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MALAYSIA AND RCEP COUNTRIES: GAIN OR PAIN?

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ABSTRACT

The study analyses the determinants of *Malaysia's export to RCEP* (Regional Comprehensive Economic Partnership) using panel data of 15 countries for the period 1997-2018. The analysis shows that the *Malaysia's GDP and trade openness will increases as export increases. On the other hand, exchange rates have inverse relationship with export. Remoteness, however found to be insignificant to affect the export.* Thus by joining RCEP, Malaysia can look forward to see the growth in its economies as well as attracting more foreign investors into the countries as the economies expanded and become more open. The economic benefit gain from the inverse relationship between export and exchange rate will further placed Malaysia to become more competitive in international markets. In the long run, the lower exchange rate will reduce imports and raise exports to compensate for the increase cost of exports.

Contribution/ Originality: This paper is one of very few studies which have investigated the influence of RCEP agreement on Malaysia export. Particularly, it focuses on the performance of Malaysia's export as whether RCEP could promote Malaysia export with its member's countries using gravity model and panel analysis. Despite of some challenges with different ROOs between ASEAN + 1, will Malaysia have a great opportunity in improving its export among RCEP countries.

1. INTRODUCTION

Economic integration defines as two countries or a group of countries in a same region together establish a regional trading bloc or economic union by choosing a similar tariff rate for non-members countries as well as to establish open trade opportunity between members countries. Countries act as custom union if they impose common tariff from no-members countries and they get the chance to trade product freely among themselves. Furthermore, members can establish a common market in which countries inside agreement can have free movement of labor and capital if common tariff and free internal trade is achieved between them (Todaro) [1]. Trade liberalization usually occurs in two forums such as multilateral negotiations and free trade agreement (FTA). Basically, FTA eliminate import and export tariff, quotas and prioritize most of the products and services traded among FTA member countries. There are two types of FTA, a party of FTA or two parties known as bilateral FTA. Each party can be a country, trade block or it can be an informal group of nation. On the other hand, if FTA happen to have more than

two parties, it is known as multilateral agreement which commonly signed among neighboring countries known as regional trade FTA.

Association of Southeast Asian Nation (ASEAN) member countries introduce the structure of Free trade agreement (FTA) which is known as ASIAN Free Trade Area (AFTA) in 1992. Main aim for AFTA is to reduce overall tariff which helps to increase foreign direct investment (FDI) and to widen trades and investments among ASEAN countries. According to Okabe and Urata [2] there is positive and significant effect in Malaysia's trade after elimination of tariff in its wide range product. This promotes export growth to stimulate further hence by signing AFTA. Furthermore, Cheong [3] conclude that AFTA boost Malaysia's export and expand trade between 1997-2002. Siah, et al. [4] found that Asian country focus more on export rather than import after financial crisis and targeting developed countries for their exports.

Reginal Comprehensive Economic Partnership (RCEP) is a Free trade agreement between ASEAN 10 members and with 6 FTA members such as Australia, New-Zealand, China, India and Korea republic. The idea of RCEP came from two major ideas, one is proposed by China East Asia trade agreement (EAFTA) and other is proposed by Japan which is comprehensive economic partnership in East Asia (CEPEA). Due to the conflict of interest between the two major players, ASEAN comes in with new proposal is establishing RCEP by setting up some key principals. RCEP is acknowledged as high-quality, modern comprehensive and mutually beneficial economic partnership, with different level of development among members. The key principle also shows eight negotiation areas such as trade in goods and services, investments, economic and technical collaboration competition, intellectual property, dispute settlement and other issues. A big potential market integrated by RCEP consists of huge population around 3.4 billion which is more than one third of world population. RCEP's combined Gross Domestic Product (GDP) is around 21.4 trillion which is about 30% of word domestic product with five major players in market namely, China, Japan, Korea, India and ASEAN. According to Fukunaga [5] RCEP is competent to maintain a high level of market access opportunities that allow ASEAN to strengthen liberalization commitments in the trade of goods and services. The diversification in the procedures and commitments in the ASEAN + 1 FTAs increases the effect of the noodle-bowl yet the establishment of RCEP could reduce such effect. Noodle bowl effect is a situation in which the rules and procedures are intertwined and the overlap that could hinder the full utilization of the preferential schemes. However, RCEP will face some challenges in the process, for example rules of origin (ROOs), which determine the country of origin of goods and services and their eligibility for preferential treatment in international trade. People tend to presume that RCEP will be another trade agreement with low standard in the region because of the word of flexibility fundamental and the "ASEAN Way" of decision execution. It also leaves an impression that the formation of this agreement is not much different from the existing ASEAN+1 FTAs. If the RCEP looks more likely as ASEAN"s least attractive FTA and excluded products that participating countries consider sensitive, it tends to be less attractive to new members.

