



RETRACTED: Investigating the Impact of Monetary Progress on Ecological Excellence in Malaysia: Employing Financial Maturity, and Biological Variation

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OPEN ACCESS

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Specialty section:

This article was submitted to
Environmental Economics and
Management,
a section of the journal
Frontiers in Environmental Science

Received: 11 January 2022

Accepted: 24 January 2022

Published: 23 February 2022

Citation:

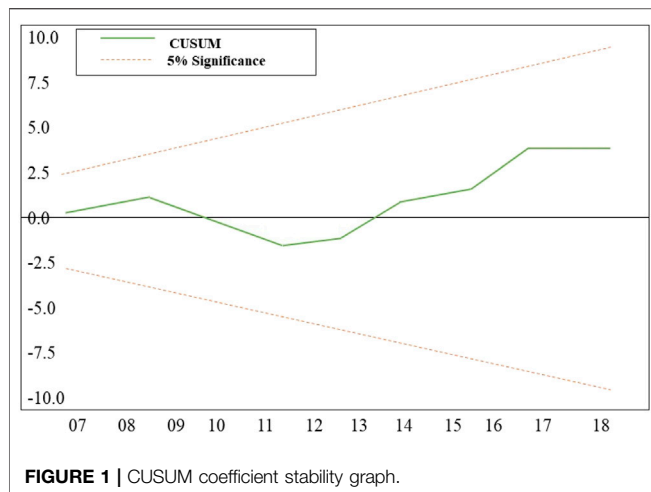
Wang L, Guo J, Ahmad M and
Khan YA (2022) Investigating the
Impact of Monetary Progress on
Ecological Excellence in Malaysia:
Employing Financial Maturity, and
Biological Variation.
Front. Environ. Sci. 10:852379.
doi: 10.3389/fenvs.2022.852379

This study investigates the consequences of financial development on environmental quality in Malaysia by using monetary access, profundity, and effectiveness as support components from 1990 to 2019. The level of affiliation between the components explored by using appropriate autoregressive lag technique. The variables appeared to have a long-term relationship during the investigation. Monetary events, population expansion, financial development, and energy consumption contribute to environmental degradation in the short and long-run. In contrast, squared fiscal growth boosts green value in the short and long term. As a result, Malaysia hosts the Ecological Carbon Kuznets Bend (ECKC) with a negative and measurable blunder revision phrase that supports the existence of a level connection between these variables. That is, any prior year's 21.8% imbalance is rectified within a year. Monetary events, financial development, squared monetary development, energy use, and population all impact carbon dioxide flows.

Keywords: Malaysian fiscal progress, CO₂ emissions, financial escalation, ecological value, ecological carbon Kuznets bend

INTRODUCTION

The status of the climate has recently aroused the interest of proponents of a positive turn of events, as it has worsened to dangerous proportions. This financial risk concerns analysts and politicians in both developed and developing countries. Carbon dioxide fluxes from affluent nations have recently gotten much attention. The quest for the factors that cause growing carbon dioxide emissions is never-ending, and research aimed at identifying remedies has produced mixed results. Carbon dioxide emissions are mostly caused by human activities such as creation, use, population, transportation, and urbanization. The status of the economy is inextricably tied to the state of the environment. According to Zhang (2011), monetary events affect ecological quality in three ways: first, improved securities exchanges help publicly traded companies lower financing costs, expand financing channels, increase risk, and upgrade resource/risk structures, as well as increase energy utilization and fossil fuel byproducts. Second, higher financial development may attract additional direct investment, boosting economic expansion but simultaneously raising carbon dioxide emissions. Third, practical and professional monetary intermediation facilitates customers' advanced activities by making it simpler to acquire expensive things such as luxury houses,



