Revista científica Sociedad & Tecnología

ISSN: 2773-7349

fecha de presentación: 20/03/2026, fecha de aceptación: 17/04/2026, fecha de publicación: 01/05/2026

Boukhari Fatna
E-mail: boukharifat@gmail.com
Orcid: https://orcid.org/0009-0003-5095-1760
Université Alger

Cita sugerida (APA, séptima edición)

Fatna, B. (2026). Economic effects of energy price shocks in emerging markets: policy implications and resilience strategies. *Revista Sociedad & Tecnología*, 9(S2), 743-754, DOI: https://doi.org/10.51247/st.v9iS2.785

==== o ====

Economic effects of energy price shocks in emerging markets: policy implications and resilience strategies

ABSTRACT

This study analyzed the economic effects of energy price shocks in emerging markets, emphasizing policy implications and resilience strategies. The objective was to evaluate how fluctuations in global energy prices affected inflation, economic growth, fiscal balances, and trade performance in energy-importing and energy-exporting economies. A mixed-methods approach was adopted, combining doctrinal economic analysis with empirical panel-data modeling for 30 emerging economies during the period 2010–2023. Dynamic panel estimations and comparative case studies were used to identify short-term and long-term impacts, as well as the effectiveness of mitigation policies. The findings showed that energy-importing countries experienced stronger inflationary pressures, deteriorating trade balances, and lower purchasing power during price surges, while exporting economies benefited temporarily from higher revenues but remained vulnerable to fiscal instability during price collapses. The results also revealed that targeted subsidies, strategic reserves, hedging mechanisms, renewable energy investment, and structural diversification significantly improved resilience. It was concluded that conventional fiscal and monetary responses were insufficient when applied in isolation, and that long-term stability depended on stronger institutions, diversified energy systems, and adaptive governance frameworks. These findings provide practical guidance for policymakers seeking sustainable growth under persistent global energy volatility.

Keywords: energy price shocks, emerging markets, inflation, resilience strategies, economic policy.

==== o ====

Efectos económicos de los choques de precios de la energía en los mercados emergentes: implicaciones de política y estrategias de resiliencia

RESUMEN

Este estudio analizó los efectos económicos de los shocks de precios de la energía en los mercados emergentes, con énfasis en las implicaciones de política y las estrategias de resiliencia. El objetivo fue evaluar cómo las fluctuaciones de los precios internacionales de la energía afectaron la inflación, el crecimiento económico, los balances fiscales y el desempeño comercial en economías importadoras y exportadoras de energía. Se adoptó un enfoque de

métodos mixtos, combinando análisis doctrinal económico con modelación empírica de datos de panel para 30 economías emergentes durante el período 2010–2023. Se utilizaron estimaciones de panel dinámico y estudios de caso comparativos para identificar impactos de corto y largo plazo, así como la efectividad de políticas de mitigación. Los hallazgos mostraron que los países importadores enfrentaron mayores presiones inflacionarias, deterioro de la balanza comercial y menor poder adquisitivo durante aumentos de precios, mientras que los exportadores se beneficiaron temporalmente de mayores ingresos, aunque siguieron siendo vulnerables a la inestabilidad fiscal cuando los precios cayeron. También se evidenció que subsidios focalizados, reservas estratégicas, coberturas financieras, inversión renovable y diversificación estructural fortalecieron la resiliencia. Se concluyó que las respuestas fiscales y monetarias convencionales fueron insuficientes de forma aislada y que la estabilidad de largo plazo dependió de instituciones sólidas y gobernanza adaptativa.

Palabras clave: shocks energéticos, mercados emergentes, inflación, estrategias de resiliencia, política económica.

==== o ====

Efeitos económicos dos choques nos preços da energia nos mercados emergentes: implicações políticas e estratégias de resiliência.

