective standard deviations. ***, **, * Indicate the level of significance at 1% or better, 5% or better and 10% or better, respectively.

Following this literature, we estimated instrumental variable (IV) regressions, reported in columns 1, 2 and 3 of Table 4. For the IV regressions, the exclusion restriction is that language (colonial past) and geography (distance from the equator) do not have any impact on present corruption other than their impact on democracy. Similarly, ethno-linguistic fragmentation and legal origin (common law system) do not have any impact on corruption other than their impact on press freedom. Column 1 reports the results of the IV regression of corruption on democracy and the next column reports the impact of press freedom on corruption. As in the case of the OLS regression, both democracy and press freedom have significant negative impact on corruption. Convincingly, the over identification test reported at the bottom of the table in column 1 and column 2 is not rejected implying that the instruments are valid instruments.

To see the partial impact of democracy and press freedom on corruption, we put them together in an IV regression which is shown in column 3. However, under this setting, press freedom does not have a significant impact on corruption any more. Why is this so? To explore this we go back to section III of this paper. A causal look at Figure 2 and Figure 3 reveals that countries with a high level of democracy and a low level of corruption are countries with a high level of press freedom and a low level of corruption. Therefore, it seems that both democracy

and press freedom evolve jointly. Therefore, there is a problem of identification: identifying the partial effects of democracy and press freedom on corruption faces the fundamental identification problem. Countries that are more democratic are also countries with a high level of press freedom. Though it is possible to instrument democracy and press freedom following the recent literature on institutions that relies on historical and geographical determinants of institutions, since both democracy and press freedom are linked to a single set of historical and geographical factors, instruments themselves are highly correlated with each other. This becomes very clear when we examine the correlation coefficients between fitted democracy and fitted press freedom which is -0.57.

4.4 Static Panel Analysis

Though the use of historical instruments is common in literature, the theoretical reasoning for the instruments that we utilized here is not entirely convincing. Some of these instruments can have direct influence on the outcome. In fact, an OLS regression of corruption on ethno-linguistic fragmentation shows a significant impact of the latter on the former questioning the validity of the instruments. Therefore, at this stage we exploit the time series variation of our data rather than confining to cross-section only.

We have an unbalanced panel of data from 1995 to 2002 where the minimum and the maximum number of observations for a single unit are one and six respectively, with an average number of observations equal to 4.3. We assume no correlation between country specific residuals and explanatory variables and estimate a random effects model. Table 5 reports the GLS estimate of a random effects model. Taken jointly, our estimated coefficients are significant as indicated by χ^2.

We maintain the structure of Table 2 and start with the two separate components of democracy, competition and participation, reported in column 1 and proceed to the combined index reported in column 2. Column 3 reports the effect of press freedom, column 4 reports the partial effect of democracy and press freedom, and column 5 reports the two components of democracy and press freedom together. Comparing the coefficients between Table 2 and Table 5, it is very evident that the results remain similar; though there is an overall reduction in magnitude, both democracy and press freedom remain significant and it is the participation of voters which is the more important of the two components of democracy. Now a 1% increase in voters' participation can have a 1% improvement in CPI (column 5) and a 1% reduction in press restriction can have a 3.3% improvement in CPI (column 4). However, the reduction in the overall magnitude of the effect is not surprising given the short time period we considered and the persistence of corruption, democracy and press freedom in the short-run.

Table 5: Effects of Democracy and Press Freedom on Corruption: (Static) Panel Data Analysis

Dependent variable: Corruption perception index; Time period: 1995 to 2002, unbalanced panel