The export between Malaysia and China has huge differences in 2016-2017 compare to 2015 which recorded Malaysia's export around 39 billion to China, estimated around 16% of total export. In 2016, the export towards China dramatically reduces from 39 billion to become 23 billion. The total export decreased as much as 65%, a reduction from 258 billion to 184 billion. The scenario indicates that Malaysia needs to be more open diversified in its export, and RCEP could be an alternative towards export performance. For example, India will reduce the tariff rate up to 80% due to the signing of RCEP agreement and this will give more opportunity for Malaysia potentially to catch up with India's market. In general, it is crucial to examine whether RCEP really brings advantages to Malaysia 's trade flow. RCEP might not only bring opportunities towards Malaysia and its member but as well as unforeseen threats.

The paper aims to investigate the influence of RCEP agreement on Malaysia export. Particularly, to examine whether RCEP can promotes Malaysia's export to a higher level with its members countries using panel data analysis based on gravity model. It is important to determine the long run relationship between Malaysia's export

and RCEP to ensure the sustainability of the trade and future opportunity that may benefits both parties. Thus, the study will analyze the impact of export that may exist from the unilateral or bilateral relationship of Malaysia's export within RCEP in achieving more diverse economy through trade.

2. LITERATURE REVIEW

According to Elshehawy, et al. [6] over the past half-century the worldwide trade literature widely uses gravity model and it can be treated as classical procedure to analysis a nations export. However, many researchers use many different models other than gravity model for example vector error correction model (VECM), Global trade analysis project (GTAP), partial equilibrium model and computable general equilibrium model.

Liu [7] use gravity model to study the effect of RTAs on China's trade with its trading partners and found out that RTAs enhanced intraregional trade between China and other members countries. Even though the export between NAFTA members and China decreases yet there is no change in its import as China is their main labor supplier.

Trade diversion will also be experiences by China with CER, NFTA, MERCOSUR, and Canada and USA free trade agreement (CUSFTA). However, there will no impede by ASEAN and APEC to China's import and export. In simple word, RTA will increase trade between members countries but decrease trade between non-members countries.

Furthermore, Kurihara [8] also investigates impact of RTAs on international trade by using gravity model, and concludes that RTAs will help to rise international trade opportunities in OECD countries than non-OECD countries. By applying a gravity analysis on merchandise exports among China and 30 OECD nations, he illustrates that China's export trade experiences substantial positive influences on the traditional explanatory variables namely GDP, GDP per capita and population while adverse impact on distance, remoteness, regional economic association and the rate of exchange factors found insignificant. These conclusions confirm that on the nation's export trade, trade cooperation has significant positive impacts.

