

Does Education Decrease Corruption? Evidence from Sri Lanka

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Keywords: *Education; Corruption; Rule of law; Regulatory Quality*

Introduction

A substantial amount of literature shows that higher levels of education and literacy are more likely to decrease corruption, and such literature clearly establishes the relationship between education and corruption from a global perspective (Charron and Rothstein, 2016; Truex, 2011; Anduiza et al. 2013; Caillier 2010). Though Sri Lanka has a high rate of literacy and participation in school education, there is still a high degree of corruption in public and political institutions (Transparency International -TI, 2014, 2016; Trust Survey Report, 2015). Thus, the research problem is: “Why does education have a positive impact on decreasing corruption¹ in some countries, not in others, in this case Sri Lanka?” Against this backdrop, this paper seeks to explain why the level of education seems to have a low level of impact in decreasing corruption in Sri Lanka using TI data over of the period of 1996 to 2016.

Our argument and the contribution of this paper is that, at the individual level, education can only have a positive effect on corruption when institutional quality is sufficiently high (anti-corruption bodies, law enforcement agencies, courts, other public institutions) and they uphold the key principles of quality of government such as impartiality, fairness, rule of law and effectiveness. Otherwise, the effect of education on corruption becomes negligible. This calls into question the view that simply increasing

¹ The Transparency International measures the corruption perception index from 0-10, which means that lower the value or score, the higher the corruption; whereas the higher the value, the lower the corruption.

the years of schooling and literacy and time spent in school are less likely to have a positive impact on decreasing corruption.

There is enough evidence to believe from the Northern European countries along with Singapore, Hong Kong, New Zealand and Australia that the higher the level of education, the lower the level of corruption. Some empirical studies demonstrate that more educated people show less accepting attitudes across the range of corrupt behaviors (Truex, 2011). The evidence from Nepal shows that more educated Nepalese are generally less accepting of corrupt behavior (Truex, 2011). Further, it has been argued that better educated citizens are more likely to complain to government authorities about the misconduct of officials which helps increase the quality of government operations and reduces corruption which in turn has a positive effect on social trust (Charron and Rothstein, 2016:60).

Objective

Based on the above empirical and theoretical evidence, we pose a simple question in this paper: “How far and to what extent does the level of education impact on decreasing corruption, and how do educated, well-informed and critical citizens react to a political system with low-quality institutions, a system with high levels of corruption?”

Methodology

This study employs annual data of Sri Lanka over the period 1996–2016. The variables and corruption equation in this paper is in the spirit of Asongu (2012) and the equation is given below:

$$CPI_t = \pi_o + \pi_1 EDUI_t + \sum_{j=1}^5 \delta_j X_{jt} + u_t \quad (1)$$

where, EDUI:education index², X: set of other regressors such as GDP growth rate (GDPGR), consumer price index (INF), trade openness(OPEN),

²We followed Asghar *et al.* (2012) and Vijesandiran and Vinayagathan (2015) to calculate Education Index (EDUI), the formula is given by: $EDUI = \left[\frac{2}{3} * ALI \right] + \left[\frac{1}{3} * GEI \right]$,

where, $ALI = \frac{ALR-0}{100-0}$ and $GEI = \frac{CGER-0}{100-0}$

ALI denotes Adult Literacy Index, GEI represents Gross Enrolment Index and CGER is the Combined Gross Enrolment Rate.

regulatory quality(RQ) and rule of law (ROL), CPI: corruption perception index³, and u: white noise error term. As found in existing studies on corruption, we control for economic prosperity (in terms of GDPGR), trade openness and inflation. Data for CPI is collected from the Transparency International database; GDPGR, OPEN and INF were extracted from the World Bank’s World Development Indicator database, whereas ROL and RQ were obtained from the World Governance Indicator database.

Auto Regressive Distributed Lag (ARDL) co-integration bound testing procedure developed by Pesaran et al. (2001) was employed to investigate the equation (1). Once we confirmed the co-integrating relationship between the variables via bound testing technique, then we adapted error correction version of the ARDL model to examine the short run relationship and long run adjustment between the variables. ADF and PP unit root test methods were used to test the order of integration of variables. Akaike Information Criterion (AIC) was adapted to determine the optimal lag length of each series.

Results and Discussion

Both ADF and PP unit root test technique confirmed that GDPGR is I(0) while all other variables are I(1). AIC advocated the use of ARDL (1, 1, 0, 1, 1, 1, 1) model to estimate the parameter. Bound testing approach confirmed that there is a co-integrating relationship between the variables since we reject the null hypothesis of no cointegration as test statistics are greater than critical value at 5% level of Significance (See the Table 1 below).