climate control systems, and automobiles, refrigerators, and clothes washers. Zhang's carbon footprint will grow as a result (2011). A well-designed account area might also assist in selecting energy-efficient assembly techniques and environmentally friendly buyer items. As a result, the monetary system plays a critical role in emerging and developed economies' financial development. Indeed, the board's competent monetary structure assists governments in making the most of their financial resources, even when they have limited financial resources. It creates a more favorable financial environment for progress and supports monetary development described by Furuoka, (2015a). A well-thought-out and managed monetary framework attracts investors, improves the securities market, and boosts financial efficiency. Monetary development is a necessary component of every economy since it supports securities market and banking activities. The monetary area is drawn to abnormal direct theory, which helps a country's monetary framework by promoting a financial invention. The monetary system and abnormal direct theory are intimately intertwined (Sadorsky, 2011). The result of consistent financial success and a healthy financial middle ground generates investment possibilities and expands financing to companies. This program encourages firms and people to start new enterprises and invest in high-value consumables to reduce energy usage. As a result of increased energy usage, carbon dioxide outflows into the environment and environmental contaminants into the world's biological system have risen (Abbasi and Riaz, 2016; Shahbaz et al., 2016c; Bekhet et al., 2017). According to Dasgupta et al. (2004), established financial institutions and capital business sectors give chances for investable cash in the sustainable power industry and advance and value finance for environmentally friendly green power projects. The allotment of low-cost credits for ecologically friendly driving is taken into consideration in a well-designed monetary system. FDI may also encourage local firms to develop specialized skills, which can help cut energy use (Claessens and Feijen, 2007; Tamazian et al., 2009; Jalil and Feridun, 2011). **Figure 1** show how achieving financial success may be utilized to boost energy replacement. In the best-case scenario, the results or consequences of research on the monetary improvement environmental quality nexus remain uncertain. This research

aims to look into the relationship between fossil fuel waste and monetary development in Malaysia, which is a rapidly expanding country. The investigation spans the years 1990 through 2019. The autoregressive distributive slack approach, based on Ang's (2007) CO₂ model and updated with monetary turns of events, is used to construct long-run co-incorporation linkages between CO₂ emissions, energy consumption, population, monetary development, and monetary improvement.

The main contribution of this research to the existing literature is as follows:

1. It will conduct its research using a larger collection of financial development lists.
2. It provides policymakers with a solid and econometrically sound result to assist Malaysian officials in developing environmental quality criteria.

The remainder of the paper is formatted as follows: *Literature Review* provides a brief overview of the writing, *Methods and Materials* contains an itemized description of the technique, *Results and Discussions* contains a thorough discussion of the econometric findings from our study, and *Conclusions and Recommendations* ends our research with strategic suggestions.

LITERATURE REVIEW

The link between monetary fluctuations and fossil fuel byproducts has been studied in a few researches with conflicting findings. For example, Ali et al. (2019) employed the ARDL bound test approach to investigate the numerous connections between fossil fuel byproducts and monetary development in Malaysia between 1971 and 2010. They observed that monetary improvement has a long-term and short-term impact on fossil fuel byproducts. Mesagan and Nwachukwu (2018) utilized the ARDL limits testing approach to explore the reasons for an ecological breakdown from 1981 to 2016. By analyzing head components, they create an ecological deterioration file (PCA). They discovered that whereas monetary events, energy consumption, exchange, and play are all important predictors of environmental quality, speculation and urbanization are not.

Similarly, despite unidirectional causation from urbanization pay to ecological suffering. With the bidirectional causality between energy usage and environmental deterioration, no causal relationship has been shown between capital speculation, monetary events, and environmental quality. Rafindadi (2016) investigates the relationship between monetary events, financial growth, energy consumption, exchange receptiveness, and CO₂ emissions in Malaysia. He discovered a causal relationship between monetary events and energy use and monetary events and CO₂ emissions in both directions. At the input level, there was a connection between monetary development and CO₂ emissions. Islam et al. confirmed both long- and short-run links between Malaysia's monetary events and CO₂ outflows (2013). According to Boutabba (2014), the monetary turn of events influences CO₂ fluxes in India. Jiang and Ma (2019) used a framework summarized next technique to investigate the link between monetary events and fossil fuel

byproducts for 155 countries, taking into account the heterogeneity of the sample by isolating the sample into two sub-groupings: developed and developing economies and non-industrial nations.

