PalArch's Journal of Archaeology of Egypt / Egyptology

THE IMPACT OF INCREASING POLITICAL INSTABILITY ON ECONOMIC GROWTH AND CO2 EMISSION IN THAILAND

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Saeed Ahmad Sabir. The Impact Of Increasing Political Instability On Economic Growth And Co2 Emission In Thailand-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 19(4), 904-919. ISSN 1567-214x

Keywords: Thailand, CO2, Emerging Economy, Energy, Economic GROWTH

ABSTRACT

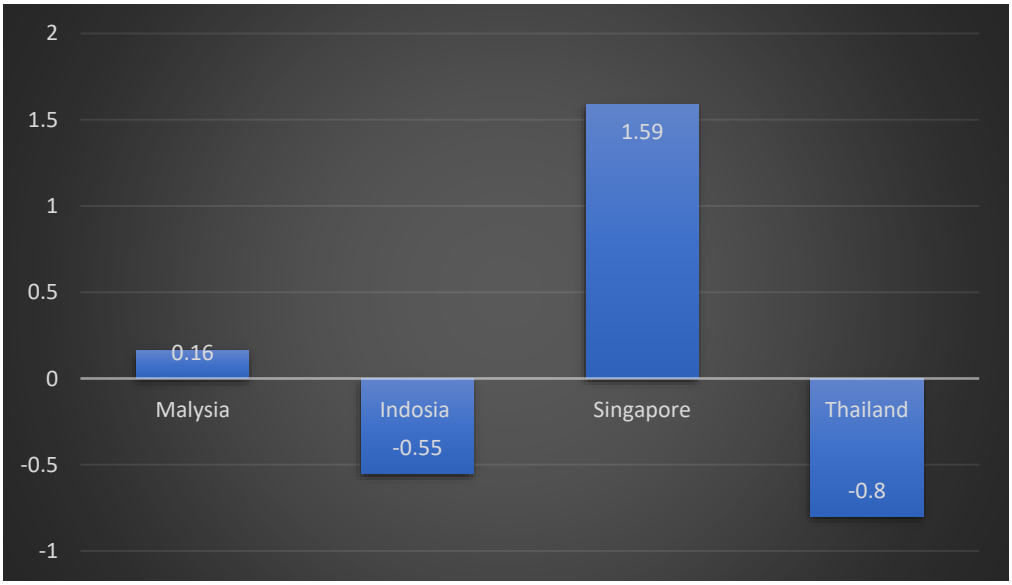
The prime objective of the current study is to investigate the impact of political instability and macroeconomic growth on the CO2 emission in Thailand. In addition to that the impact of CO2 emission and political instability on the real GDP is also observed. Thailand is the Asean country with highest value of political instability. Political instability also reduces reliability in forecasting that could result in minimal short-term policy making. Remarkable regional differences can be measured through political instability index by cabinet changes. The political instability index determines how many times a premier change in a year, in addition to this new staff is also replaced with 50% of the members of the cabinet. The ARDL is used on the data collected over the period of 27 years 1987 to 2014. The findings of the study have provided support to the proposed results. Numerous studies have been conducted and various theories have been illustrated, approved or rejected, consequently. The present study focuses upon the governments' political instability, and which type of government is considerably more fragile or more stable. The study will be helpful for policymakers, legislators and researchers and understanding relationship between political instability, CO2 emission, Trade, energy consumption, and economic growth in an merging economy like Thailand.

INTRODUCTION

Jenmana et al. (2018) defined the term political instability as "the tendency of experiencing a change in executive through unconstitutional or constitutional means. Greater the political instability or unrest the more will be the chances of change in government in a specific time period. According to the economists, political instability is the sum of all changes and fluctuations during a political situation that causes a damage to the society's economic functioning (Okafor 2017),Political instability can also create unfavorable environment for the

officials and the policy makers, resulting in the short term decisions and reactions, than the long term decision making and planning.