	Random Effects		Random Effects		Random Effects		Random Effects		Random Effects		Fixed Effects		Fixed Effects		GEE Population Averaged Model	
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
Competition	0.002								-0.006				-0.005			
	(0.004)								(0.004)				(0.004)			
Participation	0.013	**							0.010	*			0.002			
	(0.006)								(0.006)				(0.006)			
Democracy (ID)			0.027	***			0.015	**			0.001				0.029	***
			(0.008)				(0.008)				(0.009)				(0.011)	
Press Freedom					-0.037	***	-0.033	***	-0.038	***	-0.014	**	-0.016	**	-0.065	***
					(0.005)		(0.005)		(0.006)		(0.006)		(0.007)		(0.006)	
Constant	4.099	**	4.136	***	6.154	***	5.698	***	6.076	***	5.616	***	5.896	***	6.783	***
	(0.328)		(0.266)		(0.275)		(0.363)		(0.440)		(0.321)		(0.409)		(0.439)	
Number of observations	393		393		393		393		393		393		393		403	
Number of groups	91		91		91		91		91		91		91		99	
Wald chi2	6.45		12.16		50.83		55.31		57.30						368.38	
Prob > chi2	0.0398		0.000		0.000		0.000		0.000						0.0000	
F											2.51		2.15			
Prob > F											0.082		0.094			
R-sq:																
Within	0.000		0.001		0.016		0.016		0.019		0.017		0.021			
Between	0.287		0.352		0.489		0.497		0.517		0.492		0.511			
Overall	0.282		0.323		0.465		0.473		0.490		0.467		0.484			

Numbers in the parenthesis are the respective standard deviations. ***, **, * indicate the level of significance at 1% or better, 5% or better and 10% or better, respectively.

To check the validity of our assumption (of the random effects model), we re-estimated the specification of column 1 and column 4 with the fixed effects model reported in column 6 and 7 respectively. However, the estimated coefficients of the fixed effects model differ from the random effects model and a Hausman test of the equality of the coefficients rejects the hypothesis (not reported). Note that most of the variation comes from the between estimates and very little from the within estimates as is evident from the reported R-squares from column 1 to column 7. Assuming that our model is correctly specified, the observed difference is due to the assumption of zero correlation between the country specific error terms and the explanatory variables.

Lastly, we estimated a generalized estimation equation (GEE) population-averaged model reported in column 8. As can be seen in Table 5, both democracy and press freedom appear to be statistically highly significant.

4.5 Dynamic Panel Analysis

Dynamic analysis can add valuable insights if corruption, democracy and press freedom show variability over time across units. However, if all of these components are highly persistent, then the dynamic analysis does not add much. Nonetheless, we estimate the following dynamic panel data model following Arellano and Bond (1991), henceforth AB:

$$y_{it} = \alpha_1 y_{i(t-1)} + \beta' x_{i(t-1)} + \lambda_i + \eta_i + \upsilon_{it}$$

Here y_{it} is the CPI of country *i* during the time period t, the vector x contains a set of explanatory variables that include democracy and the press freedom, λ_t is the time effect that is common to all countries, η_i is the unobservable country specific effect and υ_{it} is the standard error term. First, differencing the equation removes the η_i and produces an equation that is estimable by instrumental variables. We use the Generalized Method of Moments (GMM) estimator derived by AB which assumes that there is no second-order autocorrelation in the first-differenced idiosyncratic errors. Table 6 reports the estimation results.

Table 6: Effects of Democracy and Press Freedom on Corruption: Dynamic Panel Analysis

Arellano-Bond GMM Estimates (all variables are in first differences)
Dependent variable: Corruption perception index; Time period: 1995 to 2002, unbalanced panel
Arellano-Bond Dynamic Panel Analysis, One Step procedure