However, Dembatapitiya and Weerahewa [9] capture the effects of different types of trade agreements on bilateral trade in South Asia using the gravity model that includes cross-cutting data for 2555 bilateral of trade for year 2012. They found that EU was the only RTA of South Asia that is significant and negative to the bilateral trade. The negative effect is due to the financial crisis faced by Europe in recent past and it leads to the undercapitalization of financial institution in Europe zone. Furthermore, it leads to, a decline of economic growth in Europe and exports value of world declined. They also found that BTAs are all positive and significant to bilateral trade. They confirmed that the BTAs within South Asia countries would benefit more than BTAs with other countries. In other word, BTAs within South Asia countries would encourage the regional trade of South Asia countries.

Devadason and Chandran [10] using extended gravity model include data from 15 countries data about 21 years he found that lower potentials for china's trade expansion with Malaysia are noted in the RCEP context relative to ASEAN. The research trade relationship between china and Malaysia within the context of ASEAN and the impending RCEP also conclude that potentials for trade expansion within both structures suggest a change (decline) in the trade posture of the china-Malaysia partnership.

Kien [11] also use variable export, GDP, exchange rate and distance to determine factors of export flows of countries in the ASEAN free trade area (AFTA). Using gravity model and data from 1988 to 2002 of 39 countries, he found that GDP, population and language among other factors can explain export flows and AFTA only help to produced trade creation among its members countries. According to Abidin and Sahlan [12] the gravity estimates imply the importance of size effects, level of openness of the economy, inflation rates and the exchange rate as determinates of Malaysia's export to OIC countries.

3. METHODOLOGY

To determine trade relationships, the traditional gravitational equation uses cross-sectional data over a period of time. Cheng and Wall [13] have suggested that these techniques can generate a question of erroneous specification as well as a biased valuation between the levels of mutual trade, since this particular method is unable to control heterogeneity. To solve this problem, the definitive solution is the use of field data in the gravity model, since the field data is a combination of time series and cross-sectional data [14, 15].

The generalized standard gravity model is restated as below:

$$LX_{ijt} = \beta_0 + \beta_1 LY_{it} + \beta_2 LY_{jt} + \beta_3 LD_{ijt} + \beta_4 D_{ij} + \varepsilon_{ijt}$$

In this research log- linear model is used and all the variable present in natural logarithms:

$$LEXP_{ijt} = \alpha_0 + \beta_1 LGDP_{it} + \beta_2 LGDP_{jRt} + \beta_3 LTRGDP_{it} + \beta_4 LTRGDP_{jRt} + \beta_5 LEx_{it} + \beta_6 REM + \varepsilon_t$$

Where,

Country, i is Malaysia and country jR is denoted as 15-RCEP countries.

L denoted logarithm.

Export$_{it}$ = Exports from exporter nation I to importer nation J

GDP$_{iRt}$ = Economic size (Gross Domestic Product per capita) of Malaysia

GDP$_{jt}$ = Economic size (Gross Domestic Product per capita) of 15-RCEP countries

ER$_{it}$ = Nominal reciprocal rate of exchange from exporter nation I to importer nation J

TRGDP$_{it}$ = Openness of Malaysia

TRGDP$_{jRt}$ = Openness of 15-RCEP countries

REM$_{it}$ = Remoteness

β = Coefficient

ε_t = Error Term.

Theoretically, an expansion in income will increase import and supply side, that will contributes to the higher national production suitable for export. So that for β_1 and β_2 sign assumed positive. As country is more open to international trade, it will increases more the overall trade. So β_3 and β_4 predicted as well as positive relationship. Exchange rate can be both negative or positive. If exchange rate decreases then the price of the product of Malaysia is cheaper, so export will increases /On other hand if exchange rate increases Malaysia currency will be stronger than other and their export become less attractive but the production will increase. High transportation cost has negative effect on trade the trade become costly when the transportation cost increases and profit will be less. β_6 remoteness is as a proxy of transportation cost thus may have negative sign. Country that is more remote with Malaysia will have less relationship and more barriers to trade.