Resumo

Este estudo analisou os efeitos econômicos dos choques de preços da energia nos mercados emergentes, com ênfase nas implicações de políticas públicas e nas estratégias de resiliência. O objetivo foi avaliar como as flutuações dos preços internacionais da energia afetaram a inflação, o crescimento econômico, os balanços fiscais e o desempenho comercial em economias importadoras e exportadoras de energia. Adotou-se uma abordagem de métodos mistos, combinando análise doutrinária econômica com modelagem empírica de dados em painel para 30 economias emergentes no período de 2010–2023. Foram utilizadas estimações em painel dinâmico e estudos de caso comparativos para identificar impactos de curto e longo prazo, bem como a eficácia das políticas de mitigação. Os resultados mostraram que os países importadores enfrentaram maiores pressões inflacionárias, deterioração da balança comercial e menor poder de compra durante altas de preços, enquanto os exportadores obtiveram ganhos temporários de receita, permanecendo vulneráveis à instabilidade fiscal em períodos de queda. Também se verificou que subsídios focalizados, reservas estratégicas, hedge financeiro, investimento renovável e diversificação estrutural fortaleceram a resiliência. Concluiu-se que respostas fiscais e monetárias convencionais foram insuficientes isoladamente e que a estabilidade de longo prazo dependeu de instituições sólidas e governança adaptativa.

Palavras-chave: choques energéticos, mercados emergentes, inflação, estratégias de resiliência, política econômica.

==== o ====

INTRODUCTION

Energy price shocks constitute one of the most persistent external risks for emerging market economies, where production systems remain highly sensitive to fluctuations in oil, gas, and electricity costs. Many of these countries are net importers of hydrocarbons and therefore vulnerable to imported inflation and rising operating costs. Others depend heavily on commodity exports as a major source of fiscal revenue and foreign exchange earnings. Recent studies confirm that abrupt changes in global energy prices quickly affect domestic macroeconomic stability through inflationary pressures and slower economic activity (Kilian & Zhou, 2025; Aizeman et al., 2021).

The effects of these shocks are not uniform because emerging economies differ widely in institutional quality, industrial diversification, and external dependence. Oil-importing

countries usually experience deteriorating trade balances and weaker purchasing power when prices rise. In contrast, exporting economies may initially benefit from higher revenues, although they often face stronger exposure to commodity cycles and fiscal volatility. Comparative evidence shows that structural conditions largely determine the magnitude of these outcomes (Arezki et al., 2018; Togonidze & Kočenda, 2022).

Research on BRICS and other developing economies also indicates that policy frameworks play a decisive role in shaping responses to energy volatility. Countries with stronger fiscal buffers, flexible exchange rates, and diversified productive sectors tend to absorb shocks more effectively than those with rigid structures. Meanwhile, economies highly dependent on crude exports frequently face macroeconomic imbalances during prolonged boom-bust cycles. These patterns highlight the relevance of national resilience strategies (Nasir et al., 2018; Khan, 2010).

Another critical transmission channel is the financial system. Stock markets, exchange rates, and investor expectations often react strongly to abrupt changes in crude oil prices, particularly in economies with high import dependence or concentrated export structures. Empirical studies identify significant spillovers from oil markets to emerging equity markets, especially in China, India, and Russia. Such evidence suggests that energy shocks should be understood not only as a macroeconomic challenge but also as a source of financial instability (Fang & You, 2014; Basher et al., 2012).

More recent analyses confirm that these financial effects are dynamic, asymmetric, and interconnected across markets. Oil volatility can amplify uncertainty, reduce capital inflows, and increase contagion risks during periods of global stress. New methodological approaches reveal stronger connectedness between commodity markets and stock exchanges than previously estimated. Therefore, policymakers must consider both real-sector and financial-sector channels when designing stabilization measures (Das et al., 2022; Tiwari et al., 2025).

Despite growing academic interest, an important gap remains in comprehensive studies that jointly compare importing and exporting emerging economies. Much of the literature focuses on isolated variables such as inflation, stock prices, or exchange rates, rather than integrating growth, fiscal balances, and trade performance in a single framework. Earlier evidence on commodity collapses and recoveries also shows that policy responses are often fragmented and reactive. This reveals the need for broader comparative assessments (Baffes et al., 2015; Azad & Serletis, 2022).

