Determinants of Corruption in Developing Countries

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I. INTRODUCTION

Corruption is a limp in the walk of human progress. It is not a new phenomenon; it is as old as the history of mankind itself. The corruption made itself visible when the institution of the government was established. According to Glynn, *et al.* (1997), "…..no region, and hardly any country, has been immune from corruption". Like a cancer, it strikes almost all parts of the society and destroys the functioning of vital organs, means cultural, political and economic structure of society Amundsen (1999). All this was proved by the major corruption scandals of France, Italy, Japan, Philippine, South Korea, Mexico, United States etc. These scandals bring the corruption problem on the agenda of major international institutions like International Monetary Fund, World Bank, World Trade Organisation, Transparency International and Organisation for Economic Cooperation and Development.[1]

According to the World Bank corruption is "the single greatest obstacle to economic and social development. It undermines development by distorting the role of law and weakening the institutional foundation on which economic growth depends."[2] The Transparency International takes it as, "... one of the greatest challenges of the contemporary world. It undermines good government, fundamentally distorts public policy, leads to the mis-allocation of resources, harms the private sector and private sector development and particularly hurts the poor."[3]

During the 20th century, corruption gained substantial attention in academic research and became a meeting place for researchers belonging to various disciplines of the social sciences and history. The researcher group belonging to political science has focused the small number of themes that include; how a political system addresses the

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[1]For detail, see *Washington Post*, 8th August 1997; *Wall Street Journal*, 13th September 1996 and *Wall Street Journal*, 18th December 1997.

[2]www.worldbank.org/publicsector/anticorrupt/index.cfm.

[3]www.transparency.org/speeches/pe carter address.html.

corruption problem, whether corruption promotes or hampers the economic development[4] and how public organisations minimise the level of corruption. But researchers affiliated with in economic discipline have focused corruption problem in a broader spectrum. They made research to find out the level of corruption across various countries and its reasons or determinants.[5] Therefore, corruption whether it is public sector or private sector has become high priority to be researched upon by social scientists and economists especially.

The public sector corruption means misuse of public office for private benefits.[6] This definition has been used by various international organisations including Transparency International (TI) to measure the level of corruption. Transparency International has collected corruption data and formulated the Corruption Perceived Index (CPI) in 1995. According to CPI 1995 survey ranking, New Zealand was declared the least corrupt and Indonesia the most corrupt country of the world. From 1995 onward, the ranking of CPI for most corrupt countries shows Nigeria being the most corrupt country for the years 1996, 1997, 2000 and second in the line for remaining years up to 2003. Cameroon, Bangladesh, Haiti and Chad were at the top in the list of corrupt countries for the years (1998-1999), (2001-2003), (2004) and (2005) respectively.

The CPI survey 2006 and its almost all previous issues indicate that more or less all developing countries[7] are at the lower ebb except Chile, Jordon and Mauritius. Why is it so for at all times, almost all developing countries are having low in ranking (leading in corruption). Many researchers have tried to find out the reasons for corruption at world level; using cross sectional data for mixed countries (developed and developing), but the case of developing countries was not analysed separately. All this makes necessary to investigate the reasons/determinants of corruption among these countries and owing to that, we take up the case of only developing countries in this study.

In this study we divided the determinants of corruption in two parts: economic and non-economic determinants. The economic determinants include economic freedom, international integration (globalisation), education level, level of development and income distribution. In non-economic determinants, we include the socio-political and religious determinants in the form of democracy, press freedom and share of population having affiliation with particular religion. The results indicate that the contribution of economic factors is more conspicuous as compared to non-economic factors in reducing the level of corruption in developing countries.

The remaining part of this study is constructed as follows: second section of this paper presents the literature review and derivation of hypothesis. Third section is specified for methodology and model specification. Fourth section includes the definition of variables and data. Fifth section deals with empirical results and last section is focused to conclusion and policy implications.

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[4]Initially it was assumed that corruption certainly checked the economic and political development but some scholar argued that corruption might promote development. For more discussion, Theobald (1990).

[5]For detail, see Sandholtz and Koetzle (2000).

[6]This definition only concentrates on public sector corruption. The private sector corruption is also important but not addressed in this article. Private corruption most probably occurs when people misuse their offices (organisational position in a firm) for personal gains. For detail, see Seldadyo and Haan (2006).