	(1)		(2)		(3)		(4)		(5)	
$CPI_{(t-1)}$	0.898	***	0.883	***	0.897	***	0.888	***	0.893	***
	(0.242)		(0.236)		(0.238)		(0.235)		(0.240)	
Comp	0.002								-0.001	
	(0.008)								(0.008)	
Participation	-0.003								0.000	
	(0.012)								(0.012)	
Democracy			0.000				-0.001			
			(0.016)				(0.015)			
Press Freedom					-0.025	*	-0.025	*	-0.026	**
					(0.013)		(0.013)		(0.013)	
Constant	0.025		0.024		0.018		0.018		0.018	
	(0.024)		(0.023)		(0.023)		(0.023)		(0.024)	
Number of observations	209		209		209		209		209	
Number of groups	76		76		76		76		76	
Wald chi2	14.34		14.37		17.04		17.43		17.41	
Sargan test of over-identifying restrictions , Prob>Chi2	0.842		0.833		0.823		0.821		0.827	
AB test that average autocovariance in residuals of order 1 is 0: Pr>z	0.004		0.004		0.004		0.004		0.005	
AB test that average autocovariance in residuals of order 2 is 0: Pr>z	0.64		0.655		0.508		0.503		0.509	

AB stands for Arellano and Bond. Numbers in the parenthesis are the respective standard deviations. ***, **, * indicate the level of significance at 1% or better, 5% or better and 10% or better, respectively.

The test results reported at the bottom of the table are at best mixed. The Sargen test from the one-step homoskedastic estimator rejects the null hypothesis that the over-identifying restrictions are valid. However, this could be due to heteroskedasticity. We did not estimate the two-step procedure since AB warned not to use it for inferences. The Arellano-Bond test of the null of no first-order autocorrelation in the differenced residuals is rejected, it does not reject the null of no second-order autocorrelation which supports the consistency of the estimate (AB, pp. 281-82.).

To facilitate a comparison, Table 6 maintains the structure of Table 2 and Table 5. All different specifications from column 1 to column 5 show that the most significant factor which determines corruption is lagged corruption. The estimated coefficients for democracy and its two components are not significant in reducing corruption any more. However, the effect of press freedom on corruption still remains statistically significant though the magnitude is smaller than the OLS and IV regressions. Now a 1% reduction in press restriction can have a 2.5% improvement in CPI (column 4).

The estimated results reported in Table 6 imply that corruption persists at least in the short- to medium-run. Therefore, the state of corruption of a country in the year before is the best determinant of the present state of corruption in that country. Though a change in democracy and press freedom may influence the extent of corruption, a dramatic change is unlikely. This is not surprising. For instance, taking the results of two years, say 1995 and 2000, we find that the correlations for CPI, democracy and press freedom are 0.951, 0.91 and 0.932 respectively. Given the fact that changes in the state of democracy and press freedom of a country do not take place overnight, neither does corruption. Even if there is a change in democracy and press freedom, there might be a substantial time lag necessary to change the state of corruption. Of course there are exceptions.

The findings presented in this section confirm the importance of democracy, particularly voters' participation, and press freedom. Overall, these findings confirm that countries can reduce corruption by allowing press freedom and citizens' opinions in democracy. For instance, two countries that are the most and the least corrupt according to CPI in 2002 are Bangladesh and Finland with a CPI of 1.2 and 9.7 respectively. Keeping other things equal if press freedom and voters' participation in Bangladesh increase to the level of Finland, our most conservative estimate predicts that the CPI of Bangladesh will be more than doubled from 1.2 to 2.5.

In general, our findings conform with those of Besley and Burgess (2002) in confirming the role of democracy and press freedom in public policy outcomes. Our findings on the role of voters' participation as an important determinant of corruption is in line with the empirical literature on the role of citizens' participation on policy outcomes (Hill et al 1995, Husted and Kenny 1997). The role of political competition which we found statistically insignificant once we control for press freedom and participation conforms with Rogers and Rogers (2000) findings in the case of the USA. It seems that mere political competition is not sufficient to change public policy outcomes unless citizens' participation in elections increases. The role of media which is

the most pronounced among all the factors conforms with both the theoretical and empirical literature mentioned in section 2.

5 Concluding Remarks

In this paper, we examined the role of democracy and press freedom in reducing corruption. The findings of this paper suggest that political competition in a democratic society and a free press play an important role in reducing corruption. The findings remain robust under alternative settings. While a free press reduces imperfect information about policy outcomes and informs the voters, political competition in a democratic society ensures that voters' preferences are reflected in policy. While democracy – the extent of voters' participation and the competition among political parties – is likely to increase the pressure on incumbents, it is the voters' participation that remains the most significant of the two components of democracy.