3.1. Panel Unit Root

Panel unit roots tests are more effective and persuasive proven by Levin, et al. [16], Hadri [17], Breitung [18] compares to unit root tests that applied in individual series. This is because the additional information from the cross-sectional data will boosted the information from time series. Researcher also found out that individual unit root test might results in complicated limiting distribution while panel unit root test help to result in normal distribution in limit [19]. Panel unit root test also help to identify variables have cointegrated relationship that potentially happened between the variables in the model. If all variable has no unit root means all the variable are stationary its mean panel regression has spurious regression problem.

3.2. Panel Co- Integration

Panel co-integration analysis in this research apply Pedroni [20] and Kao and Chiang [21] panel cointegration test. By assuming our variable is I (1) variable panel co-integration established bellow: Xit = αi+ Yitβ + ωit

Here, i and t represent cross sectional and time series factor (i= 1......N and t=1......T) respectively, individual constant term defined by εi, slope coefficient is represented by βs, stationary distribution is ωi and for all i the integrated process of order I (1) is represented by Xit and Yit.

3.3. Panel Fully Modified OLS (FMOLS) Estimates

Pedroni [20] proposed a more powerful test compared to the single equation methods that directly examine the condition in the cointegration vector needed to maintain a solid relationship. In addition, these methods allow us to present the null hypothesis in a more natural way so that we can examine whether the strong relationship between energy consumption and economic growth is constant in all panel countries.

This model based on the regression suggest by Pedroni [20]:

Yit =αi + βiGDPit+μit. i =1,2, . . ., N.t 1,2, . . ., T

Where, Yit is log of export GDPit gross domestic product also Yit and GDPit cointegrated with slopes βi which may or may not be not be homogeneous across i.

Group mean fully modified ordinary least square (FMOLS) estimator are given below:

$$\ast - \beta = (\Sigma \ \hat{}22 \ -2 \qquad =1\Sigma(\qquad -\dot{X} \qquad =1) \ 2\Sigma \ \hat{}11 \ -1 \qquad =1 \ \hat{}22 \ -1(\Sigma(\qquad -\dot{X} \qquad =1) \ 2 \qquad \ast \ T \ \hat{}(3.35)$$

$$\ast = \qquad \ast- \text{L'}21 \ \text{L'}22 \qquad , \ \hat{} = \Gamma21 \ \ast+\tilde{\Omega}21 \ 0-\text{L'}21 \ \text{L'}22 \ (\Gamma21 \ \ast+\tilde{\Omega}21 \ 0)$$

4. EMPIRICAL FINDING

4.1. Panel unit Root Test

In order to check the stationarity of the variable unit root test is using Levin Lin Chu (LLC), Im Pesaran and Shin (IPS) and Augmented Dicky-Fuller (ADF)) based on constant and trend. Whereas, the LLC test is based on the common unit root process assumption that the autocorrelation coefficients of the tested variables across cross sections are identical (indicating an alternative hypothesis of stationarity in all panel units), the IPS test relies on the individual unit root process assumption that the autocorrelation coefficients vary across cross sections.

All the test shows us LGDPi, LGDPj, LTRDi, LEX, LREM variable are I (1) variables. Means they are non-stationary at level and but become stationary at first difference. But from Table 1 we can observe LEXPij, and LTRDj are stationary at level with no trends in LLC test but these variables are nonstationary at with trends and also in 1st difference variables are stationary. Furthermore, other two test IPS and ADF show us the variable are I (1). Based on the three tests result this study came in conclusion as the majority tests result shows that all variables are non-stationary at level and stationary at first difference so its mean all variable are I (1) an indication the long run cointegration may exist between variable.

Table-1. Levin, Lin and Chu (LLC) panel unit root test results.