[7]The list of countries included in this study are those which are grouped as developing nations by World Bank on the basis on region and availability of data for concerned country.

II. LITERATURE REVIEW AND HYPOTHESIS
DERIVATION

Corruption is an outcome of weak state administration that comes forward when an individual or organisation has monopoly power over a good or service, discretion over making decisions, limited or no accountability, and low level of income [Klitgaard (1998)]. The World Bank's definition of corruption commonly quoted in economic literature is 'the abuse of public office for private gain' [World Bank (1997)]. In developing countries, the level of corruption in public sector is much higher as compared to private sector. Many empirical studies have shown the relationship between corruption and its determinants. However, consensus is rarely found among researchers on the determinants of corruptions [Alt and Lassen (2003)]. In literature, it is found that a variable is significant in one regression but it becomes insignificant when some other variables are combined with it. It is also observed that in one period, corruption causes other factors and in second period the relation is other way round. Some variables have a positive relation with corruption like government involvement in the economy and income inequality, others have negative relation like level of education, level of development and economic freedom.

The government involvement means, how much government and its administrative machinery is having control over the economy. Under this, the government officials decide who will have access to country's economic resources and opportunities and how much? This shows that individual economic success does not depend on market forces rather on the ability to influence the public officials concerned. Therefore, the government institutions are important in determining the level of corruption. Besides government involvement in the market economy, the other variables which were investigated by various studies include economic integration, level of development, press freedom, democracy and share of population affiliated with a particular religion.

The studies carried out by Johnson, Kaufmann and Zoido-Lobaton (1998), Bonaglia, *et al.* (2001) and Fisman and Gatti (2002) found a positive correlation between corruption and the size of the unofficial economy. But some studies have contrary findings like Treisman (2000), Ali and Isse (2003). They found a positive impact of state intervention; i.e state intervention reduces the level of corruption. Above all, Lambsdorff (1999) found that government involvement neither increases nor decreases the level of corruption; the poor institutions are the main sources of corruption.

The hypothesis of negative correlation between corruption and income is supported by a large number of studies like Brown, *et al.* (2005), Kunicova and Rose-Ackerman (2005), Lederman, *et al.* (2005), Braun and Di Tella (2004), Chang and Golden (2004). But some studies also proved the positive relation between these variables which includes Braun and Di Tella (2004) and Frechette (2001). The positive relation between corruption and income distribution is supported by the findings of Paldam (2002) and Amanullah and Eatzaz (2007). A negative relation between trade openness/economic integration and level of corruption is strongly recommended by various studies like: Gurgur and Shah (2005), Brunetti and Weder (2003) and Knack and Azfar (2003) where as a positive relation between these two is also supported by the findings of Graeff and Mehlkop (2003) and Paldam (2001). The negative relation of corruption with democracy, press freedom and share of population affiliated with

particular religion is strongly recommended by various studies; like Kunicova and Rose-Ackerman (2005), Lederman, *et al.* (2005), Braun and Di Tella (2004), Brunetti and Weder (2003), Herzfeld and Weiss (2003). The positive relation between corruption and share of population affiliated with particular religion is also found in the studies of Paldam (2001) and La Porta, *et al.* (1999).

Almost all the studies discussed earlier used the cross sectional data for both developed as well as developing countries, not a single study exclusively focused the developing part of the world. In this study, we have put up the case of developing segment of the world by dividing the determinants of corruption into economic and non-economic determinants. For this we have derived the hypothesis in the sub-sequent paragraphs.