In the early 1990s, a powerful new concept of political economic growth movement has emerged. Studies conducted during that time attempted to determine the significance of political stability on the growth of economy. This topic has gained popularity among the conventional economists. The geopolitical changes i.e. partition of Soviet Union and economic and social redevelopment of Eastern European countries have motivated and increased the interest of researchers in these areas. Researchers in a very short time have found out that this concept involves bottleneck regarding fundamental reasoning which arise from several other things. (Begović et al. 2017),observed this conflict in a study involving empirical analyses which assessed the correlation among economic progression and different political regimes. Following results are found from the study: i) Eight studies have supported the democratic regime as a suitable environment or situation for economic development, ii) Eight researches have emphasized the autocracies contribution upon economic growth, and iii) the remaining studies could not find any considerable contrast among different political governments and their impact over the growth of economic development.



Since 1990s, the debate on the political power and its relation with economic growth has been frequently argued and studied by the researchers and economists. The earlier studies (Root 2016),concerning political instability and its relation to economic development and new political economy were conducted in late 1980s. The mainstream of researches and studies in this area were conducted in (Ciarli et al. 2018) that have significantly contributed through their studies. A big sample of 113 countries for the time period 1950-1982 was selected and suggested that high levels of political uncertainty results in sluggish economic growth. Similar approach have been used by (Farla et al. 2016),by taking a data for 116 countries for the years 1950-1982. Similar findings were reported by this study i.e. causal relationship exists among political instability and sluggish economic growth. Moreover recent (Nurudeen

et al. 2015) have employed a cross-sectional data for 169 economies, taking Pakistan as a main subject in their studies. The economic growth in Thailand is volatile as it is evident from the table 1 and figure 2.

Table 1: Comparison of Economic Growth between Thailand and Asean

Years	Thailand	Asean
2011	7.514	8.0018
2012	0.84	5.0398
2013	7.243	5.884
2014	2.687	4.7288
2015	0.094	3.857
2016	3.02	4.3098
2017	3.913	5.0364

To observe the correlation among economic growth and political instability as well as to consider its effects, the appropriate measurement method must be applied. Political instability is difficult to estimate as it involves number of variables. Thus, considering all variables and factors simultaneously is quite challenging. A method for measuring political instability was suggested by (Muramatsu & Krauss 2018), he measured the influence of political instability on economic growth. Factor analysis was employed by classifying political stability into civil protests, aggression motivated by political issues, political instability of the governing political party, and internal instability and volatility in the governments' structure. He focused upon the unstable government representatives and observe their reliability, with changed or unchanged political cabinet. He suggested the need for more general index that could measure political instability. Several other researchers have employed a multi-dimensional structure similar by observing a single dimension and examine its effects on this area. Similar terminology and methodology were used in these studies (Grochová & Kouba 2011).Therefore, conventional studies have concluded that correlation exists among non-progressive economies and political uncertainty.

LITERATURE REVIEW

Political instability and Economic growth

An association among political uncertainty and economic growth has been confirmed by numerous research studies. Some studies have found no causal relation among these measurement concepts and proposed that other factors may have involved that influence economic development and political stability. Although, worthy and arguable discussions have been contributed by these papers but could not reject the correlation among these two factors, as the relation exists statistically and logically between the two variables.

From the global viewpoint, the effects of political stability on the country's economy are surprisingly destructive. Therefore, (Shahzad et al. 2017),suggested that uncertainty is found to be unfavorable for the country's economic performance. Globally, political scientists have been seeking to examine the correlation among economic growth and political instability, by

looking for ways to efficiently measure this association. Therefore, it must be stated that there exists a causal or two-way relation among the two variables i.e. change in any side brings change on the other side. Thus, economists have shown more interest in policy and political instability as well its adverse effects on country's economic situation.

Large number of research studies are also conducted to observe the destructive effects of political instability on economic growth, using variables such as GDP growth, private investment, and inflation. Several researches (Nurudeen et al. 2015), reported a negative two-way correlation between economic growth and political instability. Other researchers (Ahmad & Hall 2017) , reassessed this relationship on the basis of the fundamental literature, and presented a strong theoretical association among economic growth and political instability.

