Corruption Perceptions and Stock Market Performance: Evidence from Bursa Malaysia

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Abstract: Studying the relationship between corruption and economic factors, particularly the perception of corruption upon capital market developments has attracted worldwide attention among economists and researchers in recent years. The purpose of this paper is to investigate how ranking in corruption index may exert some significant influence on Malaysian stock market, that is, Bursa Malaysia. Extracting time series data from Transparency International's corruption index and Malaysian stock market barometer from 1995 through 2018, we discover some degree of dependency between this Corruption Perception Index (CPI) and Kuala Lumpur Composite Index (KLCI). This study employs Ordinary Least Square (OLS) Regression as an estimation method and the empirical findings are somewhat consistent with the previous literature on similar subject matter

Keywords: Transparency International, Corruption Perceptions Index, KLCI

I. INTRODUCTION

A myriad of studies related to stock market developments have received a lot of attention mainly in the developing markets such as Asia, South America and Middle East where these countries contribute substantially in the global market growth. Recent attention to stock market development now turns towards examining the impact of corruption (Ng, 2006; Pinheiro, 2010; Bolgorian, 2012; Jain *et al.* , 2012; Lau *et al.* ,2013; Shahbaz *et al.* ,2013). However, there is little attention given to the emerging markets, particularly in the South East Asia region. There is no doubt that Malaysian stock market is one of the richest and most vibrant capital markets in South East Asia.

Many definitions are placed for corruption. The Enterprise Survey of World Bank defines corruption as "the percentage of informal payment to public official" and Jain (2002) describes corruption as "an act in which power of public office is used for personal gain in a manner that contravenes the rule of the game"

It is difficult to measure corruption perceptions directly, but some reputable organizations have provided corruption indices based on different criteria. Ng (2006) suggests a number of credible indices, namely Economic Intelligence Unit, International Country Risk and Transparency International Corruption Perception Index (CPI) as worthy source of references. One of the most renowned indices is the Corruption Perception Index (CPI) published by Transparency International (TI) since 1995, an international non-governmental organization based in Berlin, Germany. Founded in 1993, TI's main objective is to combat global corruption with civil societal anti-corruption measures and to prevent criminal activities arising from corruption practices in the public sectors. Freckleton *et al.* (2011) define this CPI as abuse of public power for private and personal benefit. It is an aggregate indicator that classifies countries based upon the degree to which corruption is perceived to exist among politicians and public authorities.

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The primary objective of this study is to examine the impact of corruption perception on stock market performance of Bursa Malaysia. We explore the statistical correlation between TI corruption perception index and the performance of Malaysian stock market; employing Kuala Lumpur Composite Index (KLCI) as a proxy for the stock market barometer. The study covers a sample period from 1995 till 2018. Specifically, the objective of this study is two-fold. Firstly, this study investigates the impact of corruption on the performance of Bursa Malaysia. Secondly, this study intends to challenge the view that perceptions-based measure of corruption is not good enough as a measure of corruption. Perception-based measures have been criticized on argumentative and empirical grounds, causing some researchers to resort to other measures that fit better into their econometric models.

II. LITERATURE REVIEW

Theoretical literatures on perception of corruption and stock market are numerous and varied. However other empirical studies locally and internationally can be referred to as the basis for this study. The underlying theories for this study are the two important asset pricing theories or fondly known as the market theories. Firstly, the classical *Capital Asset Pricing Model (CAPM)* which states that return of stock are affected by the systematic risk or the market risk as explained by Reilly and Brown (2012). Secondly, the *Arbitrage Pricing Theory (APT)* which is developed by Stephen Ross in 1976 suggesting that stock return are influenced by multiple factors, especially economic variables. Since then, there have been numerous studies supporting and debating the merits of both CAPM and APT which will be discussed later on.

Bolgorian (2011) conducts a panel data study and analyses a data set of corruption perceptions and stock market development measure (as measured by market capitalization and total value of share trading) for 46 countries around the world for the period 2007–2009. Using a quantitative approach for investigating the dependence of the Corruption Perception Index (CPI) on stock market development, his study reveals that countries with higher relative stock market development are less corrupt, and the power-law relation between level of corruption and stock market development is significant at the 5% level.