There is theoretical justification to say that economic freedom reduces the involvement of public offices/officials with the masses. This limited connection minimises the chances of indulging into corruption by politicians and public office bearers to grab a part of profit attached to the concessions allowed there-under. Empirically, a negative relation between corruption and economic freedom was shown by various studies like Paldam (2002). To test this relation only for developing countries we formulated the following hypothesis:

(*i*)   *The higher level of personal economic freedom* (*less political control over nation's economic resources and opportunities*) *will lessen the perceived level of corruption*

The residents of the open economies not only import goods, services and capital, but also exchange norms, information and ideas. This implies that international integration affects the political-economic framework of opportunities and cultural values of the society. A pretty free trade would remove the control of public officials over the administrative commodities like quota licenses and permits etc. Therefore, the process of globalisation would reduce the chances of exchanges of these products for private benefits. Ades and Di Tella (1999) indicates that openness is negatively associated with corruption. They used corruption data made by Business International (BI) and Institutes for Management Development (IMD). They concluded that higher degree of openness lead to reduction in corruption. This idea was also supported by Treisman (2000), Herzfeld and Weiss (2003) and they found a negative correlation between imports and corruption. But Tornell and Lane (1998) concluded that the higher export share of raw materials increases the opportunities of corruption. The positive relation between corruption and trade restriction was supported by Frechette (2001) and Knack and Azfar (2003). Naveed (2001) also tried to investigate the relationship between corruption and government regulations. He concluded that reduction in government regulations up to some threshold level will not decrease corruption; rather he suggested that for reduction in corruption, government regulations must be reduced well below the threshold level. We made an effort to investigate this relation with the help of following hypothesis for developing countries:

(*ii*)   *The degree of globalisation is inversely related to the corrupt norms*

The level of development has significant impact on the level of corruption. The countries at low level of development take little or no care for the vast majority of poor citizens. This situation has further been aggravated by the trickle-down paradigm of economic development. This scenario shows that in such economies an additional income

has a significant impact on the living conditions of the people. This means that the marginal value of money in poor economies is greater as compared to rich economies. Therefore, the level of economic development is commonly used to explain the level of corruption [Damania, *et al.* (2004); Persson, *et al.* (2003)]. Almost all studies have used the log of GDP per capita as a proxy variable to measure the level of development except Ades and Di Tella (1999); used the literacy rate (average educational levels). All studies concluded that a nation's wealth significantly explain the variations in the level of corruption. The empirical findings presented in the studies of Brown, *et al.* (2005), Kunicova and Rose-Ackerman (2005), Lederman, *et al.* (2005), Damania, *et al.* (2004 presented a negative and significant relationship between development and level of corruption. But the studies carried by Braun and Di Tella (2004) and Frechette (2001) using panel data showed the opposite results. On the basis of preceding discussion, following hypothesis has been framed:

(*iii*) *The levels of development are inversely related to the level of corruption*

In economic literature, income in-equality (distribution of income) is also considered to be one of the determinants of corruption. The theoretical relation between corruption and income inequality is derived from rent theory. Empirically Li, *et al.* (2000) found that the corruption affects the income distribution in an inverted U-shaped. It means lower income inequality attached with high as well as low level of corruption and it is high when the level of corruption is transitional. But Paldam (2002) also used Gini coefficient in estimation and concluded that it (Gini) explains a little of the variation in corruption whereas the studies of Park (2003) and Brown, *et al.* (2005) found no significant positive relation between higher income inequality and corruption. Amanullah and Eatzaz (2007) also investigated the relationship between corruption and distribution of income using panel data for seventy one countries. They concluded that corruption effects the distribution of income and also its growth. For this purpose we have derived the following hypothesis only for developing countries.

(*iv*) *The level of corruption is positively correlated with higher income in-equality.*

Along with economic factors, various non-economic factors like democracy, press freedom, religion have also been investigated by various researchers empirically. The democracy is a set of principles and practices that develop institutions of the country which ensure individual freedom. The basic elements of the democracy are: (a) the formulation of government: majority must be preferred (b) the existence of free and fair elections and (c) protection of minorities and respect for basic human rights [Laza Kekic (2007)]. This means, democracy includes institutional as well as cultural elements. In democratic societies, the public representatives derive their power from the public and use it (serve) for the interest of the public. Empirically the findings investigated by Kunicova and Rose-Ackerman (2005) and Lederman, *et al.* (2005) showed a negative relation between level of democracy and corruption. For developing countries, we are to test the hypothesis as below:

(*v*)   *The strength of democracy is negatively correlated to the corrupt behaviour.*

The freedom of speech and press in democratic societies enable the public to have access to information (directly or through their representatives), ask questions, demand inquiries and broadcast their discoveries; and in some countries, record their grievances directly to the accountability authorities. Empirically this issue was explored by Lederman, *et al.* (2005) and Brunetti and Weder (2003) found that higher degree of press freedom will lead to reduction in the level of corruption. To see the relationship between these two in developing countries, we have formulated the following hypothesis:

(*vi*)   *The freedom of press is negatively related to the level of corruption*

The religious variable is also examined in various studies to see the impact of other aspects of culture that can promote or push down the level of corruption. The studies carried out by Chang and Golden (2004) and Herzfeld and Weiss (2003) presented a negative relation between level of corruption and share of population having affiliation with particular religion. But some studies also showed a positive relation between these two such as Paldam (2001) and La Porta, *et al.* (1999). In developing countries, we tried to examine the impact of religion on the level of corruption in the following hypothesis:

(*vii*)   *The share of population observing religious tenets (any) is inversely related to the corrupt behaviour*

III. METHODOLOGY AND MODEL SPECIFICATION

We used cross sectional data for comparative analysis of 41 developing countries. The dependent variable is an objective measure of corruption which is based upon the target-group perceptions. The data on corruption (Corruption Perceived Index) has been constructed by Transparency International. It assigned scores to 163 nations for the year 2006, out of which we have used CPI for 41 developing countries.[8] This index is 'poll of polls', combining the results of different polls and surveys done by various independent institutions. These include Columbia University, Economist Intelligence Unit, Freedom House, Information International, International Institute for Management Development, Merchant International Group, Political and Economic Risk Consultancy, United Nations Economic Commission for Africa, World Economic Forum and World Markets Research Centre. Transparency International requires data collected by at least three organisations (mentioned above) which must be available in order to rank a country in the CPI. This exercise is replete with the loss of reliability to a certain degree.[9] The index score range is between 0 (totally corrupt) and 10 (all clean).[10] In this study, we have reversed the order so that higher score of CPI represents more corruption and lower shows less. The main advantages of this index are that; it permits cross country analysis and fulfills the requirements of the definition of corruption used in this study.

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[8]The selection of these countries is on the basis of availability of data for all concerned variables.
[9]http://en.wikipedia.org/wiki/Corruption_Perceptions_Index
[10]Corruption Perceived Index, Survey 2006.

We have divided the determinants of corruption into two groups; economic and non-economic determinants. The economic determinants include economic freedom, globalisation (international integration), education level, level of development and income distribution.

$$CORR = F\left(EF, GL, ED, DV, YD\right) \quad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (1)$$

    $CORR$ = Level of Perceived Corruption
        EF = Economic Freedom
        GL = Globalisation
        ED = Level of Education
        DV = Level of Development
        YD = Income Distribution.

All these explanatory variables are inversely related to the level of corruption. For estimation, following equation is used:

$$CORR = \beta_0 + \beta_1 EF + \beta_2 GL + \beta_3 ED + \beta_4 DV + \beta_5 YD + \acute{\epsilon} \qquad \dots \qquad \dots \qquad (2)$$

In non-economic determinants, we include the socio-political and religious factors in the form of democracy, press freedom and share of population having affiliation with religion (Muslim, Catholic, Protestant and Hinduism).

$$CORR = F\left(PF, DM, RG\right) \quad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (3)$$

    PF = Press freedom
    DM = Degree of democracy
    RD = Share of population affiliated with particular religion

We used the following equation for estimation.

$$CORR = \alpha_0 + \alpha_1 PF + \alpha_2 DM + \alpha_3 RG + \acute{\epsilon} \qquad \dots \qquad \dots \qquad \dots \qquad \dots \qquad (4)$$

IV. DEFINITION OF VARIABLES AND DATA

We used log of GDP per capita[11] to measure the level of development following Sandholtz and Gray (2003) and average educational level (literacy rate) following Ades and Di Tella (1999) as a proxy variables. We used Economic freedom Index (2007) to measure the economic freedom. This Index is constructed by the Heritage Foundation and Wall Street Journal for 157 countries. It is comprising of ten Economic Freedoms like; Business Freedom, Trade Freedom, Monetary Freedom, Freedom from Government, Fiscal Freedom, Property Rights, Investment Freedom, Financial Freedom, Freedom from Corruption and Labour Freedom. Each one has equal weights, i.e. 10. The index score varies between 0 and 100. The higher score of index indicates maximum economic freedom and vice versa.