Estimating several concepts simultaneously is quite challenging and can give statistically unreliable results. Studies that observed the correlation among economic changes and uncertainty have been the focus of attention for the critics. One of the significant study as a critics was conducted by (Bickel & Doksum 2015), The study suggested that some unavoidable errors generally exists in the estimation of variables that were involved in the empirical analyses of political instability and economic growth. Thus, creating doubts on the reliability and validity of previous researches. In addition to the estimation errors, other critics have pointed out and presented statistical proofs and evidences that a negative association among these variables do not necessarily indicates the existence of a two-way relationship (Brandl & Ibsen 2017).

A government having uncertain future accept poor and insignificant non-economic and economic decisions for creating a worsening circumstances for the new regime (Sørensen 2016). They have also agreed with the viewpoint that political instability causes undesirable economic situation. (Farla et al. 2016), have undertaken the direct approach, for observing the effects of political instability on the investment and capital flow. The results depicted that changes in governments' productive activities and tax policies increases the possibility of disintegration of government. Domestic production takes off with the replacement of internal investment with the consumption and capital flow.

Political system of a country can be easily collapsed due to weak government regime (Acemoglu & Restrepo 2018). The likelihood of a change and revolution seems to be higher as the public tends to be more interested in becoming a part of revolution, instead of focusing upon country's financial growth and productivity. (Acemoglu & Restrepo 2018) suggested that powerful political institution can reduces the likelihood of revolutionary activities, and drive society to focus more on economic growth and market development. This is a logical reasoning that confirms the unavoidable correlation among strong political regime and economy, using social behavior and non-economic analysis. Increased tendency of governments' rent-seeking policies was studied as an effect of the relation among economic growth and political instability (Brogaard & Detzel 2015). They suggested that unstable and weak government having higher risk of revolution is expected to support policies which brings more benefits to the pressure groups and lobbyists and in turn helps government

to survive both financially and economically. This causes harm to the society including ordinary consumers and tax payers.

Two points are common in all the above-mentioned research studies:

1. If present government is incompetent, higher is the probability that economic decision makers and investors will take this change as a solution for the improvement of situation and a positive reform or take it as a potential investment opportunity. Various studies have reported that there is less tendency that the new regime will be stronger and more competent than the existing one.

2. In case of higher political instability, it reduces the uncertainty on its own as it becomes obvious about the change in power and government. The problem is that incompetent and unreliable political situation results in unknown and uncertain government. Thus, uncertainty prevails so as the adverse effects of political instability.

Besides these critics, the issue of joint endogeneity needs to be considered while assessing the impact of political uncertainty on economic growth. The endogeneity issue emerges when the main variable is related with the error term, indicating that statistically estimated variables can have a two-way relation and could result in unreliable logical conclusions (Cox & Weingast 2018), Considering the effects of political instability on economic progress, problem of endogeneity states that if political instability causes slow economic growth, it will in turn increase the probability of change of government.

For quality of environment in a country, the demand for quality of environment by individuals is crucial in a civil and political system. The positive relation between quality of environment and quality of environment is discussed by Hart (2018). According to the researcher, the reason for the positive association among these is non-provision of public goods in a non-democratic country including environmental quality in contrast to the democratic economies. The income share received by the political elite is disproportionate and for this, they have to incur the cost associated with the regulation of environment. A proportionate share in the form of benefits associated with control of pollution is received by this group. A model similar to the one presented by Deacon was proposed by Spilker et al. (2017). It had the similar arguments with the addition of a short horizon of planning possessed by less democratic regimes. The model did not confirm a positive relation between the environment and political freedom. The role of social groups with interest in the environment is promoted by a system having representative legislature. Through provision of subsidies for industries, the carbon emissions can increase with political freedom, in case the effect is biased because of unfriendly environmental solutions. When there is environmental issue of CO2 emissions across the globe, the impact of political freedom on environment can be insignificant as any country have the option to free ride. There can be association among the emission of global pollutants with some other problems linked with environment. Political freedom can create an influence in this way Fankhauser et al. (2015). Due to the instability risks across the globe, a country's preferences for global quality of environment can become

high. For instance, the indication can be in the form of increase in number of climate conferences. There is mixed literature available on the influence of democracy on Environmental Kuznets Curve. It has been argued by some researchers that the quality of environment is enhanced through democracy while another group of analysts has said that the quality of environment is deteriorated with the involvement of political institutions. A third group of researchers claims that there is no direct influence of democracy on the quality of environment. The debate was taken into account by Beeson. (2018) and the relation was explored.