At the global, emerging business sector, and agricultural nation levels, the statistics reveal that monetary patterns considerably increase fossil fuel byproducts. The impact on industrialized countries, on the other hand, is insignificant. Abbasi and Riaz (2016) discovered that monetary development is the most important driver of CO₂ emissions in small and developing economies in a comparative study. All types of monetary development, including bank-issued private-sector homegrown credit, bank-issued private-sector homegrown credit, and monetary-issued private-sector homegrown credit, improve environmental quality through reducing environmental effect (Majeed and Mazhar, 2019). Foreign direct investment, energy use, and GDP per capita all negatively affect environmental quality, whereas domestic lending to the private sector has a greater impact than other monetary growth and urbanization metrics. Economic expansion harms environmental quality in Pakistan, according to Shahbaz et al. (2016c). Saleem et al. (2019) used a different OLS to investigate the effects of GDP growth, discovering that lower-pay economies do not support the EKC hypothesis, but higher-reimbursement economies do. Affirmative (2017) built a board to examine the impact of financial development on CO₂ emissions using a novel board edge method and data from 31 agricultural nations. According to experts, financial growth hurts CO₂ emissions in low-development countries and has a beneficial impact on high-development countries. Their findings do not support the estimated Kuznets curve (EKC) theory. Although they discovered a U-shaped connection, CO₂ emissions were also impacted by energy use and population. Bekhet et al. (2017) represented that the rise of fossil fuel byproducts in GCC countries other than the UAE is related to monetary events. In the economies of the South Mediterranean, Kahouli (2017) discovered a one-way causal connection between monetary events and CO₂ emissions (SMEs) as well as money development reduces CO₂ emissions in Pakistan and Bangladesh while increasing CO₂ outflows in India (Khan A. Q. et al., 2017). A globally developed monetary area may also lower acquisition prices, increase interest in the sustainable power business, and reduce CO₂ emissions. Yuxiang and Chen (2010) discovered that monetary improvement systems stimulate development, reduce CO₂ emissions, and boost local manufacturing, as Shahbaz et al. (2010) indicated. Al-mulali and Sab (2012) showed that a rise in popular interest in monetary events and energy usage increases interest in monetary administrations. It might lead to the financial sector implementing substantial monetary arrangements to reduce CO₂ emissions, and economic progress would lead to financial instability, which would result in increased CO₂ emissions (Zhang, 2011). According to Haseeb et al. (2018), financial measures are the most important boosters of Zhang (2011); Siddique (2017) depletion, and the EKC hypothesis holds across BRICS nations, and higher energy usage and monetary

growth resulted in increased carbon dioxide emissions. Energy use and economic development help manufacturing and economic expansion, but carbon dioxide emissions rise.

In any case, some research has shown that monetary reform can aid in the reduction of CO₂ emissions, as Khan M. T. I. et al. (2017) discovered a bidirectional causal relationship between monetary events and CO₂ emissions in Asia. Riti et al. (2017) emphasized the importance of monetary improvement in decreasing CO₂ emissions in 90 countries and money events, distributing risk, and enhancing speculation. Tamazian and Rao (2010) used the GMM method to investigate the impact of institutional, monetary, and monetary changes on CO₂ emissions in transitory economies, and these characteristics assist in reducing CO₂ emissions. (Jalil and Feridun, 2010) discovered that monetary development in China reduces CO₂ emissions. Lee and Chen (2015) revealed that monetary development could assist EU countries in reducing CO₂ emissions; EKC does not exist in the EU. According to Xing et al. (2017), money growth can help China's fossil fuel byproducts problem, and this impact is not limited to topographical differences. The relationship between monetary events and CO₂ emissions in 12 MENA countries have minimal impact on CO₂ outflows, and economic uncertainty has no influence on CO₂ emissions in Saudi Arabia (Salahuddin et al., 2017; Omri et al., 2015; Baloch et al., 2018).

METHODS AND MATERIALS

This study is based on Ang's (2007) CO₂ model, which has been integrated with financial developments to create CO₂ emissions, energy consumption, population, GDP, and financial development co-integration linkages. Pesaran et al. (2001) created the autoregressive distributed lag method.

Advantages of ARDL Over Other Co-Integration Methods

Endogeneity issues are handled, and the onerous long-run parameter testing associated with the Engle-Granger technique is removed, thanks to the use of suitable delays. Both the long and short-run parameters computed at the same time. Determining the order of integration among variables and unit root testing is lifted from the econometric technique. In reality, whereas the variables in a time series regression equation must be integrated of order one or at least of the same order to be integrated. The variables be $I(1)$, only ARDL or bound co-integration could be estimated regardless of whether the underlying variables were $I(0)$, $I(1)$, or fractionally integrated, and fifth lags length symmetry for the variables is not required. We have applied the following models and techniques to analyze the data of this research (Pesaran et al., 2001; Ali et al., 2019).

1. Autoregressive distributive lags model
2. Co-integration test
3. Boundary testing

TABLE 1 | Stationarity of factors in summary statistics.