Globalisation (international integration)[12] has been measured by the globalisation index. Sandholtz and Koetzle (2000) and Sandholtz and Gray (2003) like all others have

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[11]Data Source: (2005) *CIA World Fact Book* (GDP Per Capita).
[12]International integration includes both economic integration and social integration. For detail, see Sandholtz and Gray (2003).

used the sum of exports and imports (trade share) as percentage of GDP to measure the economic integration. But we used the globalisation index (2007 KOF Index of Globalisation) for this purpose because it includes economic freedom, social freedom and political freedom having weights of 36 percent, 38 percent and 26 percent respectively in the index.[13]

The remaining variables in economic model are income distribution (measured by united Nations Gini index) and level of education (Adult literacy rate). The data on Gini coefficient is collected from Wikipedia, the free encyclopedia: CIA Fact book. The score of Gini index varies between 0 and 100; 0 represents perfect economic equality and 100 perfect inequalities. We have reversed the ordered and 0 shows perfect inequality and 100 indicate perfect income equality.

In non-economic determinants, the press freedom is measured by the press freedom index (2006) constructed by Freedom House Index. This index includes three categories; Legal Environment (0-30), Political Environment (0-40) and Economics Environment (0-30). The index score range is 0 to 100, the lower value of index score indicates high degree of freedom (0 for most freedom) and vice versa. But for consistency purpose, we have inverted the press freedom index, so lower value of index score presents less freedom of press; with increased value of index the press freedom increases.

The level of democracy in each country is presented by the democracy index 2007, formulated by Laza Kekic for Economist Intelligence Unit. The Economist Intelligence Unit's democracy index includes five items: electoral process and pluralism, civil liberties, the functioning of government, political participation and political culture. This index presents the democratic status of 165 independent states. The list of fully democratic states only includes 28 countries, out of remaining 54 are labelled as Flawed Democracies, 55 are Authoritarian and a small number of 30 are given the name of Hybrid regimes.[14] The Economist Intelligence Unit's democracy index score varies between 0 and 10. The score rating for Full democracies is 8-10, for Flawed democracies is 6-7.9, for Hybrid regimes is 4-5.9 and for Authoritarian states are only 4. To see the effect of religion on cultural values, we added the religion as share of total population. All data on religion (Catholic, Protestants, Muslims and Hinduism) is obtained from CIA World's Facts Book index and Wikipedia, the free encyclopaedia.

V. EMPIRICAL FINDINGS

According to Transparency International Corruption Perceived Index 2006, the Iceland, Finland and New Zealand are the countries perceived to be the least corrupt with CPI score of 1/163. On the other side, the list of the most perceived corrupt counties along with CPI score includes Haiti (163/163), Guinea (160/163), Iraq (160/163) and Myanmar (160/163). The least corrupt countries are those which have higher degrees of democracy, higher level of economic freedom, press freedom and economic integration (globalisation). The most corrupt states are not having strong political norms, less involved in the world economy and their residents also have less economic freedom.

[13]For detail visit, http://globalization.kof.ethz.ch.
[14]For detail, see by Laza Kekic (2007).

For multivariate analysis, we estimated both equations; Equation (2) for economic determinants and Equation (4) for non-economic determinants. During estimation, we applied the White Heteroskedasticity Test to check the Heteroskedasticity problem which may arise due to cross sectional data. In some cases, we find significant F-Statistics that indicates the presence of Heteroskedasticity problem. To remove the problem we used two tests: White Heteroskedasticity-Consistent Standard and Newey-West HAC Standard Errors and Covariance. Therefore, the standard errors are adjusted for Heteroskedasticity and then on the basis of adjusted errors, we calculated the t-state presented in parenthesis. In other diagnostic tests we performed the Breusch-Godfrey Serial Correlation LM Test to check the model specification and serial autocorrelation. The value of F-stat indicates that models are correctly specified and do not suffer from autocorrelation.