Other variables such as corruption control, total area of land, income, education and rural population can influence the impact of democracy on Environmental Kuznets Curve. It is interesting for some researchers to study the role of democracy in environmental degradation. The definition of EKC was broadened by Fredriksson, and Neumayer (2013) through use of democracy index for the explanation of income-emission nexus. The influence of land area, corruption control, education, deforestation, rural population and education was studied. The average rate of change in forest per year for over 177 countries was taken into study for 1990-2000. The level of democracy was used as the primary variable and it was selected from the Polity index. The range of polity measure was −10 to +10 (autocratic to democratic). According to Mol (2014).there is an inverse U-shaped association between democracy and deforestation. By making comparison of democratic countries and non-democratic countries, the deforestation rates are high in democratic transition. In defining the rates of deforestation, the income factor has low explanatory power as compared with democracy. The focus should be on the reduction of deforestation through democratization rather than just on economic development.

years	**CO2 Emission**
1999	2.827
2000	2.879
2001	3.062
2002	3.251
2003	3.479
2004	3.741
2005	3.782
2006	3.829
2007	3.814
2008	3.794
2009	4.001
2010	4.195
2011	4.121
2012	4.372
2013	4.622
2014	5.02

Source: world Bank

In early development stages, income equality distribution is not ensured through economic development. EKC hypothesis can be influenced through continuous

income inequality. The relation between economic development, political powers, degradation of environment, income inequality was analyzed by Policardo. (2015). The majority of consumers buying goods related to environment were taken into account as well. The researcher classified the individuals of the society in two categories, having different exposure level to the pollution. It was expected that the most exposed individual group would be used as decisive voter. It was found that environment is benefited through democratization when the difference in income between the two decisive actors is high.

Some researchers have claimed that the quality of environment is negatively influenced by this inequality. The influence of democracy on quality of environment is overcome by this effect. The process through which democratic institution influences the quality of environment was examined by You et al, (2015). The researcher used data of 122 countries for time 1960-2008. Two indicators for quality of environment were considered. It was found by the researcher that an opposite impact is created by democratic institution on environmental quality. This is resulted from the positive impact on quality of environment and negative effect on income inequality and investments (indirect). The one-step and two-step GMM system was used for the study with fixed effect estimators. The regressor econometric model was generated by residuals.

The effects of democracy are under discussion. The analysis can be affected by the individual factor of democracy. The effects of democracy and some control variables have been analyzed on environmental pollution in some literature studies. The traditional relation between environmental quality and economic growth has been doubted by Sugiawan and Managi (2016).He used the data of time 1986-1999. The control variables used in research included population density, governance control, economic activity causing pollution and vulnerability and per capita income. According to Mol (2014). in a number of cities in the developing country, there is some effect of geographic vulnerability and governance on air pollution levels.

For example, growth rates during the pre-election years under democratic regimes play an important role for the existence of the governing body, as public seems to be more interested in having more competent and stable political regime. Contrarily, during pre-election years, if the government could not properly control the country's economy, then the probability of change in government increases. In addition, the successfulness of a dictator and chances for change during a dictator regime, is directly associated with the country's economic efficiency. Poor economic situation affects the stability of a political regime in non-democratic and democratic regimes (Cox & Weingast 2018).