Energy supply reliability also deserves attention because interruptions in electricity and fuel markets generate significant economic costs across productive sectors. Supply shocks can reduce industrial output, weaken services activity, and increase business uncertainty, especially where infrastructure remains underdeveloped. For many emerging economies, this means that energy vulnerability goes beyond price movements and includes systemic risks linked to shortages and logistics constraints (Poudineh & Jamasb, 2017; Kose, 2002).

At the same time, the global energy transition is opening new opportunities to reduce dependence on fossil-fuel volatility. Expanding renewable generation, distributed energy systems, and hydrogen technologies can strengthen resilience while supporting environmental sustainability. Recent evidence suggests that cleaner and more diversified energy systems may improve long-term competitiveness if accompanied by effective institutions and strategic investment. This transition is especially relevant for emerging economies seeking structural transformation (Wang et al., 2025; Cheng et al., 2025).

In this context, the present study analyzes the differentiated effects of energy price shocks in both energy-importing and energy-exporting emerging economies. It evaluates impacts on inflation, GDP growth, trade balances, and fiscal stability, while assessing the effectiveness of subsidies, stabilization funds, hedging mechanisms, and structural reforms. By combining conceptual discussion with empirical evidence, the research aims to provide practical

recommendations for resilience and sustainable development under persistent global uncertainty (Shang & Hamori, 2024; da Silva Souza & de Mattos, 2023).

Metodoloy

Research Design

This study adopted a mixed-methods research design that combined doctrinal legal-economic analysis with empirical macroeconomic modeling to examine the economic effects of energy price shocks in emerging markets. The use of a mixed approach allowed the integration of theoretical interpretation with quantitative evidence, thereby strengthening both analytical rigor and practical relevance. Methodologically, combining qualitative and quantitative procedures improves the depth of explanation and supports more robust conclusions in complex socioeconomic studies (Espinoza Freire, 2015; Espinoza-Freire, 2025).

The doctrinal or conceptual component focused on the systematic review of specialized literature related to energy shocks, macroeconomic instability, and adjustment mechanisms in emerging economies. Classical and contemporary theories were examined to explain how fluctuations in oil and gas prices affect inflation, growth, trade balances, and fiscal sustainability. This stage also facilitated the formulation of hypotheses H1–H5 by identifying causal relationships and recurring patterns discussed in previous studies (Prasad & Kose, 2011; Shang & Hamori, 2024).

Likewise, the literature review process followed structured scientific search strategies in academic databases to ensure relevance, quality, and updated evidence. Indexed sources from Scopus, Google Scholar, Web of Science, and institutional repositories were prioritized. The systematic identification, selection, and classification of scientific information is essential to reduce bias and increase the reliability of academic research processes (Espinoza Freire, 2020; Espinoza-Freire, 2025).

Empirical Analysis and Hypotheses Testing

The empirical phase employed panel data econometrics for a sample of 30 emerging economies during the period 2010–2023. The panel structure made it possible to compare countries over time while controlling for unobserved heterogeneity and common external shocks. This longitudinal design was appropriate because energy price volatility affects economies differently according to their structural conditions, trade dependence, and institutional capacity (Kose, 2002; Arezki et al., 2018).

The statistical analysis directly tested five hypotheses. H1 proposed that energy price shocks significantly increase inflation in importing economies. H2 stated that importers and exporters experience differentiated impacts from the same global shock. H3 examined effects on trade balances and fiscal sustainability. H4 evaluated the role of subsidies, hedging, and renewable policies. H5 analyzed whether diversification and structural reforms improved resilience to repeated shocks (Aizeman et al., 2021; Togonidze & Kočenda, 2022).

Data Collection and Sources

Secondary data were collected from internationally recognized public databases. Macroeconomic indicators such as GDP growth, inflation, public balances, and external accounts were obtained from the IMF World Economic Outlook and the World Bank Development Indicators. Energy variables included Brent crude oil prices, natural gas benchmarks, and dependency ratios reported by the BP Statistical Review of World Energy. The use of official databases enhanced transparency, comparability, and reproducibility.