Table 1: Results of Bounds Test

| F-Bounds Test | | Null Hypothesis: No levels relationship | | |
|----------------|-------|---|------|------|
| Test Statistic | Value | Signif. | I(0) | I(1) |
| F-statistic | 6.378 | 10% | 1.99 | 2.94 |
| k | 6 | 5% | 2.27 | 3.28 |
| | | 1% | 2.88 | 3.99 |

³The corruption perception index (CPI) is an aggregation of perceived corruption levels.

Since we confirmed the cointegrating relationship between the variables through the Bounds test, we then estimated the long run relationship among the variables via the ARDL model, and the results are given in Table 2 below.

Table 2: Results of Long run Relationship

| Variables | Coefficient |
|-----------|-------------------|
| EDUI | 14.330** (0.043) |
| GDPGR | 0.0589** (0.047) |
| INF | -0.0029 (0.734) |
| OPEN | 0.0191 (0.168) |
| ROL | -0.0357** (0.048) |
| RQ | 0.0382*** (0.006) |
| C | -16.623 (0.054) |

Note: Probability values are given in the parenthesis. *, **, *** indicate that variables are statistically significant at 10%, 5% and 1% level of significance respectively.

According to the results EDUI has a significant and positive impact on corruption, which implies that, in the case of Sri Lanka, when the level of education increases, it is more likely to increase the CPI, which is the indication for decreasing corruption. As expected by theory and most of the existing empirical studies (e.g., Charron and Rothstein, 2016; Truex, 2011; Anduiza et al. 2013; Caillier 2010), this finding demonstrates that a higher level of education helps to control corruption in Sri Lanka. Similarly, as theory and some of the existing empirical studies indicate, GDPGR tends to mitigate corruption in the long run (e.g., Asongu and Jellal, 2013; Asongu, 2013a, Asongu, 2013b). This study also indicates that although strict ROL principles are less likely to help reduce corruption, it is also evident that if the government upholds high quality in institutional regulation (RQ) it enables the government to control corruption. This shows that controlling corruption is closely linked with efficient and effective regulation of public institutions adhering to quality of government principles in which ROL plays a significant role. The message is very clear, that is, in developing countries, low regulatory quality opens up avenues for various forms of corruption and malpractices in public institutions than that of ROL.

However, inflation and trade openness do not have a statistically significant impact in decreasing corruption in the long run. Moreover, the selected ARDL model passes all the diagnostic testing such as normality of the error term, no heteroscedasticity, no serial correlation and no omitted variable(s) and also CUSUM test confirmed the stability of the selected model.

Table 3: Results of Short run Relationship and Long run Adjustment

| Variables | Lag 0 | Lag 1 | |
|----------------|-----------------|---------|---------|
| Δ CPI | | -0.1727 | (0.709) |
| Δ EDUI | 10.091 (0.618) | 4.6232 | (0.687) |
| Δ GDPGR | 0.0358 (0.343) | | |
| Δ INF | 0.0223 (0.470) | 0.0011 | (0.983) |
| Δ OPEN | -0.0055 (0.767) | 0.0305* | (0.064) |
| Δ ROL | -0.0086 (0.683) | -0.0076 | (0.861) |
| Δ RQ | 0.0114 (0.773) | 0.0218 | (0.151) |
| ECT(-1) | -0.0622 (0.183) | | |

Note: Probability values are given in the parenthesis. *, **, *** indicate that the variables are statistically significant at 10%, 5% and 1% level of significance respectively.

According to Table 3, as in theory and some of the existing empirical studies, EDUI, GDPGR, INF and RQ have a positive impact on CPI in the short run. That is, an increase in the level of education, GDP growth rate, inflation and high regulatory quality, are more likely to increase the corruption perception index which is the signal for low level of corruption. However, this impact is not statistically significant. Even though, ROL and OPEN affect the CPI negatively, the effect is not statistically significant. This could be because, when we take some measures to control corruption, it takes substantial time to provide results, and therefore, these regressors may not have a significant impact in controlling corruption in the short run.

Conclusion

The selected ARDL model passes the diagnostic test and the stability test. The results of the Wald test imply that there exists a co-integrating relationship between the variables under considered in this study. Thus, the higher the level of education, the more it supports fighting against corruption

in the long run, but not in the short run. GDPGR and RQ appear supportive in controlling corruption in the long run whereas GDPGR and RQ do not have a significant impact on corruption in the short run even though they are positively correlated with CPI as expected. OPEN and INF do not affect CPI significantly both in the long and short run. These findings imply the significance of maintaining high quality in regulating public institutions in line with the quality of government principles such as impartiality, fairness, rule of law and effectiveness. Further, it suggests the necessity of institutional reforms to ensure institutional quality at all levels, which is a precondition to decrease corruption, as the evidence shows in the case of less corrupt or non-corrupt countries. Further, this study addresses policy makers on how education and corruption are interrelated, and thereby advocates relevant policies and programs to control corruption through the educational system in the long run.

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