Economic growth and CO2 emissions

During the early phase of 1990s, the concept of EKC has emerged with the research's (Dogan & Seker 2016), to explore what environmental effects does NAFTA causes, and for the World Development Report 1992 (Shahbaz et al. 2017). The term Environmental Kuznets Curve was first introduced by (Stern

2018), in the literature of economics. Since then, increased attention has been given on the effects of economic progress on the environmental quality, providing a significant number of empirical evidences into the EKC hypothesis literature. Several studies such as (Pablo-Romero & De-Jesús 2016) , have reviewed this concept. The review of empirical studies that have been published during 2003-2014, was done by dividing these studies into two categories (Al-Mulali et al. 2015). The first examined the concept of EKC hypothesis with respect to individual economies, whereas the other group examined the Environmental Kuznets Curve hypothesis for a panel data or cross-sectional data of countries. Different countries from different regions especially from the Americas, Central Asia, Europe, East Asia, South Asia, and Sub-Saharan African, and the Pacific, and North Africa & Middle East have been investigated (Al-Mulali et al. 2015). However, smaller emerging economies such as Africa and Middle East and North Africa have gained less attention (Al-Mulali et al. 2015).

The studies (Shahbaz et al. 2014: Tutulmaz 2015),conducted for individual MENA economies have mostly used Tunisia and Turkey in their studies. In case of studying panel of MENA countries, EKC hypothesis was tested for 43 developing economies, involving 12 African and 12 Middle Eastern economies (Narayan et al. 2016).The study concluded that only South Asian and Middle Eastern panel have shown the reduction of carbon dioxide emissions with the increase in income.

Furthermore, a few studies referred to particular MENA economies. The relation among energy consumption, real GDP, and carbon dioxide (CO_2) has been explored for 12 MENA economies including UAE, Saudi Arabia, Tunisia, Qatar, Morocco, Oman, Kuwait, Lebanon, Egypt, Jordan, Bahrain and Algeria, for the years 1981-2005 (Zaied et al. 2017). Poor statistical evidence was obtained for the EKC hypothesis. Similarly, EKC hypothesis was also analyzed for 12 Middle East economies having plentiful natural reserves and have gained special interest among energy economists (Ozcan 2013).A U-shaped curve was observed for the analysis of 3 countries, but overall contrary evidence was obtained as compared to the EKC hypothesis. EKC was also examined through employing a panel data for 10 MENA economies (Shahbaz, Farhani et al. 2015)The study attempted to explore the relation between economic growth, non-renewable and renewable electricity consumption and carbon emissions during 1980-2009. The study has confirmed about the EKC evidence in these economies. In a similar context, two different specifications of EKC were examined for 10 MENA economies, by employing panel data methods, involving rule of law, manufacture value-added, trade, energy, human development, and sustainability, during 1990-2010.

Based on the previous researches, the current study tested the phenomena of ECK in Thailand, by employing conventional quadratic equations as well as involving other variables. The empirical studies that have been conducted to observe the EKC hypothesis, used general or basic model, taking carbon dioxide emissions as a variable representing environmental degradation which depends upon income and its squared value (Bilgili et al. 2016) as well as on a few other variables. The literature of EKC mostly employed trade openness and

energy indicators as control variables for avoiding any specification bias. The empirical literature on energy economics has included an energy indicator to determine the CO_2 emissions during EKC testing. Following the early study, almost all studies have used energy consumption as a measure of carbon dioxide emissions. While some other studies have been conducted for the US Central America ,Turkey Brazil, Bangladesh and new members of European Union and candidate countries (Kasman & Duman 2015).

Moreover, energy consumption was added in studies for a panel data of MENA countries, as well, that analyzed the connection between economic growth, CO_2, and energy consumption, through simultaneous-equation modeling. Results of these researches reported a direct impact of the consumption of energy on the carbon dioxide emissions. However, a few researches employed some more variables as the indicators of energy. Other researches also employed coal consumption, whereas (Begum et al. 2015), used fossil fuel consumption as an indicator of energy (Shafiei, & Salim, 2014) In terms of electricity, the existing literature is quite limited .Only a few studies (Kasman & Duman 2015) have examined electricity consumption by classifying it as non-renewable and renewable use of electricity.