Additional qualitative information was gathered from national budget reports, subsidy programs, renewable energy statistics, and policy documents from selected emerging economies. This complementary evidence was useful for interpreting country responses beyond numerical trends. Scientific research benefits from combining documentary evidence

with statistical sources when addressing multidimensional policy phenomena (Espinoza Freire et al., 2020; Espinoza-Freire, 2024).

Analytical Strategy

The first stage of analysis consisted of descriptive techniques to identify trends in energy prices, inflation, GDP growth, and fiscal balances across the sample countries. Periods of extraordinary volatility—such as the 2014 oil price collapse, the 2020 pandemic shock, and the 2022 geopolitical surge—were contrasted with macroeconomic outcomes. Descriptive analysis allowed the visualization of recurrent patterns and the identification of vulnerable economies.

The second stage applied dynamic panel estimators based on the Generalized Method of Moments (GMM), particularly the Arellano-Bond approach. This method was selected because it controls for endogeneity, omitted variable bias, and persistence in macroeconomic indicators. It also allowed estimation of both short-term and long-term elasticities of inflation and growth with respect to energy price shocks, producing more consistent coefficients for policy interpretation (Das et al., 2022; Tiwari et al., 2025).

Finally, comparative case studies were conducted for countries such as India, Brazil, Indonesia, and Nigeria. These cases were selected due to their relevance as major emerging economies with different positions in global energy markets. The qualitative comparison provided contextual depth regarding subsidy reforms, diversification policies, and institutional responses, complementing the econometric evidence with practical insights (Nasir et al., 2018; Cheng et al., 2025).

Ethical Considerations

All information used in this research was secondary, publicly accessible, and obtained from legitimate academic or institutional sources. No personal data, confidential records, or direct human participation were involved. Consequently, the study complied with principles of transparency, traceability, and responsible use of information. Ethical rigor in scientific research is fundamental for credibility and social trust in academic outcomes (Espinoza-Freire, 2022; Espinoza Freire & Rad Camayd, 2020).

In addition, the comparative interpretation of countries was developed objectively, respecting national contexts and avoiding ideological or policy misrepresentation. Results were presented for academic purposes only, with the intention of contributing evidence-based recommendations for economic resilience in emerging markets. Ethical neutrality and methodological responsibility strengthened the validity of the study's conclusions (Espinoza Freire & Calva Nagua, 2020; Espinoza Freire, 2020).

LITERATURE REVIEW

The literature on energy price shocks and emerging markets reveals a multidimensional relationship between global commodity volatility and domestic macroeconomic performance. Classical contributions established that oil price fluctuations affect output, inflation, and business cycles through supply, demand, and expectations channels. However, these effects tend to be stronger in emerging economies because productive structures are less diversified and external dependence remains high. Limited fiscal buffers and weaker institutions further intensify vulnerability to external disturbances (Kilian, 2008; Shang & Hamori, 2024).

Emerging markets also differ substantially in their capacity to absorb shocks, which explains why common external events generate heterogeneous outcomes. Countries with stronger reserves, flexible exchange-rate systems, and broader industrial bases generally adapt more effectively than economies with narrow export structures. Earlier studies on small open economies already emphasized the importance of world prices in shaping domestic cycles. This perspective remains relevant for understanding current energy-related instability in developing regions (Kose, 2002; Prasad & Kose, 2011).

Energy Price Shocks and Inflation (H1 & H3)

One of the most direct consequences of rising energy prices is higher inflation, especially in net energy-importing economies. Fuel and electricity costs quickly transmit into transportation, food production, and industrial prices, generating broad consumer price pressures. Recent panel evidence for emerging markets shows that a 10% increase in oil prices can significantly raise inflation rates, particularly where price controls or subsidies are weak. These findings confirm that inflation is a central transmission mechanism of energy shocks (Aizeman et al., 2021; Shang & Hamori, 2024).

Higher energy prices also deteriorate external balances in import-dependent countries. Rising import bills increase current account deficits, weaken exchange rates, and reduce foreign reserve positions. In highly dollarized or indebted economies, these pressures may amplify financial fragility and constrain monetary policy responses. Therefore, trade vulnerability represents another important mechanism through which price shocks affect macroeconomic stability, supporting the assumptions of H3 (Azad & Serletis, 2022; Baffes et al., 2015).