Variabls	LLC Level Constant	LLC Level Constant + Trend	IPS Level Constant	IPS Level Constant + Trend	ADF Level Constant	ADF Level Constant+ Trend	LLC First-Difference Constant	LLC First-Difference Constant + Trend	IPS First-Difference Constant	IPS First-Difference Constant + Trend	ADF First-Difference Constant	ADF First-Difference Constant + Trend
In(EXPijt)	-3.391(0)***	0.079(0)	0.300(0)	0.936(0)	26.442(0)	38.930(0)	-14.23(0)***	-15.37(0)***	-12.63(0)***	-12.17(0)***	183.92(0)***	163.17(0)***
In(GDPPCit)	0.590(0)	14.617(1)	4.022(0)	5.889(1)	4.551(0)	1.415(1)	-18.612(0)***	-19.77(0)***	-17.303(0)***	-15.24(0)***	249.97(0)***	200.65(0)***
In(GDPPCjt)	1.271(0)	5.331(1)	4.983(0)	2.821(1)	5.402(0)	10.516(1)	-15.43(0)***	-15.79(0)***	-13.03(0)***	-10.55(0)***	204.132(0)***	130.341(0)***
In(TRDit)	7.085(0)	0.961(1)	9.330(0)	0.314(1)	0.325(0)	19.935(1)	-9.363(0)***	-5.46(0)***	-10.47(0)***	-7.420(0)***	150.18(0)***	100.389(0)***
In(TRDjt)	-2.136(0)**	-0.774(1)	-0.964(0)	-0.221(1)	34.073(0)	38.998(1)	-15.57(0)***	-14.71(0)***	-12.78(0)***	-11.72(0)***	194.62(0)***	149.956(0)***
In(EXit)	2.114(1)	8.765(2)	1.272(1)	-0.030(2)	41.368(1)	28.932(2)	-16.5(0)***	-17.86(0)***	-14.4(0)***	-13.95(0)***	296.8(0)***	154.050(0)***
In(REMjt)	0.914(0)	0.961(1)	0.984(0)	0.729(1)	0.941(0)	0.752(1)	-13.88(0)***	-13.22(0)***	-11.04(0)***	-8.77(0)***	187.50(0)***	108.21(0)***

Note: **and*** represent significance at 5% and 1% levels respectively.

4.2. Panel Cointegration Test

Pedroni [20] cointegration test is to observe the long-run relationship between variable as shown in Table 2 below.

Table-2. Panel Cointegration test results.

Dependent Variable	Log of Export(InEXPj)	
	Statistics	**P-value**
Panel v-Statistic	1-632*	0.0432
Panel rho-Statistics	–0.447	0.3530
Panel PP-Statistics	–62.00***	0.000
Panel ADF-Statistics	–24.67***	0.0000
Group rho-Statistics	5.299	1.0000
Group PP-Statistics	–10.026	0.0000
Group ADF-Statistics	–5.454	0.0000
Kao's t-Test	ADF t-Statistic	p-value
	–3.722***	0.000

Note: ***, ** and * indicates Astatistical significance at 1%,5%and 10% level. Whilst Pedroni'a panel cointegration tests do not allow for the inclusion of linear time trend, the Kao t-test allows for both intercept and linear time trend. The regressors were logs of EXPj,GDPi, GDPj, TRDi, TRDj, REM, LEX. Automatic lag length selection was based on AIC for pedroni and SIC for Kao test with a max lag of 4 and Newey-West automatic bandwidth selection and Bartlett kemel was used. All the tests were obtained under the null hypothesis of no cointegration among the variables. Both results were generated from Eviews9.

Table 2 shows panel cointegration results, which indicates cointegration between the variables as evidence that there is significance long-run relationship between export and respective covariates.

4.3. Fully Modified OLS (FMOLS) and dynamic OLS (DOLS)

According to Kao and Chiang [21] both analysis give is appropriate but FMOLS suffert problems in estimating small sample that may lead to small sample bias. On the other hand, DOLS estimator appears to outperform both estimators. In fact, DOLS method can correct the problem of serial correlation and endogeneity bias [21]. The analysis use automatic lag based on AIC for long run variance and Newey-west fixed and Bertlett for individual coefficient covariances.