This paper used electricity consumption and energy use as the indicators of CO_2 emissions. In addition, various researchers including (Kaika & Zervas 2013),have suggested that trade can also influence EKC hypothesis. Therefore, while testing the EKC, several studies have incorporated trade openness as the independent factor, resulting in the contradictory outcomes. In case of Turkey, foreign trade is found to be significant. In case of China, openness ratio has been included as an indicator of foreign trade, which turned out to be favorable for environmental quality. In the similar context, in South Africa trade openness is found to reduce CO_2 emissions (Shahbaz et al., 2013). Other researchers considered trade as a harmful factor for environmental quality. And also reported that per growth of foreign trade results in per capita increase in carbon dioxide, in Turkey. Similarly, the study (Osabuohien et al. 2014) showed that the coefficient of trade turned out to be negative indicating that trade does not necessarily causes environmental degradation in Africa.

Moreover, the coefficients' signs for emissions and trade openness turned out to be different across sample economies, however the study indicated negative sign of coefficient for South Africa, Japan, China and Brazil and positive sign of coefficient for South Korea, Nigeria, Mexico, and Egypt (Onafowora & Owoye 2014).Trade openness was calculated as the total of exports and imports in terms of GDP. However, both imports and exports of goods and services have been used differently (Al-Mulali et al., 2015). Different relationship was found between CO_2 emissions and these variables, positive relation is found among imports and CO_2 emissions, but no effects of exports are found on CO_2 emissions.

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DATA

The data of the macroeconomic factors such as import, export, real GDP, and energy consumptions are taken World Development Indicators. The data related to emissions of carbon dioxide has been taken from the Oak Ridge National

Laboratory, Carbon Dioxide Information Analysis Center and Environmental Sciences Division. The standard measurement of CO2 emissions has been done in metrics tons per capita. These emissions are because of the fossil fuel consumption and cement manufacturing. The emissions include the carbon dioxide from flaring of gas, liquid fuels, and gas fuels and sold fuels. Through purchasing power parities, the data of GDP has been converted into international dollars. The measures of political freedom variables are dependent on the civil and political freedom indices of Freedom House (Fiedlschuster 2018). It is measured through the political freedom index that the government has come to power in a democratic way or through use of strength. Moreover, it involves the analysis of elections to be fair and free as well as the existence of opposition. The media or press freedom constraints and individual rights to express debate and establish organizations are measured in the index of civil freedom. These include the pressure groups as well as political parties. The average value of the two indices is used because of high degree of association among these. The average index is called POL (Political Freedom). This index is measured on the scale of 1-7 (1-lowest and 7-highest).

METHODOLOGY

The residual model is one way for investigating the long-term relationship between the regressor and the response. This approach has grown in popularity in recent years, and it is often employed in empirical models to assess the causal link between the regressor and the dependent variable. Interactions between variables may also be dynamic using this technique. Several considerations influenced the choice to utilize this method. First, unlike the previous technique, which required all explanatory variables to be integrated in the same order, the ARDL model is robust and permits testing of the long-run connection for different integration orders. As a result, using the ARDL approach to validate the integration order of model variables ahead of time is unnecessary. The ARDL technique may be used to handle cointegration regardless of whether the explanatory variables are I(O), I(1), or mutually co-integrated. However, the response variable must be integrated at order one for an accurate result (1). According to Cavanagh, Elliot, and Stock (1994) and Pesaran et al., pre-testing introduces uncertainty (I(O), 1(1), or mutually cointegrated) into the analysis of level correlations (2002). (2001). As a consequence, deciding on the optimal technique of analysis may be difficult for the researcher. According to some academics, unit root tests have poor size characteristics, especially for small sample sizes of time series, as well as insufficient statistical power.

Although the ARDL approach does not need a prior evaluation of the sequence of series integration, it is nevertheless important to analyze each series in the proposed model. As a result, both the dependent and explanatory variables must be I(1) series. For regression findings to be believed, the integral order of series must be consistent. Furthermore, if the series is a 1(2) variable, the regression findings will be incorrect. This is because the limits test assumes that the variables are either 0 or 1.