The findings of our paper support that, opposed to an autocracy, the primary rationale in favor of a democratic society is that in a democracy policies are guided by voters' preferences. However, voters do not directly participate in policy making, their preferences find their way into the policy making process through their elected representatives and it is the voting mechanism that paves the way for voters to elect their representatives. Therefore, if voters want their preferences to be reflected in policy, it is necessary to have elections in regular intervals and voters who participate in these elections. The likelihood of disciplined political representatives increases with an augmentation of the voters' turnout.

In terms of policy implications, development communities and donor agencies need to put more emphasis on democratic practices and on press freedom. Since promotion of democracy and press freedom can expose autocratic corrupt governments to scrutiny, autocratic regimes would not adopt such practices on their own. Therefore, donor communities and development agencies can add democracy and press freedom as aid and development assistance conditionally as argued in Rodrik (1999) which may force such regimes to reduce corruption.

Though democracy and press freedom are effective instruments to combat corruption, there may be a substantial time lag. Though a change in democracy and press freedom may influence the extent of corruption, a dramatic change is unlikely. Since building up a democratic society is a general objective of every country and the freedom of expression is a value cherished by all, democracy and press freedom are desirable for all countries. In addition, democracy and press freedom can play an instrumental role in making a country less corrupt.

It is needless to say that democracy does not work 'as an automatic remedy' to all ills, as Sen (1999, p.155-156) warned. It rather creates an opportunity, but "with what strength such opportunities are seized depends on a variety of factors, including the vigor of multiparty politics…." Though the cross-country evidence suggests that democracy creates incentives for

reducing the level of corruption, there are democratic countries with a high rate of corruption. For these countries, explanations need to go beyond tautologies such as 'interest groups that benefit from corruption are more powerful than the voters' and we need to find the sources of the power of such interest groups in democratic societies.

References

Acemoglu, D., and Verdier, T. 1998. Property Rights, Corruption and the Allocation of Talent: A General Equilibrium Approach, *Economic Journal*, 108, pp. 1381-1403.

Acemoglu, D., S. Johnson, and J.A. Robinson. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation, *American Economic Review*, 91 (5), pp. 1369-1401.

Arellano, M. and S. Bond. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *Review of Economics Studies,* 58 (2), pp. 277-297.

Bardhan, Pranab. 1997. Corruption and Development: A Review of Issues, *Journal of Economic Literature*, 35 (3), pp. 1320-1356.

Barro, Robert J. 1996. Democracy and Growth, *Journal of Growth,* 1 (1), pp. 1-27.

Barro, Robert J. 1997. *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge, Mass.: MIT Press.

Barro, Robert J. 1999. Determinants of Democracy, *Journal of Political Economy,* 107 (6), pp. S158-S183.

Becker, Gary S. 1983. A Theory of Competition Among Pressure Groups for Political Influence, *Quarterly Journal of Economics*, 98 (3), pp. 371-400.

Besley, Timothy and Burgess, Robin. 2002. *The Political Economy of Government Responsiveness: Theory and Evidence from India*. Discussion Paper: London School of Economics.

Besley, Timothy and Case, Anne. 2003. Political Institutions and Policy Choices: Evidence from the United States, *Journal of Economic Literature*, XLI (March), pp. 7-73.

Brennan, Geoffrey and James Buchanan. 1980. *The Power to Tax*. New York: Cambridge University Press.

Brennan, Geoffrey and James Buchanan. 1981. Revenue Implications of Money Creation Under Leviathan, *AER Papers and Proceedings*, 71 (2), pp. 347-351.

Bruetti, Aymo and Weder, Beatrice. 1999. *A Free Press is Bad News for Corruption*. University of Basel.

Dahl, R.A. 1971. *Polyarchy: Participation and Opposition*. New Haven and London, Yale University Press.