Table-3. Fully Modified OLS (FMOLS) and Dynamic OLS (DOLS) estimation results.

Regress and Estimator	In(EXP)	
	DOLS	**Fully Modified OLS (FMOLS)**
IN(LGDPPCi)	0.873***	1.021***
	(0.000)	(0.000)
IN(LGDPPCj)	0.703***	0.451***
	(0.000)	(0.000)
IN(TRDi)	0.872***	0.548***
	(0.000)	(0.000)
IN(TRDj)	0.237***	0.294***
	(0.002)	(0.000)
IN(EX)	–0.176**	–0.203***
	(0.022)	(0.000)
In(REM)	–0.001	–0.210***
	(0.985)	(0.000)

Note: ***, ** and * indicates Astatistical significance at 1%,5%and 10% level

Table 3 shows, all variables under FMOLS are significant at 1% level and variables GDP of i country, GDP of j countries, Trade openness of i country and Trade openness of j countries are positively related to export. Variables of LEX or of Exchange Rate and Remoteness shows negative relationship with export. On the other hand, DOLS shows all variables are significant at 1% except LREM and similar to FMOLS, both LEX and LREM have inverse relationship with export. In the long-run 1% increase in export will increase GDP of Malaysia 0.873% which is a

positive indicator on the long run benefits of joining RCEP. The GDP per capita of rest of the members countries will also increase if they join in RCEP and trade with Malaysia. The result also indicates that RCEP countries will achieve mores trade openness which means that their net export and import will increase and become more competitive towards international trade and investment. Table 3 also indicates that as 1% increase in export will deprecate RCEP countries exchange rate by 0.176.%. The last variable which is LREM shows that remoteness is insignificant and as expected is negatively related to the export. Okabe and Urata [2] found that AFTA increases export which leads to trade creation for both exports and imports of AFTA parallel to the finding of this research in indicating that Malaysia trade openness will increase that leads to mean trade creation if Malaysia join RCEP countries.

5. CONCLUSION

Dynamic panel method is applied in the study to analyze the impact of Malaysia's export by joining RCEP countries. As there are many free trade agreement and noodle bowl effect, it is important to determine the trade gain or loss that Malaysia can experience in long run or short run. The use of panel unit root test using LLC, IPS, ADF unit root test and indicates that all the variable integrated in same order I(1). Panel cointegration shows there is strong presence of cointegration between variables which mean it may correlates in long-run. The results of FMOLS shows that all variable is significant except remoteness. To conclude, by joining RCEP, the study shows that the economic growth of Malaysia will increase as it will attract more foreign investor in capital market and thus increase the foreign direct investment. The study indicates export is inversely related to exchange rate. Thus if there is increase in export, the price of goods and services is cheaper due to fall in exchange rate, vice versa. Joining RCEP may, in long run helps to increase balance trade surplus, thus contributed to enhancement of economic growth of Malaysia.

REFERENCES

[1]   M. P. Todaro and S. C. Smith, *Economic development: Michael P. Todaro, Stephen C. Smith*, 10th ed. Harlow: Addison-Wesley, 2007.

[2]   M. Okabe and S. Urata, "The impact of AFTA on intra-AFTA trade," *Journal of Asian Economics*, vol. 35, pp. 12-31, 2014. Available at: https://doi.org/10.1016/j.asieco.2014.09.004.

[3]   D. Cheong, *The effects of AFTA: A disaggregated analysis.* Italy: John Hopkins University SAIS, Bologna Center, 2008.

[4]   K. L. Siah, C. K. Choong, and Z. Yusop, "AFTA and the intra-trade patterns among ASEAN-5 economies: Trade-enhancing or trade-inhibiting?," *International Journal of Economics and Finance*, vol. 1, pp. 117-126, 2009. Available at: https://doi.org/10.5539/ijef.v1n1p117.

[5]   Y. Fukunaga, "ASEAN's leadership in the regional comprehensive economic partnership," *Asia & the Pacific Policy Studies*, vol. 2, pp. 103-115, 2015.