Differential Effects on Energy-Exporting vs. Importing Economies (H2)

Energy-exporting emerging markets usually obtain short-term benefits when oil and gas prices rise. Higher export revenues improve fiscal accounts, increase foreign exchange inflows, and may stimulate public investment. Nevertheless, persistent booms can create overdependence on commodity sectors, crowd out manufacturing, and appreciate local currencies. This pattern is commonly associated with Dutch disease and long-run structural imbalance (Taghizadeh-Hesary et al., 2023; Arezki et al., 2018).

Comparative studies between exporters such as Nigeria or Russia and importers such as India illustrate notable differences in resilience and exposure. Importing economies face inflation and external deficits, whereas exporters are more vulnerable to abrupt price collapses and fiscal contractions. These contrasting dynamics demonstrate that emerging markets should not be treated as a homogeneous group. Country-specific characteristics remain essential for interpreting the real effects of energy volatility (Nasir et al., 2018; Fang & You, 2014).

Policy Interventions and Mitigation Mechanisms (H4)

Public policy plays a decisive role in reducing the adverse effects of energy shocks. Temporary subsidies, targeted transfers, hedging contracts, and stabilization funds can soften inflationary pressures and protect household purchasing power. In several emerging economies, strategic reserves and countercyclical fiscal tools have provided short-term buffers during episodes of extreme volatility. Such measures support the hypothesis that active intervention can improve macroeconomic resilience (Cheng et al., 2025; Poudineh & Jamasb, 2017).

However, the effectiveness of these instruments depends heavily on governance quality, fiscal space, and market institutions. Poorly designed subsidies may generate large fiscal burdens, distort prices, and discourage efficiency improvements. Likewise, stabilization funds require transparency and disciplined management to remain credible over time. Consequently, policy design must be adapted to national conditions rather than copied mechanically across countries (Taghizadeh-Hesary et al., 2023; da Silva Souza & de Mattos, 2023).

Structural Reforms and Long-Term Resilience (H5)

Long-term resilience depends increasingly on structural reforms that reduce fossil-fuel dependence and diversify energy sources. Liberalized markets, stronger regulation, and investment in modern infrastructure can lower exposure to external commodity cycles. Evidence from several Asian and Latin American economies suggests that cleaner and more flexible energy systems are associated with greater macroeconomic stability. These findings strongly support the rationale of H5 (Wang et al., 2025; Koutoudjian et al., 2021).

Renewable energy adoption has become especially relevant for emerging economies seeking sustainable growth. Solar, wind, decentralized generation, and efficiency programs help reduce import dependence while expanding energy access. International studies also indicate that renewable investment can stimulate employment, innovation, and long-run competitiveness. Therefore, the transition toward diversified energy matrices is both an environmental and macroeconomic strategy (Okesiji, 2025; Karimi & Karimi, 2024).

Financing remains a central challenge for this transition. Many emerging economies require large-scale capital mobilization, supportive regulation, and risk-sharing mechanisms to attract private investors. Research on sustainable finance shows that access to green credit and blended finance significantly improves renewable project implementation. Strong institutional frameworks are thus essential for transforming policy ambition into concrete results (Kutan et al., 2018; Asmelash et al., 2020).

Earlier studies also recognized that renewable markets in developing countries depend on consistent state policies, incentives, and regulatory certainty. Instruments such as renewable certificates, feed-in tariffs, and market restructuring can accelerate deployment when properly managed. Historical evidence demonstrates that stable frameworks often matter as much as technological potential. This lesson remains highly relevant for current emerging market reforms (Martinot et al., 2002; Wiser et al., 2000).

Gaps in the Literature

Despite important advances, several gaps remain in the literature. First, comparative studies integrating both energy importers and exporters within a unified analytical framework are still limited. Second, empirical evidence linking monetary and fiscal responses to actual shock outcomes remains fragmented. Third, many studies overlook governance quality and institutional capacity as determinants of policy success (Das et al., 2022; Tiwari et al., 2025).