Variables	Mean	Std. dev	Max	Mini	Skew	Kurt	Jar-B
ln_CO ₂	12.10	0.46	12.32	11.22	-0.42	2.26	4.04 (0.001)
ln_FD	3.23	0.05	3.56	3.19	-0.53	3.45	0.42 (0.000)
ln_GDP	3.21	0.32	3.49	3.43	0.82	3.21	4.25 (0.003)
ln_POP	7.99	2.43	12.41	5.29	-0.09	2.08	3.79 (0.000)
ln_ENG	19.62	0.37	19.20	19.52	0.03	2.06	2.12 (0.001)

TABLE 2 | Unit root test and critical value results for ADF.

		Variables				
		ln_CO ₂	ln_FID	ln_GDP	ln_POP	ln_ENG
Level	ADF	-1.7946	-2.1391	-1.4287	-5.6923	-2.6569
		-0.6844	-0.5067	-0.8334	-0.0005	-0.0921
	Critical value	-3.5539	-3.5539	-3.5539	-3.5539	-3.5539
	Result	I(1)	I(1)	I(1)	I(1)	I(1)
First difference	ADF	-5.5568	5.2361	-3.1951	--	-6.0845
		-0.0001	-0.0002	-0.0296		0
	Significant value	-3.2456	-3.2456	-3.2456	-3.2456	-3.2456
	Result	I(0)	I(0)	I(0)	I(0)	I(0)

Values in parentheses are MacKinnon (1996) one-sided p-values. Critical values are obtained from the Augmented Dickey-Fuller test result.

Data and Computational Environment

The study looks at the influence of financial growth on Malaysia's ecological excellence and the impact of renewable energy consumption, population expansion, and financial escalation on green value. The needed variables were sourced from the "https://www.cgdev.org.com" World Bank's "https://www.worldbank.org.com" recently released global growth map. Financial development, renewable energy consumption, population growth/year, GDP per capita, and carbon dioxide emissions are all factors to consider. From 1990 through 2019, data is gathered by intensity, access, and efficiency as a proxy for the country's financial progress. Furthermore, all of the data in this study was generated using the PLM package and R, a user-friendly statistical analysis program.¹

RESULTS AND DISCUSSIONS

As indicated in **Table 1**, the data analysis was performed using outline measurements; energy use has the greatest methods, while GDP has the lowest mean worth of the various parts. On the other hand, energy consumption has the highest least and greatest characteristics, whereas total national production has the lowest and largest. In any case, the standard deviation, which quantifies a variable's fluctuation, shows that carbon dioxide emissions were the most unpredictable of the many components, while monetary improvement was the least consistent. Furthermore, whereas total national output and energy use was skewed, carbon dioxide emissions, monetary events, and population were all skewed in

the other direction. Similarly, all characteristics were consistently conveyed since the Jarque-Bera test's probability advantages for essential features at a 5% degree of importance were more than 0.05. The stationarity of the factors was then verified using the unit root test. **Table 2** shows the results of the unit root test. Except for population, none of the variables was set at the level, although they were distinct.

All the I(1) elements were absorbed as one, except the population, which absorbed as zero, such as I(0). The most noticeable request was one because the elements comprised various requests. Using the ARDL technique, we continue our co-reconciliation research.

Appraisals of the ARDL Model's Lag Duration

The first step in evaluating an ARDL model is determining the length of the optimal slack for each element in the model. Using the standard un-constrained VAR method for all variables, as with other classes of autoregressive models, does not produce good results for the ARDL model. The Akaike information curve (AIC), Schwarz information curve (SIC), Hannan-Quinn curve (HQC), and Adjusted R-squared all include slack components for solitary factors that are quite similar (AR). **Table 3** shows the results of our model's slack lengths purpose source using four data measures.

The AR demonstrative test rejects one of OLS's suppositions. The ARDL (3, 0, 2, 3, 2, 2) model is then used to examine co-joining between these components, revealing that the erroneous component has requested autocorrelation first. Furthermore, the symptomatic test for these data rules shows that these models are appropriately indices. Consequently, as Pesaran et al. (2001)

¹https://cran.r-project.org/web/packages/plm/vignettes/plmpackage.html.

TABLE 3 | Model selection criteria.