Djankov, Simeon, Caralee McLiesh, Tatiana Nenova, and Andrei Shleifer. 2001. *Who Owns the Media?* Harvard University of Economic Research Discussion Paper Nr. 1919.

Dollar, D. and A. Kraay. 2003. Institutions, Trade and Growth, *Journal of Monetary Economics*, 50, pp. 133-162.

Dreze, J. and Sen, A. 1982. *Hunger and Public Action*. Oxford: Oxford University Press.

Feldman, S., and Sigelman, L. 1985. The Political Impact of Prime-Time Television: "The Day After", *Journal of Politics*, 47 (2), pp. 556-578.

Frankel, J.A. and Romer, D. 1996. Does Trade Cause Growth? *American Economic Review*, 89 (3), pp. 379-399.

Grossman, Gene M. and Helpman, Elhanan. 1996. Electoral Competition and Special Interest Politics, *Review of Economic Studies,* 63 (2), pp. 265-286.

Hall, R.E., and C. Jones. 1999. Why do Some Countries Produce so much more Output per Worker than Others? *Quarterly Journal of Economics*, 114, pp. 83-116.

Hill, Kim Q., Leighley, Jan E. and Hinton-Anderson, Angela. 1995. Lower-Class Mobilization and Policy Linkage in the US States, *American Journal of Political Science*, 39 (1). pp. 75-86.

Huntington, Samuel P. 1968. *Political Order in Changing Societies*. New Haven: Yale U. Press.

Husted, Thomas A., and Kenny, Lawrence W. 1997. The Effect of Voting Franchise to the Size of Government, *Journal of Political Economy*, 105 (1), pp. 54 -82.

Jain, Arvind K. 2001. Corruption: A Review, *Journal of Economic Surveys*, 15 (1), pp. 71-121.

Kaufmann, Daniel and Aart Kraay. 2002. *Growth Without Governance.* World Bank Policy Research Working Paper, No. 2928.

Krueger, Anne O. 1974. The Political Economy of the Rent-Seeking Society, *American Economic Review,* 64 (3), pp. 291-303.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. 1997. Legal Determinants of External Finance. *Journal of Finance*, LII (3) July, pp. 1131-1150.

Lambsdorff, J. G. 2002. *Background Document to the 2002 Corruption Perception Index: Framework Document.* Transparency International and Göttingen University

Leff, Nathaniel H. 1964. Economic Development through Bureaucratic Corruption, *American Behavioral Scientist*, 8 (2), pp. 8-14.

Leite, Carlos and Weidman, Jens. 1999. *Does Mother Nature Corrupt? Natural Resources, Corruption and Economic Growth.* International Monetary Fund Working Paper 99/85. Washington, DC.

Lindbeck, Assar and Weibull, Jorgen. 1993. A Model of Political Equilibrium in Representative Democracy, *Journal of Public Economics*, 51 (2), pp. 195-209.

Mauro, P. 1995. Corruption and Growth, *Quarterly Journal of Economics*, 110 (3), pp. 681-712.

Persson, T. and Tabellini, G. 2000. *Political Economics: Explaining Economic Policy*. Cambridge MA: MIT Press.

Ramsden, Graham P. 1996. Media Coverage of Issues and Candidates: What Balance is Appropriate in a Democracy? *Political Science Quarterly*, 111 (1), pp. 65-81.

Rivera-Batiz, Francisco L. (2002). Democracy, Governance and Economic Growth: Theory and Evidence, *Review of Development Economics*, 6 (2), pp. 225-247.

Rodrik, Dani. 1999. *Institutions for High-Quality Growth: What They Are and How to Acquire Them*. Harvard University (October).

Rogers, Diane L., and Rogers, John H. 2000. Political Competition and State Government Size: Do Tighter Elections Produce Looser Budgets? *Public Choice*, 105 (1), pp. 1-21.