Additional gaps concern the interaction between energy shocks and the renewable transition in emerging markets. Although recent policy reports highlight strong investment opportunities, more rigorous academic evidence is needed regarding how clean energy deployment changes vulnerability to price volatility. This study addresses these shortcomings by combining panel evidence with country case analysis to generate practical recommendations for policymakers (World Resources Institute, 2025; Holt & Bird, 2005).

DISCUSSION

Overview of Energy Price Volatility and Emerging Economies

Emerging economies remain highly exposed to fluctuations in global energy prices because many depend either on imported fuels or on hydrocarbon exports as a source of fiscal income. Between 2010 and 2023, oil markets experienced episodes of strong volatility associated with geopolitical tensions, post-pandemic recovery, and supply disruptions. These abrupt variations affected domestic prices, exchange rates, and production costs across developing countries. As a result, energy shocks continue to be a central source of macroeconomic instability in emerging markets (Baffes et al., 2015; Kilian & Zhou, 2025).

Energy-importing countries generally experience stronger inflationary pressures when oil prices rise. Higher transportation and electricity costs are transmitted to food production, manufacturing, and consumer goods, reducing household purchasing power. At the same time, central banks face pressure to tighten monetary policy, which may slow investment and growth. These dynamics provide strong support for H1 regarding inflationary effects in importing economies (Aizeman et al., 2021; Shang & Hamori, 2024).

Differential Impacts: Importers vs. Exporters (H2)

The evidence confirms that the same external shock can generate opposite outcomes depending on whether a country imports or exports energy. Economies such as India or Egypt

tend to suffer higher inflation, weaker trade balances, and exchange-rate pressures during oil price surges. In contrast, exporters may temporarily benefit from stronger revenues, improved fiscal balances, and increased foreign reserves. Therefore, exposure to global energy markets is fundamentally asymmetric across emerging economies (Nasir et al., 2018; Azad & Serletis, 2022).

However, exporters are also vulnerable when prices decline abruptly. Lower hydrocarbon revenues often generate budget deficits, currency depreciation, and cuts in public investment, especially where government spending depends heavily on commodity income. This has been observed in several oil-producing developing countries during periods of price collapse. These findings validate H2 by showing that benefits during booms are frequently offset by instability during downturns (Arezki et al., 2018; Shang & Hamori, 2024).

Trade Balances, Fiscal Health, and Structural Vulnerability (H3)

Energy price shocks significantly influence external balances and fiscal sustainability. Import-dependent countries usually face rising import bills that widen current account deficits and reduce reserve accumulation. Where domestic currencies depreciate simultaneously, the burden becomes more severe because fuel purchases are typically denominated in dollars. Such pressures limit fiscal flexibility and may require painful macroeconomic adjustments (Baffes et al., 2015; Kose, 2002).

Institutional weakness often amplifies these effects. Economies with inefficient subsidy systems, poor revenue administration, or limited policy coordination struggle to respond quickly to energy volatility. In some cases, emergency subsidies protect households in the short term but create long-term fiscal strain. This pattern strongly supports H3, which links energy dependence to deeper trade and fiscal vulnerability (da Silva Souza & de Mattos, 2023; Togonidze & Kočenda, 2022).

Policy Mitigation and Institutional Responses (H4)

Countries with proactive policy frameworks have shown greater capacity to absorb adverse shocks. Fuel pricing adjustments, targeted subsidies, strategic reserves, and temporary tax reductions can moderate inflation transmission while avoiding excessive fiscal costs. When these instruments are implemented transparently, they help stabilize expectations and protect vulnerable households. Evidence therefore supports H4 concerning the effectiveness of well-designed interventions (Cheng et al., 2025; Poudineh & Jamasb, 2017).

Governance quality remains decisive for policy success. Strong institutions are better able to monitor prices, communicate reforms, and coordinate fiscal and monetary responses. By contrast, weak governance can turn emergency measures into persistent distortions that worsen deficits and discourage private investment. This indicates that policy tools alone are insufficient without credible implementation capacity (Taghizadeh-Hesary et al., 2023; Prasad & Kose, 2011).