Abdul Qadir and Yaroson (2013) highlight the role of selected macroeconomic variables and corruption in explaining stock market development in Nigeria for the period 1998–2011. Employing the Augmented Dickey Fuller (ADF) unit root test to analyze the stationary properties of the variables adopted in the study, they find that corruption has significant impact on the development of the stock market; the turnover ratio as a share of GDP which is used to test the market liquidity, has a negative impact on the stock market; and the real interest rate, foreign direct investment and value of shares traded to be significant in determining stock market development in Nigeria.

Cherif and Gazadar (2010) examine the relationship between institutional indicators and stock market development using International Country Risk Guide (ICRG) to proxy for corruption. Using data from 14 Middle East and North Africa (MENA) countries for the period from 1990 to 2007 and applying panel data and instrumental variable methods, they find there is a negative relationship between corruption and stock market development.

Yartey (2010) examines the impact of corruption as a part of institutional determinant of stock market development using a panel data of 42 emerging economies for the period 1990 to 2004. He finds there is a negative relationship between corruption and stock market development. He also proves that macroeconomic factors such as income level, gross domestic investment, banking sector development, private capital flows and stock market liquidity are important determinants of stock market development in emerging market countries.

Shahbaz *et al.* (2013) examine the long run relationship between financial development and corruption including economic growth in Pakistan using ARDL bounds testing approach. Applying ARDL cointegration tests and VECM granger causality method to examine the direction of causality between the variables for the period of 1987–2009, they discover an interesting finding in that a rise in corruption has a positive significant impact on Pakistan's financial market developments.

III. DATA SET & METHODOLOGY

Time series data from Transparency International's Corruption Perception Index (CPI) is used to measure the perceived corruption in the public sector from 1995 till 2018 for Malaysia. CPI is compiled by Transparency International and the survey involves feedbacks from businessmen, country experts, international institutions and local populace on their perceived levels of public sector corruption in Malaysia.

For the purpose of the study, the model incorporates the FTSE Bursa Malaysia KLCI, also known as the FBM KLCI. It is a capitalization-weighted stock market index, composed of the 30 largest companies listed at Bursa Malaysia. Listed companies are ranked by their market capitalization as this is part of the eligibility requirements set forth by FTSE Bursa Malaysia Index Ground Rules. The KLCI is jointly operated by FTSE and Bursa Malaysia.

Ordinary Least Square (OLS) Regression and Pearson correlation functions are deployed to investigate the relationship between KLCI and TI's corruption perception index for Malaysia.

3.1 Dependent and Independent Variables

In this study, The Kuala Lumpur Composite Index (KLCI) is assigned as the dependent variable or the variable of interest. The descriptive statistics for the study period is also presented and analyzed. Meanwhile, the TI's Corruption Perception Index compiled by the German NGO based in Berlin is set as the explanatory variable.

3.2 Pearson Correlation and Estimated Model

The Pearson correlation analysis is applied to investigate the degree of association between the KLCI and TI's Corruption Perception Index (CPI). To determine variation among the dataset and validity of the model, both ANOVA and diagnostics tests are carried out to ascertain if the model is experiencing any collinearity issues. Using simple linear regression approach, this study attempts to measure the degree of relationship between KLCI and CPI. Mathematically, the estimated model expressed as follows:

$$KLCI_t = \alpha + \beta TI_t + \varepsilon_t \quad (t=1,2,\ldots N=T)$$

Where,

α Intercept of the regression model

$KLCI_t$ Kuala Lumpur Composite Index at time t

CPI_t Corruption Perception Index at time t.

ε_t Error term (assumed to be normally distributed)

IV. EMPIRICAL RESULTS

This study adopts an econometric time series analysis involving 25 data points (yearly data). This section provides the descriptive statistics as well as the empirical results from Pearson correlation function, OLS regression analysis and the model's diagnostic tests.

4.1 Descriptive Statistics and Pearson Correlation Analysis

Table 1 presents the descriptive statistics for this study from 1995 through 2018.

Table 1 – Descriptive Statistics of the Variables (1995 – 2018)

Variable	Mean	Std. Deviation	Max	Min
KLCI	1212.69	441.65	1866.96	586.13
CPI	49.604	2.77	53.20	43.00

Based upon Table 1, an observation of 25 yearly data clearly indicates the mean KLCI stands slightly above 1200 level while the mean CPI is seen relatively moderate below 50.00 point level. It is worthy to note that best performance of KLCI over this observed period was registered at 1866.96 level in 2013.