Table 1

Economic Determinants of Corruption

Variables	Coefficients		
	(1)	(2)	(3)
Constant	17.29508	16.39065	16.80709
	(14.22315)*	(14.08914)*	(14.68123)*
Economic Freedom	–0.118280	–0.127319	–0.114926
	(–5.544028)*	(–6.240973)*	(–5.257994)*
Globalisation	–2.82867	–3.524399	–2.896591
	(–2.300529)**	(–2.935718)*	(–2.508442)*
Education Level	0.012073	0.008577	0.012237
	(2.221003)**	(1.652520)***	(2.591348)*
Economic Development	–0.274235	–	–0.313265
	(–2.207003)**	–	(–2.379312)**
Income Distribution	–0.011464	–0.015204	–
	(–1.026418)	(–1.362624)	–
R-Squared	0.686553	0.665759	0.677481
Adjusted R-Squared	0.641774	0.628621	0.641645
F-statistic	15.33229*	17.92669*	18.90532*

Note: Value in parenthesis is *t*-statistics. (*) Significant at 1 percent level (**) Significant at 5 percent level.

All coefficients are significant and have expected signs except education and income distribution. The coefficient of education is significant but has positive sign which indicates that level of education is positively correlated with corruption. In developing countries, the public sector is and has remained the main source of employment. In these countries corruption in public sector is very common phenomenon and induction in public sector's departments require education. Therefore, the level of corruption in these countries increases with the increase in education especially when it becomes the source of employment in the public sector. All other coefficients are having negative signs which indicate that increase in globalisation, economic freedom and economic development will lead to reduction in the level of corruption. The globalisation includes social globalisation, economic globalisation and political globalisation. All these affect the socio-cultural and political value of the country's residents that affect the corruption inversely. These findings are supported by the previous empirical findings of

Kunicova and Rose-Ackerman (2005), Gurgur and Shah (2005), Ali and Isse (2003), Knack and Azfar (2003), Persson, *et al.* (2003), Ades and Di Tella (1999), Treisman (2000), Paldam (2002-01). We also performed sensitivity analysis by dropping the variable one by one in the form of Equations (2) and (3). In sensitivity analysis, almost all those variables are significant that were significant in Equation (1). The coefficient of income distribution remained insignificant in all three equations but has negative sign. The value of adjusted R-square is 0.641 that indicates that 64 percent variations in the perceived level of corruption are explained by these economic factors for the countries included in this study sample. The other diagnostic test indicates that the performance of the models is satisfactory.

In non-economic model, we estimated the Equation (4) for non-economic factors like; press freedom, democracy and religion that affect the level of perceived corruption. We applied all relevant tests as in the previous model and results are presented in Table 2. All four regression equations show that all coefficients are in-significant except democracy in regression 3 and press freedom in regression 4. But the signs of all coefficients are negative that indicate that increase in press freedom, degree of democracy and share of population affiliated with particular religion will lead to decrease in the level of corruption.

All these results indicate that the socio-political and religious norms are very weak in developing countries and unable to affect the level of corruption. The residents of these countries are not true followers of religion concerned because all religions direct their followers to refrain away from corruption. In these countries, the contribution of religion in people's practical life is not overbearing. Therefore, the social values are not religion based which can affect the level of corruption. The coefficients of press freedom and democracy are significant with negative sign in Equations (c) and (d). This indicates that press freedom has exposed the corrupt character and made these socially condemnable. So increase in press freedom has reduced the level of corruption.

Table 2

Non-economic Determinants of Corruption

Variables	Coefficients			
	(a)	(b)	(c)	(d)
Constant	8.594213	7.882306	8.724311	7.654819
	(9.590526)*	(11.67089)*	(8.978222)*	(15.30974)*
Democracy	–0.212631	–0.085339	–0.320410	–
	(–0.869070)	(–0.476944)	(–2.21864)**	–
Press Freedom	–0.010415	–0.014571	–	–0.022992
	(–0.641898)	(–0.973776)	–	(–2.391359)**
Religion	–0.005606	–	–0.006453	0.409575
	(–1.273749)	–	(–1.202806)	(0.995887)
R-Squared	0.129453	0.115305	0.118090	0.132647
Adj. R-Squared	0.056908	0.068742	0.070419	0.086996
F-statistic	1.784439	2.476323***	2.477197***	2.905717*

Note: Value in parenthesis is *t*-statistics. (*) Significant at 1 percent level (**) Significant at 5 percent level (***) Significant at 10 percent level.