Rose-Ackerman, Susan. 1978. *Corruption: A Study in Political Economy*. New York: Academic Press.

Rose-Ackerman, Susan. 1996. *When is Corruption Harmful*? Working Paper. The World Bank.

Rosenberg, Shawn W., and McCafferty, Patrick. 1987. The Image and the Vote: Manipulating Voters' Preferences, *Public Opinion Quarterly*, 51 (1), pp. 31-47.

Sachs, J.D. and Warner, A. 1995. Economic Reform and the Process of Global Integration, *Brookings Papers on Economic Activity*, 1, pp. 1-95.

Sen, A. 1999. *Development as Freedom*. New York: Anchor Books.

Shleifer, A., and Vishny, R. 1993. Corruption, *Quarterly Journal of Economics*, 108 (3), pp. 599-617.

Sussman, L. R., and Karlekar, K. D. 2002. *The Annual Survey of Press Freedom 2002*. New York: Freedom House.

Tavares, Jose and Romain Wacziarg. 2001. How Democracy Affects Growth, *European Economic Review*, 45, pp. 1341-1378.

Taylor, Charles L., and Hudson, Michael C. 1972. *World Handbook of Political and Social Indicators*. Ann Arbor, MI: ICSPR.

Treisman, Daniel. 2000. The Causes of Corruption: A Cross-National Study, *Journal-of-Public-Economics,* 76 (3), pp. 399-457.

Vanhanen, Tatu (ed.) 1992. *Strategies of Democratization*. Washington, DC: Crane Russak.

Wittman, Donald. 1989. Why Democracies Produce Efficient Results, *Journal of Political Economy*, 97 (6), pp. 1395-1424.

Wright, Gerald C. Jr., Erikson, Robert S., McIver, John P. 1987. Public Opinion and Policy Liberalism in the American States, *American Journal of Political Science*, 31 (4), pp. 980-1001.

Appendix

Table A.1: List of Countries Included in the Study

Income Group[a)]	Region[a)]						
	EAP	ECA	LAC	MENA	NA	SA	SSA
Low Income							
	Indonesia	Albania	Haiti			Bangladesh	Angola
	Vietnam	Azerbaijan	Nicaragua			India	Cameroon
		Georgia				Pakistan	Ethiopia
		Moldova					Ghana
		Ukraine					Ivory Coast
		Uzbekistan					Kenya
							Malawi
							Nigeria
							Senegal
							Tanzania
							Uganda
Lower Middle Income							
	China	Belarus	Bolivia	Egypt		Sri Lanka	Namibia
	Philippines	Bulgaria	Colombia	Jordan			
	Thailand	Kazakhstan	Dominican Republic	Morocco			
		Latvia	Ecuador	Tunisia			
		Lithuania	Guatemala				
		Macedonia, FYR	Jamaica				
		Romania	Paraguay				
		Russia	Peru				
Upper Middle Income							
	Malaysia	Croatia	Argentina				Botswana
	South Korea	Czech Republic	Brazil				Mauritius
		Estonia	Chile				South Africa
		Hungary	Costa Rica				
		Poland	Mexico				

Income Group[a)]	Region[a)]						
	EAP	ECA	LAC	MENA	NA	SA	SSA
		Slovak Republic	Panama				
		Turkey	Trinidad and Tobago				
			Uruguay				
			Venezuela				
High Income Non-OECD							
	Singapore	Slovenia		Israel	Canada		
	Taiwan	Austria			United States		
	Australia	Belgium					
	Japan	Denmark					
	New Zealand	Finland					
		France					
		Germany					
		Greece					
		Iceland					
		Ireland					
		Italy					
		Luxembourg					
		Netherlands					
		Norway					
		Portugal					
		Spain					
		Sweden					
		Switzerland					
		United Kingdom					

[a)] World Bank Classification, see WDI 2002. EAP: East Asia and the Pacific; ECA: Europe and Central Asia; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; NA: North America; SA: South Asia; SSA: Sub-Saharan Africa (SSA).

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