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# Determinants of Corruption in ASEAN Countries

**Li Li**
Business School, University of the Thai Chamber of Commerce, Thailand

## ABSTRACT

**This paper investigates the economic, institutional, and social determinants of corruption in ASEAN countries using unbalanced panel data over the period of 1996–2022. ASEAN has 10 countries, such as Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Corruption is measured by the Corruption Perception Index published by Transparency International. Determinants of corruption are expected to be foreign direct investment, gross domestic product per capita growth, inflation, political stability, regulatory quality, and internet usage, based on the literature review. The empirical results show that increasing foreign direct investment, political stability, and regulatory quality in ASEAN countries can reduce corruption significantly, whereas internet usage is found to have a slightly significant positive effect on corruption. However, gross domestic product per capita growth and inflation are not determinants of corruption in ASEAN countries.**

**Keywords:** Corruption, FDI, Political stability, Internet usage, Regulatory quality, ASEAN

## INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) was formed in 1967 to promote economic development. Currently, it has 10 country members, such as Brunei Darussalam (BRN), Cambodia (KHM), Indonesia (IDN), Lao People's Democratic Republic (LAO), Malaysia (MYS), Myanmar (MMR), the Philippines (PHL), Singapore (SGP), Thailand (THA), and Vietnam (VNM). As the economy grows, corruption has become a prolonged issue. Although ASEAN has established anti-corruption agencies, corruption hasn't been controlled effectively since then [1]. According to the Corruption Perception Index in year 2023 published by Transparency International, the average score of 10 ASEAN countries is approximately 40 out of 100, with Singapore scoring the highest at 83 and Myanmar scoring the lowest at 20. On 9 December 2023, the international anti-corruption day, a new regional anti-corruption network, the Southeast Asian Anti-Corruption Network, for civil society organizations was launched to facilitate the control of corruption.

Academically, researchers are getting more interested in studying corruption. It was found that out of the 631 corruption-related articles published in journals indexed in the Scopus database in 2000–2020, 85.6% were published in 2011–2020 [2]. However, among 10 ASEAN countries, only a limited number of countries were studied in different papers; for instance, 4 countries (IDN, MYS, THA, and VNM) were studied in [3], and 6 countries (KHM, IDN, MYS, PHL, THA, and VNM) were studied in [4]. Therefore, it is of great interest to study all 10 ASEAN countries together in this paper. By investigating the economic, institutional, and social determinants of corruption in 10 countries together, the result can show an overall picture of ASEAN as a whole

and hence provide recommendations to ASEAN anti-corruption agencies to control the corruption.

The rest of the paper is outlined as follows: the literature papers on corruption and its determinants are reviewed in section 2, the methodology is explained in section 3, section 4 describes the empirical results, and the conclusion is in section 5.

## LITERATURE REVIEW

The widely used indicator of corruption is the Corruption Perceptions Index (CPI) published annually by Transparency International since 1995. CPI is used as the dependent variable in papers such as [4–12]. Another index that has been employed in many research studies recently is the Control of Corruption provided by the World Bank, as seen in [4, 7, 13–17].

Determinants of corruption are normally classified into 3 categories: economic, institutional, and social factors. Economic factors include economic growth, measured by gross domestic product growth (GDPG) [5, 9] or gross domestic product per capita growth rate (GDPPCG) [3, 11]; openness, measured by the sum of export and import as a percentage of gross domestic product [7, 13, 15]; foreign direct investment (FDI) [6, 14]; and inflation [5, 6, 18, 19]. Government effectiveness [14], democracy index [4, 8, 13], rule of law [9, 14], political stability [8, 13, 20], and regulatory quality [3] are examples of institutional factors. Common social factors are education [3, 6, 18, 21], urbanization [6], female participation rate in labor force [6, 10], and internet usage [3, 22].

In terms of methodology, a popular approach is to use cross-sectional data analysis, instances of this can be found in [8, 10, 13, 18, 19]. Nevertheless, this approach requires a high number of countries in the data set. Another commonly used approach is to use the panel data to examine the determinants of corruption, such as [3, 6, 7, 11, 14, 21]. Due to the small number of countries, panel data analysis is preferred for the research of 10 ASEAN countries in this paper.