The results from Pearson correlation test is presented in Table 2 below. It is evident that there is a negative correlation between KLCI and CPI implying that the two variables are moving in the opposite direction. However, the p-value indicates that this correlation coefficient is not statistically significant.

Table 2 – Pearson Correlation Test (1995 – 2018)

Ho: Rho = 0.00 (p-value)

Variable	KLCI	CPI
KLCI	1.00	-0.2788 (0.1770)
CPI	-0.2788 (0.1770)	1.00

4.2 OLS Regression Analysis

Analysis of variance (ANOVA) is a preliminary test which examines the estimated model's goodness of fit. The test results in Table 3 clearly show insignificant F value which implies that the model is not statistically credible. Furthermore, the adjusted R-square is extremely low at only 3.7%.

Table 3 – Analysis of Variance (ANOVA)

Source	DF	Sum of Squares	F value	Pr > F	R^2	Adj-R^2
Model	1	364083	1.94	0.1770	0.0778	0.0377
Error	23	4317249				
Corrected Total	24	4681333				

The expected relationship between KLCI and CPI turns out to be unfavourable as there is an absence of statistical significance between them. Looking at the high p-value of CPI, we cannot reject the null hypothesis at 5% level. Even though the correlation coefficient and the parameter estimate of CPI appear to take in negative value, these results have no statistical bearing. From this 25-year period of observation, it is clear that the Malaysian stock market will not be influenced by report of corruptions or financial impropriety within the government of the day. When as early as 2017 news of 1MDB financial scandal began to hit the mainstream media in and out of Malaysia, there were some initial negative market reactions but it was not prolonged. Suffice it to say that the TI report alone could not influence the stock market sentiment as there are other relevant factors that must be factored in.

Table 4 – Parameter Estimates

Dependent Variable: KLCI

Variable	DF	Parameter Estimate	Standard Error	t value	Pr > t
Intercept	1	3418.1946	1585.97	2.16	0.0418
CPI	1	-44.4622	31.92	-1.39	0.1770

From the diagnostic perspective, the estimated model seems to have some autocorrelation problem. The error terms are found to be correlated to one another and this flaw mitigates the validity and credibility of our estimated model.

Table 5 – Regression Procedure

Dependent Variable: KLCI

Durbin-Watson D	0.414
Pr < DW	<0.0001
Pr > DW	1.0000
No. Observation	25
1st Order Autocorrelation	0.76

The study presents a rather weak model in that the performance of Bursa Malaysia is a function of some other relevant variables that researchers must carefully look into. The firm-specifics and market-specifics are some of the good contributory factors that must be considered when analysing the stock market pricing models. A fair assessment of the study may suggest that Malaysian stock market involves huge investment funds from local and international traders. All of them are focusing on one primary objective – maximizing their portfolios' returns. The volume and value of transactions in emerging Asian markets have increased significantly over the last 25 years. However, it would be ironic to see if these fund managers would accept corrupt practices as part of the business process in this country. Our results are consistent with the study by Aljazaerli *et.al* (2016) but contradict the work of Ayaydin & Baltaci (2013).

V. CONCLUSION

The results of this study will continue to attract the attention of future researchers into investigating the influence of corruption perception upon stock market development not only in developed countries but also some emerging economies. It intended to challenge the conventional thinking that somehow corrupt practices could exert some unexpected findings in those stock markets.

This study has shed some light that the corruption perception could exert some significant negative effect on KLCI which needs further investigations. For any developing country like Malaysia, an improvement in its corruption perception index signals market confidence and best practices. This positive and desirable approach will be supported by the government of the day with the clear mission to combat any form of corruptions at all levels.

In light of mounting cases of corruption scandals in Asia in particular, a behavioural finance approach is deemed desirable in terms of practicality, methods and scope of investigation. Combining corruption perception with other macroeconomic variables will continue to be relevant and help contribute to the body of new knowledge. It is hoped that future studies will into this suggestion so that better understanding can be developed and presented to the investment community worldwide.

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