Second, the ARDL technique's error-correction model (ECM) statistically beats the Engle-Granger method. Why? The Engel-Granger technique excludes short-run dynamics from the residual term (Tang, 2005). ARDL can manage

endogenous factors and can modify the residual from a serial correlation. This is also more beneficial for huge samples. Furthermore, if Johansen-Juselius used a tiny sample size in her research, the findings might be incorrect.

$$\Delta Z_t = \alpha_0 + \beta_t + \sum_{i=1}^{k-1} \Phi Z_{t-1} + \varepsilon_t \ldots (1)$$

The long-run equations form the production functions model were analysed in the present study, which can actually be portrayed as a general vector autoregressive model of order P in Z_t as follow

$$\Delta Z_t = \alpha_0 + \beta_t + \Pi Z_{t-1} + \sum_{i=1}^{k-1} \alpha_i \Delta Z_{t-1} + \varepsilon_t \ldots (2)$$

The econometric model of the current study is as follow

$$\Delta ln(CO_2)_t = \alpha_0 + \sum_{i=1}^{k} \alpha_i \Delta ln(CO_2)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(EC)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(IMP)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(EXP)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(RGDP)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(POLT)_{t-1} + \Gamma_1 ln(CO_2)_{t-1} + \Gamma_2 ln(EC)_{t-1} + \Gamma_3 ln(IMP)_{t-1} + \Gamma_4 ln(EXP)_{t-1} + \Gamma_5 ln(RGDP)_{t-1} + \Gamma_6 ln(POLT)_{t-1} \ldots \ldots \ldots \ldots \ldots (3)$$

$$\Delta ln(RGDP)_t = \alpha_0 + \sum_{i=1}^{k} \alpha_i \Delta ln(RGDP)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(EC)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(IMP)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(EXP)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(CO_2)_{t-1} + \sum_{i=1}^{k} \alpha_i \Delta ln(POLT)_{t-1} + \Gamma_1 ln(RGDP)_{t-1} + \Gamma_2 ln(EC)_{t-1} + \Gamma_3 ln(IMP)_{t-1} + \Gamma_4 ln(EXP)_{t-1} + \Gamma_5 ln(CO_2)_{t-1} + \Gamma_6 ln(POLT)_{t-1} \ldots \ldots \ldots \ldots \ldots (4)$$

RESULTS

The correlational analysis of the variables is shown in the table 1. The correlation value indicates that the all the variables used in the current study are highly correlated.

Table 1: Correlation

		1	2	3	4	5	6
CO_2	**1**	1					
EC	**2**	-0.1830	1				
IMP	**3**	-0.5257	0.6483	1			
EXP	**4**	0.7810	0.6188	0.8929	1		
RGDP	**5**	0.6456	-0.4363	0.8129	0.7579	1	
POLT	**6**	0.7308	-0.7847	0.7828	-0.7674	0.6882	1

Thailand's optimum models' selection was undertaken as depicted by Table 2. The selected models are ARDL (2,1,0,0,1,0), ARDL (2,1,0,2,1,1), and ARDL (1,2,0,0,0,2) for equation 3.

Table 2: Optimal ARDL Model Selection of CO2 Model

Variables	**Coefficients**	**Standard Error**	***t*-statistics**	***p-Value***
ARDL (2,1,0,0,1,0)				
CO2(-1)	0.415	0.142	2.922	0.008*

CO2(-2)	0.455	0.147	3.090	0.006*
EC	0.000	0.000	2.427	0.024*
EC(-1)	0.000	*0.000*	5.938	0.000*
IMP	-0.477	0.137	-3.498	0.002*
EXP	0.001	0.001	1.202	0.243
RGDP	0.023	0.043	0.526	0.604
RGDP(-1)	0.065	0.037	1.763	0.092**
POLT	0.045	0.056	0.795	0.437
C	7.406	2.882	2.570	0.018*
T	0.045	0.009	4.731	0.000*
ARDL (1,2,0,0,0,2)				
CO2(-1)	0.429	0.118	3.624	0.001*
EC	0.000	0.000	4.158	0.000*
EC (-1)	0.000	0.000	1.902	0.070**
EC (-2)	0.000	0.000	-3.352	0.003*
IMP	-1.214	0.380	-3.194	0.004*
GDPG	-0.291	0.076	3.854	0.001*
EC	0.418	0.113	3.709	0.001*
POLT	0.455	0.147	3.090	0.006*
POLT(-1)	0.000	0.000	2.427	0.024*
POLT(-1)	0.000	*0.000*	5.938	0.000*
C	25.974	6.203	4.188	0.000*