## METHODOLOGY

This study attempts to investigate the economic, institutional, and social factors that determine corruption in ASEAN countries of BRN, KHM, IDN, LAO, MYS, MMR, PHL, SGP, THA, and VNM between 1996 and 2022. The period is chosen because of the availability of data for each variable. Corruption is measured by the Corruption Perceptions Index (CPI) developed by Transparency International. The original CPI is scored from 0 (most corrupt) to 100 (very clean). In accordance with [6], this study rescaled the original CPI by subtracting the country score from 100 and expressing the result in natural logarithms, so that higher scores indicate more corruption, and low scores indicate less corruption.

Due to the availability of data and substantial correlations between some of the variables, the following variables have selected for this paper: the economic factors are measured by FDI, GDPPCG, and inflation (INF); the institutional determinants are proxied by political stability (POLSTA) and regulatory quality (REGQUA); and the social determinant of corruption is measured by internet usage (INTNET).

Transparency International's website is the source of the annual CPI score data. And the annual data of FDI, GDPPCG, INF, POLSTA, REGQUA, and INTNET are collected from the World Development Indicators, webpage of the World Bank. Since some countries' data are not available in certain years, there are 202 country-year observations collected in total. The generalized least squares method will be used to evaluate this unbalanced panel data; model (1) is as follows:

$$CPI_{it} = a + b_1FDI_{it} + b_2GDPPCG_{it} + b_3INF_{it} + b_4POLSTA_{it} + b_5REGQUA_{it} + b_6INTNET_{it} + e \quad (1)$$

where CPI is the rescaled corruption perception index, FDI is foreign direct investment, GDPPCG is gross domestic product per capita growth, INF is the inflation rate, POLSTA is political stability, REGQUA is regulatory quality, and INTNET is internet usage.

## EMPIRICAL RESULTS

### Descriptive Statistics

Descriptive statistics for the dependent and independent variables are displayed in Table 1. The dependent variable CPI has a mean value of 3.98, which is relatively close to the highest score of 4.47 in Myanmar. This implies that the average level of corruption among ASEAN countries is relatively high. Singapore has the lowest level of corruption at 1.79. FDI accounts for 5.81 percent of GDP on average with a maximum of 32.69 percent in Singapore and a minimum of negative 2.76 percent in Indonesia. For economic growth, the average PDPPC growth rate is 3.77 percent.

Once more, Singapore has the highest growth rate of 13.52 percent, while Indonesia has the lowest growth rate of negative 14.48 percent. The average rate of inflation is 4.63 percent across ASEAN countries. Vietnam has the lowest inflation, at negative 1.71 percent, while Indonesia has the worst, at 58.45 percent. POLSTA has an average of negative 0.17 indicating the low level of political stability in ASEAN countries throughout the study period. REGQUA has an average of only 0.01 implying the poor quality of regulatory policies promoting the private sector to grow. SGP has the highest level of political stability and regulatory quality. Indonesia has the least political stability and Myanmar has the worst regulatory quality. The result indicates that, on average, 0.35 percent of population have accessed the internet, with MYS having the highest percentage at 97 percent.

**Table 1: Descriptive statistics of CPI and its determinants**

| | Mean | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|
| CPI | 3.98 | 0.64 | 1.79(SGP) | 4.47(MMR) |
| FDI (%) | 5.81 | 6.41 | -2.76(IDN) | 32.69(SGP) |
| GDPPCG(%) | 3.77 | 3.92 | -14.48(IDN) | 13.52(SGP) |
| INF (%) | 4.63 | 6.41 | -1.71(VNM) | 58.45(IDN) |
| POLSTA | -0.17 | 0.90 | -2.10(IDN) | 1.60(SGP) |
| REGQUA | 0.01 | 1.00 | -2.35(MMR) | 2.25(SGP) |
| INTNET | 0.35 | 0.30 | 0.00(VNM) | 0.97(MYS) |

Note: CPI is the rescaled corruption perception index, FDI is foreign direct investment, GDPPCG is gross domestic product per capita growth, INF is the inflation rate, POLSTA is political stability, REGQUA is regulatory quality, and INTNET is internet usage.


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**Table 2: Correlation matrix of all independent variables**

| | FDI (%) | GDPPCG (%) | INF (%) | POLSTA | REGQUA |
|---|---|---|---|---|---|
| GDPPCG (%) | 0.096 | | | | |
| INF (%) | -0.158 | 0.071 | | | |
| POLSTA | 0.623 | -0.128 | -0.311 | | |
| REGQUA | 0.546 | -0.372 | -0.405 | 0.618 | |
| INTNET | 0.383 | -0.271 | -0.380 | 0.577 | 0.636 |

Note: FDI is foreign direct investment, GDPPCG is gross domestic product per capita growth, INF is the inflation rate, POLSTA is political stability, REGQUA is regulatory quality, and INTNET is internet usage.