Information criteria	ARDL model's lag period results					
	ARDL (3, 0, 2, 3, 2, 2)					
	χ^2_{FF}	χ^2_H	$\chi^2_{ARCH(1)}$	$\chi^2_{SC(1)}$	$\chi^2_{SC(2)}$	χ^2_N
Akaike information criteria (AIC)	0.1015	0.8375	0.3563	0.7691	0.2984	0.8765
Schwarz information criteria (SIC)	0.1015	0.8375	0.3563	0.6235	0.4773	0.8765
Hannan-Quinn criteria (HQC)	0.1015	0.8375	0.3563	0.5733	0.2984	0.8765
Adjusted R-squared (AR)	0.2109	0.9239	0.3840	0.0539	0.3098	0.9235

χ^2_{FF} , χ^2_H , $\chi^2_{ARCH(1)}$, $\chi^2_{SC(1)}$, $\chi^2_{SC(2)}$, χ^2_N are functional form misspecification, residual heteroscedasticity. The ARCH effect, autocorrelation, and non-normal error are all tested using the Lagrange multiplier statistic.

TABLE 4 | Bound co-integration test.

Depended variables	No. variables	F-statistics	Decision
$F_{CO_2}(CO_2 GDP, GDP^2, FD, POP, ENG)$	5	5.76	Co-integration
$F_{GDP}(GDP CO_2, GDP^2, FD, POP, ENG)$	5	46.81	Co-integration
$F_{GDP^2}(GDP^2 GDP, CO_2, FD, POP, ENG)$	5	18.46	Co-integration
$F_{FD}(FD GDP^2, GDP, CO_2, POP, ENG)$	5	6.59	Co-integration
$F_{POP}(POP FD, GDP^2, GDP, CO_2, ENG)$	5	77.3	Co-integration
$F_{ENG}(ENG POP, FD, GDP^2, GDP, CO_2)$	5	5.43	Co-integration
Pesaran et al. (2001) critical value	10%	5%	1%
I(0) bound	2.27	2.63	3.42
I(1) bound	3.35	3.79	4.69

point out, the selected model is relevant for consideration; sequential connection influences co-reconciliation results, requiring the use of analytic tests before assessing co-combination for the chosen model.

The Autoregressive Distributed Lag Bound Test

Following the identification of eligible deferrals, the ARDL bound co-joining test assessment is the next step. The exam was completed using Eqn. 14 and the Equations method to standardize, utilizing chosen slacks (3, 0, 2, 3, 2, 2) and assessing an autoregressive circulating slack model in **Table 4**, as proposed by Pesaran and Shin (1999). Adjusted R-squared (AR) revealed that the incorrect component had requested autocorrelation first. The AR demonstrative test ignores one of OLS's suppositions, and the ARDL (3, 0, 2, 3, 2, 2) model is then used to assess co-joining between these components. Furthermore, the symptomatic test for these data rules demonstrates that these models are correctly indicated, that there is no first or second request autocorrelation. The heteroscedasticity and curve do not impact the lingering. They are properly applied on a regular source. As a result, the chosen model is appropriate for consideration as Pesaran et al. (2001) point out; the sequential connection impacts co-reconciliation outcomes, involving the employ of analytic tests before evaluating co-combination for the chosen model.

Setting a significant slack level constraint for all components using F-measurement and the Wald test to build up the joint meaning of the level factors is required for this test (bound test).

TABLE 5 | Parsimonious estimation for short-run model.

Variables	Coefficient	Standard error	t-statistics	p-values
Constant	3.05	1.02	2.98	0.008
D(LCO2(-1))	1.33	0.34	3.89	0.001
D(LCO2(-2))	0.19	0.17	1.17	0.262
D(LGDP)	1.19	0.75	1.59	0.132
D(LGDP ²)	-0.13	0.05	-2.74	0.014
D(LGDP ² (-1))	-0.05	0.03	-2.08	0.053
D(LGDP ² (-2))	-0.05	0.02	-2.44	0.026
D(LFD)	0.78	0.28	2.73	0.015
D(LFD(-1))	-0.59	0.34	-1.73	0.105
D(LFD(-2))	-0.43	0.29	-1.45	0.171
D(LENG)	1.61	0.36	4.43	0
D(LENG(-1))	-0.61	0.47	-1.29	0.219
D(LPOP)	316.5	174.08	1.84	0.085
D(LPOP(-1))	-421.44	161.27	-2.69	0.016
ECM(-1)	-0.218	0.084	-2.58	0.002
R-square	0.7864			
Adj.R-square	0.6036			
F-statistic	4.2372			
	0			
DW	2.6081			

CO₂ emissions, monetary events, total national output (GDP), squared GDP, population (POP), and energy use (ENG) are all demonstrated to be perfectly synchronized in **Table 4**. According to the F-measurement from the bound test, the upper bound of 3.79% Pesaran basic worth 5% huge level, five autonomous components (k = 5) with no steadiness and pattern, case 1, was higher than the maximum furthest reaches of 3.79% Pesaran basic worth 5% important level. As a result, these

TABLE 6 | Parsimonious estimation for long-run model.