Table 2: Optimal ARDL Model Selection of RGDP Model

Variables	**Coefficients**	**Standard Error**	***t*-statistics**	***p-Value***
ARDL (2,1,0,2,1,1)				
RGDP(-1)	0.425	0.183	2.327	0.031*
RGDP(-2)	0.340	0.173	2.959	0.065**
EC	0.000	0.000	2.401	0.177**
EC(-1)	0.000	0.000	4.338	0.000*
IMP	-0.428	0.195	-2.201	0.040*
EXP	0.045	0.056	2.795	0.437*
EXP (-1)	0.033	0.057	2.570	0.575*
EXP (-2)	0.103	0.062	2.675	0.110*
CO2	0.033	0.048	2.689	0.499*
CO2(-1)	0.097	0.053	2.831	0.083**
POLT	0.023	0.043	2.526	0.604*
POLT(-1)	0.065	0.037	2.763	0.092**
C	11.399	5.234	2.178	0.042*
T	0.070	0.023	2.992	0.007*

The outcomes of the regression analyses presented in models 3 and 4 that explain the effect that political instability has on CO2 emissions are summarized in table 1. The findings of this study are consistent with those found in earlier research. The results of Model 1 show that the economic freedom factors have a significant impact on CO2 emissions. The results of the political freedom model indicate that there is a correlation between political stability and low levels of carbon emissions. The connection between environmental health and

political liberty has been the subject of investigation in a number of different research projects. The majority of studies found a positive correlation; however, the majority of these studies did not take into account the effects of carbon emissions. The degree of political liberty available to participants at international conferences has a direct bearing on the possibility of their successfully negotiating reductions in global pollution (Anselin, et al.,2013). This study reveals that the implementation of such agreements has only just begun and that it is not yet possible to infer that political freedom has a significant impact on emissions at this time. CO2 emissions are significantly impacted by a number of factors, including import and export numbers, actual GDP, and energy use.

CONCLUSION

Based on the literature, following are the contributions of the current study. Firstly, the study aims to focus on Thailand, as no particular studies are available in the literature which have employed a contemporary quadratic equation for the testing of EKC hypothesis. Observing this hypothesis in Asean context can bring surprising results, as Asean is an emerging region country and a carbo hydrate and plastic exporter with rich industry of electronics which may result in the reduction of carbon emissions in compliance with the targets of INDC. Secondly, this study will expand the existing set of limited Asean literature. Thirdly, besides energy use, this paper also observed the effects of electricity consumption, thus contributing in the EKC literature regarding electricity consumption, and lastly, it continued the early consideration i.e. it separately analyzed the effects of imports and exports on carbon dioxide emissions. The prime objective of the current study is to investigate the impact of political instability and macroeconomic growth on the CO2 emission in Thailand. In addition to that the impact of CO2 emission and political instability on the real GDP is also observed. Thailand is the Asean country with highest value of political instability. Political instability also reduces reliability in forecasting that could result in minimal short-term policy making. Remarkable regional differences can be measured through political instability index by cabinet changes. The political instability index determines how many times a premier change in a year, in addition to this new staff is also replaced with 50% of the members of the cabinet. The ARDL is used on the data collected over the period of 27 years 1987 to 2014. The findings of the study have provided support to the proposed results. Numerous studies have been conducted and various theories have been illustrated, approved or rejected, consequently. The present study focuses upon the governments' political instability, and which type of government is considerably more fragile or more stable. The study will be helpful for policymakers, legislators and researchers and understanding relationship between political instability, CO2 emission, Trade, energy consumption, and economic growth in an merging economy like Thailand.

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