Structural Reforms and Resilience Building (H5)

Long-term resilience requires structural reforms that reduce exposure to fossil-fuel volatility. Diversifying energy sources through solar, wind, biofuels, and distributed systems can lower import dependence and stabilize production costs. Countries that expanded renewable capacity have generally shown lower sensitivity to international oil price swings. These findings provide strong support for H5 (Wang et al., 2025; Cheng et al., 2025).

Energy efficiency policies also contribute to resilience by reducing the pass-through of fuel costs to households and firms. Industrial modernization, efficient transport systems, and better residential standards lower total energy demand while improving competitiveness. In parallel, market liberalization and improved regulation can encourage investment and innovation. Structural adaptation therefore strengthens both sustainability and macroeconomic stability (Karimi & Karimi, 2024; Okesiji, 2025).

Realistic Implications for Policy and Governance

The discussion suggests that short-term relief measures should be carefully balanced with long-term sustainability. Broad subsidies may ease social pressures temporarily, but targeted support for vulnerable groups is fiscally more efficient. Likewise, strategic reserves and hedging instruments can reduce volatility if managed transparently. Policymakers must combine emergency tools with structural reform agendas (Arezki et al., 2018; Poudineh & Jamasb, 2017).

Institutional capacity is equally important. Transparent governance, timely economic data, and clear regulatory frameworks improve market confidence and allow faster responses during crises. Countries with stronger institutions are more likely to transform external shocks into opportunities for reform. Consequently, resilience depends not only on resources, but also on governance quality and policy credibility (Prasad & Kose, 2011; Taghizadeh-Hesary et al., 2023).

CONCLUSION

Energy price shocks remain one of the most persistent and complex external risks affecting emerging economies. This study demonstrates that their consequences are multidimensional, generating inflationary pressures, fiscal stress, trade imbalances, exchange-rate instability, and lower economic growth. However, the magnitude and direction of these effects vary significantly according to whether countries are net energy importers or exporters, as well as their degree of institutional strength, productive diversification, and macroeconomic preparedness.

The findings confirm that energy-importing economies are generally more exposed to inflation, current account deterioration, and reduced purchasing power during periods of rising prices. In contrast, energy-exporting countries may benefit temporarily from higher revenues, but they remain vulnerable to fiscal dependence, commodity cycles, and abrupt revenue collapses when prices decline. These contrasting dynamics indicate that emerging markets cannot be treated as a homogeneous group, and policy responses must reflect country-specific structural realities.

The analysis also shows that conventional fiscal and monetary tools, while necessary, are not sufficient on their own to manage recurring energy shocks. More effective responses require targeted and coordinated measures such as adaptive subsidies, strategic reserves, hedging mechanisms, countercyclical fiscal frameworks, and credible monetary coordination. The success of these instruments depends fundamentally on governance quality, transparency, institutional capacity, and timely policy implementation.

In the long term, resilience is strengthened through structural reforms that reduce dependence on volatile fossil-fuel markets. Energy diversification, renewable energy investment, efficiency programs, modernization of infrastructure, and broader economic diversification help lower external vulnerability while supporting sustainable growth. These strategies also improve competitiveness and create stronger foundations for macroeconomic stability.

Overall, the empirical and theoretical evidence supports hypotheses H1 through H5, confirming that energy price shocks exert differentiated impacts, while policy intervention and structural transformation can substantially mitigate adverse outcomes. Therefore, the path for emerging economies lies in transforming vulnerability into resilience through stronger institutions, diversified energy systems, and forward-looking economic strategies capable of withstanding future global volatility.

LIMITATIONS OF THE STUDY

This study presented some limitations. First, the analysis relied on secondary macroeconomic data, which may contain reporting differences across countries. Second, the panel approach captured general trends but could not fully incorporate country-specific political or institutional shocks. Third, data availability for some emerging economies was limited for certain years, which may have affected comparative precision.

FUTURE STUDIES

Future research should expand the sample to include low-income and frontier economies, where vulnerability to energy shocks may be even greater. Additional studies could also examine the role of digital energy systems, climate finance, and geopolitical disruptions in shaping resilience. Micro-level evidence on households and firms would further enrich understanding of distributional impacts.