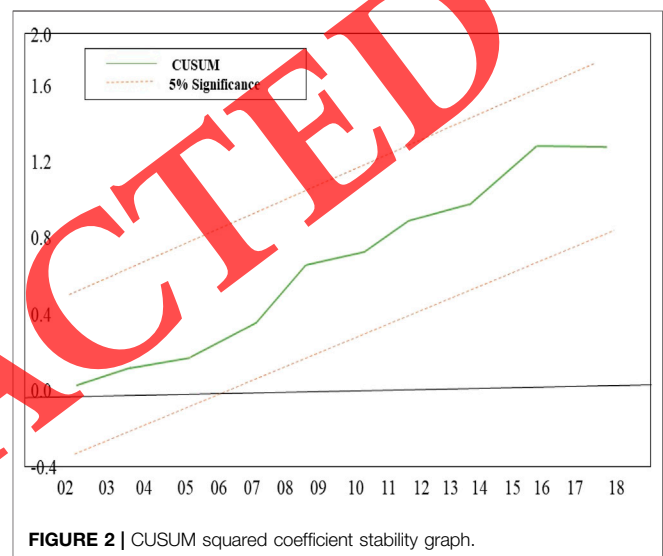
Variables	Coefficient	Standard error	t-statistics	p-values
Constant	99.94	54.52	1.84	0.0783
LGDP	1.52	0.54	2.86	0.0437
LGDP2	-0.09	0.04	-2.69	0.0211
LFD	1.38	0.33	4.27	0.0049
LENG	1.11	0.31	3.31	0.018
LPOP	-4.85	1.14	4.4	0.0125
R-square	0.87			
Adj. R-square	0.8378			
F-statistic	27.84			
	0			
DW	2.0874			

variables have maintained a long-standing run connection, implying that they move in lockstep throughout time. Because the parts are so interwoven, a blunder correction model is needed to forecast the rate of change in the short term, when they could drift apart.

Table 5 shows the short-run model's assessed result after selecting whether or not the elements are co-incorporated, whereas **Table 6** shows the long-run model. The country's economic progress influences the quality of Malaysia's environmental environment. According to this model, a 1% increase in monetary advancement in Malaysia would result in 0.78 and 1.33% reductions in environmental quality, which is substantial in both the short and long term. The ARDL method and increasing monetary value-enhanced environmental quality and a rise in population will increase carbon dioxide fluxes shortly. The underlying population slack causes a reduction in fossil fuel byproducts in the short run. In Malaysia, for example, a 1% increase in population would result in a 316.5% rise in CO₂ emissions shortly, but a 1% increase in first slacks would result in a 421.4% decrease in CO₂. Population growth has a substantial influence on environmental quality over time; a 1% increase in population translates into a 4.85% decrease in ecological quality. Furthermore, GDP impacts the environment; a 1% rise in GDP leads to 1.19 and 1.59% increases in environmental catastrophes in the medium and long term, respectively. On the other side, the squared total national production influences environmental quality. A 1% rise in squared GDP results in a 0.13 and 0.08% deterioration in environmental quality in the short and long run, respectively. Since it observed that squared Gross Domestic Product impacted CO₂ emissions, it reasoned that the Environmental Carbon Kuznets Bend (ECKC) existed in Malaysia. Finally, energy use impacts ecological quality; a 1% increase in energy use results in a 1.61 and 1.09% reduction in environmental quality over the medium and long term, respectively. Increased energy usage, it was believed, had a major short- and long-term influence on environmental collapse. Overall, verified fossil fuel byproducts have a substantial impact on public opinion of fossil fuel byproducts. Finally, a 1% increase in historical CO₂ fluxes translates into a 1.33% rise in Malaysia's present

TABLE 7 | Diagnostic tests result of short and long run.