These empirical findings are supported by the previous findings of Lederman, *et al.* (2005) and Brunetti and Weder (2003). The value of R-square is 0.13, which shows that only 13 percent variation in the level of corruption is explained by non-economic factors. Almost same behaviour is predicted by remaining other three equations.

Table 3

Economic and Non-economic Determinants

Variables	Coefficients			
	(1)	(2)	(3)	(4)
Constant	17.41727	17.29508	16.77773	15.21472
	(12.98755)*	(14.22315)*	(11.16260)*	(11.00507)*
Economic Freedom	–0.123067	–0.118280	–0.125420	–
	(–5.320395)*	(–5.544028)*	(–4.730846)*	–
Economic	–0.253151	–0.274235	–0.267463	–0.512278
Development	(–1.967930)**	(–2.207003)**	(–2.007764)**	(–2.531375)*
Globalisation	–3.107829	–2.828671	–2.205957	–4.880471
	(–2.199264)**	(–2.300529)**	(–1.947688)**	(–2.253042)**
Literacy Rate	0.004193	0.012073	–	–
	(0.488609)	(2.221003)**	–	–
Democracy	0.097096	–	0.228593	–
	(1.015907)	–	(2.617439)*	–
Press Freedom	–0.003824	–	–0.008886	–0.024849
	(–0.412754)	–	(–1.118898)	(–2.403507)**
Income Inequality	–0.001364	–0.011464	–	–
	(–0.088670)	(–1.026418)	–	–
Religion	–0.004681	–	–	–0.009915
	(–1.200845)	–	–	(–2.985849)
R-Squared	0.710612	0.686553	0.688524	0.502216
Adj. R-Squared	0.635932	0.641774	0.644028	0.424438
F-statistic	9.515343*	15.33229*	15.47366*	6.456992*

Note: Value in parenthesis is *t*-statistics. (*) Significant at 1 percent level (**) Significant at 5 percent level.

Finally, we have combined the economic and non-economic determinants and their results are shown in Table 3. The results of combined model remained almost same as were in previous two models. The economic factor's contribution is more as compared to non-economic factors in reducing the level of corruption in developing countries. The value of R-square is high as compared to previous models which shows that the performance of the model is satisfactory.

VI. CONCLUSION AND POLICY IMPLICATIONS

In this study, we tried to investigate various determinants/reasons for perceived level of corruption in 41 developing countries. We considered the economic as well as non-economic factors that can affect the level of corruption. The list of pure economic determinants consists of economic freedom, globalisation, education, level of development and distribution of income. Among the non-economic determinants we include press freedom, degree of democracy and share of population affiliated with particular religion. The empirical findings show that increase in economic freedom,

globalisation and level of development have reduced the level of corruption in these countries. But the level of corruption in developing countries is increased with the increase in level of education. The income distribution has not significantly explained the variations in the level of corruption for the countries in the sample.

The estimated model for non-economic determinants indicates that jointly, these factors have not contributed well in reducing the level of corruption in these countries. But at individual level, some coefficients are significant and have negative sign according to the previous studies; like press freedom and democracy. Finally, we also tried to estimate both models jointly. The results are almost same as were in previous models.

This study concludes that economic determinants are more important as compared to non-economic determinants in reducing the perceived level of corruption in developing countries. The socio-cultural values are not framed by the religion in these countries. So the impact of religion on corruption is not significant. The democratic norms are also very weak or at initial stages in these countries so the role of democracy in reducing the level of corruption is not prominent; rather it is positively related to corruption in these countries up to some extent. Last but not the least, the economic determinants have negative relationship with the level of corruption in developing countries included in the sample of this study. On the basis of this study's findings, we suggest that: the government should focus on the economic determinants of corruption especially the policy of economic freedom (free market economy) to control the perceived level of corruption. The policy of globalisation must be supported because it has significantly contributed in reducing the level of public corruption. The government should also focus on distributive and social justice during the course of economic development. The policy of press liberalisation must be fully supported to reduce the perceived level of corruption. The striking finding of the study is that weaker role of religion in shaping the behaviour of society and resultantly the menace of controlling the corruption. This should be a cause of the concern for the individuals, governments and religious leaders as well.

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