The correlations between each pair of independent variables are listed in Table 2. It is evident that all correlations are low at the allowable threshold, indicating that there will be no multicollinearity problem in the regression. REGQUA and INENET have the highest correlation coefficient (0.636), which will be taken into account in the regression.

## Regression Results

The generalized least squares regression results are presented in Table3. It is discovered that FDI is negatively associated with corruption at the 1 percent significance level. A country with higher levels of FDI inflow will also have lower levels of corruption. This outcome is in line with [4]. It has also been demonstrated that POLSTA has a negative effect on corruption at the 1 percent significance level. A lower amount of corruption would follow from a more stable political regime. This result is consistent with [8] and [20]. According to the regression finding, which is inconsistent with [3], the impact of REGQUA on corruption is negative at the 1 percent significant level. This suggests that corruption is less common the better regulatory quality in ASEAN countries. Only at the 10% significance level is INTNET positively correlated with corruption when the REGQUA is factored into the regression. This finding is in line with the finding in [3], which states that a country's level of corruption would increase with the percentage of its population that uses the internet. In contrast to [3] and [9], GDPPCG is not significantly associated with corruption, implying that economic growth is not the determinant of corruption in ASEAN countries. In line with [5] and [6], which state that inflation is not a factor in determining corruption in ASEAN nations, INF is not significantly correlated with corruption.

**Table 3: Results of generalized least squares analysis**

| | Dependent variable | |
|---|---|---|
| | CPI | CPI |
| C | 4.046*** | 3.999*** |
| | (0.000) | (0.000) |
| FDI | -0.014*** | -0.010*** |
| | (0.000) | (0.000) |
| GDPPCG | 0.003 | 0.002 |
| | (0.306) | (0.461) |
| INF | 0.001 | -0.001 |
| | (0.685) | (0.704) |
| POLSTA | -0.248*** | -0.126*** |
| | (0.000) | (0.000) |

| | | |
|---|---|---|
| INTNET | -0.070 | 0.079* |
| | (0.183) | (0.067) |
| REGQUA | | -0.275*** |
| | | (0.000) |
| | | |
| Adjusted R-squared | 0.951 | 0.967 |
| Durbin-Watson stat | 1.658 | 1.632 |
| Prob (F-statistic) | 0.000 | 0.000 |

Note: CPI is the rescaled corruption perception index, FDI is foreign direct investment, GDPPCG is gross domestic product per capita growth, INF is the inflation rate, POLSTA is political stability, REGQUA is regulatory quality, and INTNET is internet usage. p-values are in parentheses. ***, **, and * indicate significance at the level of 1%, 5%, and 10%, respectively.

## CONCLUSION

This paper studies the factors that contribute to corruption in 10 ASEAN countries over the period of 1996-2022. Three categories of determinants are examined. FDI, PDPPCG, and INF are the economic determinants; POLSTA and REGQUA are the institutional factors; and INTNET is the social variable. An unbalanced panel data set of 202 observations is analyzed using the generalized least squares method. The findings indicate that FDI, POLSTA, and REGQUA are negatively associated with corruption at the 1 percent significance level, INTNET is positively correlated with corruption at the 10 percent significant level, and GDPPCG and INF are not significant at all in all statistical analyses.

The results suggest that economic, institutional, and social factors could be determinants of corruption in ASEAN countries. Economically, a country with higher levels of foreign direct investment (FDI) will likely have lower levels of corruption since external parties will demand greater transparency and scrutiny. Institutionally, a country's level of corruption would decline with increased political stability. Based on this statistical conclusion, some ASEAN countries have historically struggled with political instability, which may account for the average low score of the Corruption Perception Index. Further, improving the quality of regulations may contribute to a country’s lower degree of corruption. Socially, the outcome suggests that a greater proportion of population utilizing the internet will lead to a higher level of corruption, potentially because information technology might enable misconduct and facilitate corruption. In conclusion, the statistical results of this paper support the following recommendations to the anti-corruption agencies in ASEAN countries to control the corruption: keep up the promotion of FDI, uphold and strengthen political stability, enhance regulatory quality, and monitor inappropriate internet usage.

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