[6]   M. A. Elshehawy, H. Shen, and R. A. Ahmed, "The factors affecting Egypt's exports: Evidence from the gravity model analysis," *Open Journal of Social Sciences*, vol. 2, pp. 138-148, 2014. Available at: https://doi.org/10.4236/jss.2014.211020.

[7]   T. Liu, "The impact of regional trade agreements on trade: The case of China," *Chinese Economy*, vol. 40, pp. 70-96, 2007. Available at: https://doi.org/10.2753/ces1097-1475400204.

[8]   Y. Kurihara, "The impact of regional trade agreements on international trade," *Modern Economy*, vol. 2, pp. 846-849, 2011.

[9]   P. Dembatapitiya and J. Weerahewa, "Effects of regional trading agreements on South Asian trade: A Gravity model analysis," *Tropical Agricultural Research*, vol. 26, pp. 468-485, 2015. Available at: https://doi.org/10.4038/tar.v26i3.8110.

[10]   E. S. Devadason and V. G. R. Chandran, "Unlocking the trade potential in China-ASEAN relations: The China-Vietnam context," *Journal of Southeast Asian Economies*, vol. 36, pp. 380-399, 2019.

[11]   N. T. Kien, "Gravity model by panel data approach: An empirical application with implications for the ASEAN free trade area," *ASEAN Economic Bulletin*, vol. 26, pp. 266-277, 2009. Available at: https://doi.org/10.1355/ae26-3c.

[12]   I. S. Z. Abidin and R. Sahlan, "The determinants of exports between Malaysia and the OIC member countries: A gravity model approach," *Procedia Economics and Finance*, vol. 5, pp. 12-19, 2013. Available at: https://doi.org/10.1016/s2212-5671(13)00004-x.

[13]   I.-H. Cheng and H. J. Wall, "Controlling for heterogeneity in gravity models of trade and integration: ICPSR data holdings," 2005.

[14]   P. Egger, "A note on the proper econometric specification of the gravity equation," *Economics Letters*, vol. 66, pp. 25-31, 2000. Available at: https://doi.org/10.1016/s0165-1765(99)00183-4.

[15]   L. Mátyás, "Proper econometric specification of the gravity model," *World Economy*, vol. 20, pp. 363-368, 1997. Available at: https://doi.org/10.1111/1467-9701.00074.

[16]   A. Levin, C.-F. Lin, and C.-S. J. Chu, "Unit root tests in panel data: Asymptotic and finite-sample properties," *Journal of Econometrics*, vol. 108, pp. 1-24, 2002. Available at: https://doi.org/10.1016/s0304-4076(01)00098-7.

[17]   K. Hadri, "Estimation of a doubly heteroscedastic stochastic frontier cost function," *Journal of Business & Economic Statistics*, vol. 17, pp. 359-363, 1999. Available at: https://doi.org/10.2307/1392293.

[18]   J. Breitung, "The local power of some unit root tests for panel data. Nonstationary panels, panel cointegration, and dynamic panels," *Advances in Econometrics*, vol. 15, pp. 161-178, 2000.

[19]   M. D. Ramirez, "A panel unit root and panel cointegration test of the complementarity hypothesis in the Mexican case, 1960-2001," Unpublished Center Discussion Papers, Yale University, 2006.

[20]   P. Pedroni, "Purchasing power parity tests in cointegrated panels," *Review of Economics and Statistics*, vol. 83, pp. 727-731, 2001. Available at: https://doi.org/10.1162/003465301753237803.

[21]   C. Kao and M. H. Chiang, "On the estimation and inference of a cointegrated regression in panel data. In: Baltagi, B., Ed., Nonstationary Panels, Panel Cointegration, and Dynamic Panels (Advances in Econometrics)," ed Amsterdam: JAI Press, 2000, pp. 161-178.