Lagrange multiplier	Model type	
	Short run	Long run
Test statistics		
Non-normal error	0.6993	1.5742
	-0.77049	-0.6951
Autocorrelation	2.2256	0.1211
(serial correlation)	-0.1565	-0.7203
Autocorrelation	2.7813	1.5651
(serial correlation)	-0.0961	-0.2296
ARCH effect	0.6822	0.0651
	-0.70142	-0.78002
Residual heteroscedasticity	2.1881	0.409
	-0.0676	-0.8382
Functional form specification	0.312	0.3242
	-0.7593	(0.7485)



environmental disintegration. The error correction term ECT (-1) is negative and extremely large, confirming the newly established co-mix relationship between the components. Any prior year's disequilibrium is redressed by 21.8% each year, while the rest of the variables remain constant. Furthermore, autonomous components independently explain 60 and 83% of the short and long-run variation in the dependent variable in **Tables 5, 6**, respectively. The autonomous features are a significant indicator of the dependent variable in the short and long term, according to F-measurements 4.23 and 26.83.

Diagnostic Testing

The analytic test results for the utilitarian kind of the misspecification test are shown in **Table 7**. The model is free of work structure misspecification bias, and the error difference is homoscedastic. There is no Curve impact in the model, that there is no first and second request autocorrelation in the leftover, and that the residuals are normally dispersed and repetitive sound in both the short and long runs.

TABLE 8 | Short-run causality analysis.

Direction	F-statistics	p-value	Decision
Financial development → CO ₂	10.5657	0.0071	Causality exist
Economic growth → CO ₂	7.3931	0.003	Causality exist
Population → CO ₂	8.4721	0.0006	Causality exist
Energy use → CO ₂	14.623	0.0005	Causality exist
Squared economic growth → CO ₂	11.7301	0.0085	Causality exist

In addition, the coefficient dependability test revealed that the short and long-run coefficients were equally stable. Outwardly, the results of the strength tests are depicted in **Figures 1, 2**. The green bend depicts the CUSUM squared test bends, while the spotted line depicts the bottom and basic upper bounds of the 5% significance level.

The CUSUM squared bends work within the most minimal and higher bounds of the 5% degree of relevance, respectively, demonstrating the coefficients' reliability in the two graphs.

Short Run Causality Analysis

The test was carried out on the stingy result obtained from the late arrival by establishing joint limits on change and slacks of each component using F-measurement and the Wald test; incorrect theory: the factors are all zero. **Table 8** exhibits short-run causation among components in the carbon dioxide emanation CO₂ model. Soon, monetary events, financial expansion, energy use, and population all contribute to carbon dioxide emissions.

CONCLUSIONS AND RECOMMENDATIONS

The impact of environmental quality on Malaysia's economy's long-term development and improvement and its implications for the economy's long-term suitability could not be more crucial in strategy planning and execution. This research looked at the effects of monetary development on environmental quality in Malaysia from 1990 to 2019. The researchers used the autoregressive circulated slack method to look at the level affiliation between the variables of interest: CO₂, monetary turn of events, energy consumption, financial development, squared financial development, and

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population. In Malaysia, monetary events, population growth, financial expansion, and energy use are all major factors contributing to the environmental deterioration in the short and long term. In the short and long term, squared monetary development greatly enhances environmental quality. The ecological carbon Kuznets curve (ECKC) is still in use in Malaysia. The findings also show that this variable did have a level correlation (over time), which is supported by the negative and quantifiable meaning of the blunder revision term. That is, any 21.8% imbalance from the previous year is restored within a year. Carbon dioxide fluxes are influenced by monetary events, financial development, squared monetary development, energy usage, and population.

Recommendations

The results include the necessity to allocate monetary assets to sustainable power sources and the adoption of innovative technologies that will reduce fossil fuel byproducts and improve environmental quality. Malaysia's government should take the lead in effectively receiving sustainable power innovation and decommissioning nonrenewable innovation, much as population programs have aimed to limit the country's massive population growth in recent years.

DATA AVAILABILITY STATEMENT

Data used in this research are taken from Center for Global Development available at <https://www.cgdev.org.com> and World Bank's available at <https://www.worldbank.org.com>.

AUTHOR CONTRIBUTIONS

Conceplization: JG and YK. Methodology: YK. Analysis: MA and LW Supervision: YK. Resources: LW and MA Written and edition of original manuscript: YK and MA.

FUNDING

The authors acknowledge the financial support from the Philosophy and Social Science Fund of Tianjin City, China (Project No. TJYJ20-012).

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