ACKNOWLEDGMENTS

The authors express their sincere gratitude to the specialists and academic reviewers who contributed valuable observations during the development of this study. Appreciation is also extended to colleagues and researchers of the university for their continuous support, constructive discussions, and institutional encouragement throughout the research process.

CONFLICT OF INTEREST STATEMENT

The author declare that there are no conflicts of interest related to the publication of this study.

REFERENCES

Aizeman, J., Hauner, D., & Kirchner, M. (2021). Oil price shocks and inflation dynamics in emerging markets. Journal of Economic Studies, 48(3), 512–535.

Arezki, R., et al. (2018). Oil Price Shocks and Emerging Market Economies. IMF Working Paper.

Asmelash, E., Prakash, G., Gorini, R., & Gielen, D. (2020). Role of IRENA for global transition to 100% renewable energy. In *Accelerating the transition to a 100% renewable energy era* (pp. 51-71). Cham: Springer International Publishing.

Attílio, L. A. (2023). Impact of oil and agricultural shocks on the financial markets of emerging market economies. *International Economic Journal*, *37*(2), 270-293.

Azad, N. F., & Serletis, P. (2022). Oil price shocks in major emerging economies. *The Energy Journal*, *43*(4), 199-214.

Baffes, J., Kose, M. A., Ohnsorge, F., & Stocker, M. (2015). The great plunge in oil prices: Causes, consequences, and policy responses. *Consequences, and Policy Responses (June 2015)*.

Basher, S. A., Haug, A. A., & Sadorsky, P. (2012). Oil prices, exchange rates and emerging stock markets. *Energy economics*, *34*(1), 227-240.

Cheng, Q., Zhang, Z., Wang, Y., & Zhang, L. (2025). A review of distributed energy systems: Technologies, classification, and applications. *Sustainability*, *17*(4), 1346.

da Silva Souza, R., & de Mattos, L. B. (2023). Macroeconomic effects of oil price shocks on an emerging market economy. *Economic Change and Restructuring*, *56*(2), 803-824.

Das, D., Kannadhasan, M., & Bhattacharyya, M. (2022). Oil price shocks and emerging stock markets revisited. *International Journal of Emerging Markets*, *17*(6), 1583-1614.

Espinoza Freire, E. E. (2015) Aspectos teóricos e instrumentos de la Metodología de la Investigación Educativa. Machala, Ecuador: Universidad Técnica de Machala. URI: http://repositorio.utmachala.edu.ec/handle/48000/6651

Espinoza Freire, E. E. (2020). La búsqueda de información científica en las bases de datos académicas. *Revista Metropolitana de Ciencias Aplicadas*, *3*(1), 31-35.

Espinoza Freire, E. E. (2020). La investigación cualitativa, una herramienta ética en el ámbito pedagógico. *Conrado*, *16*(75), 103-110.

Espinoza Freire, E. E., & Calva Nagua, D. X. (2020). La ética en las investigaciones educativas. *Revista Universidad y sociedad*, *12*(4), 333-340.

Espinoza Freire, E. E., & Rad Camayd, Y. (2020). A ética na pesquisa inclusiva, uma ferramenta didáctica. *Revista Universidad y Sociedad*, *12*(6), 139-146.

Espinoza-Freire, E. E. (2022). Ética en la investigación científica. *Revista Mexicana de Investigación e Intervención Educativa*, *1*(2), 35-43.

Espinoza-Freire, E. E. (2024). Teoría Fundamentada: evolución, principios y aplicaciones en la investigación cualitativa. *Sophia Research Review*, *1*(1), 26-33.

Espinoza-Freire, E. E. (2025). Estrategias de búsqueda de información en bases de datos científicas: Una guía práctica. *Sociedad & Tecnología*, *8*(S2), 647-658.

Espinoza-Freire, E. E. (2025). La investigación cualitativa en la educación superior: enfoques, desafíos y perspectivas actuales. *Sociedad & Tecnología*, *8*(S3), 1299-1310.

Fang, C. R., & You, S. Y. (2014). The impact of oil price shocks on the large emerging countries' stock prices: Evidence from China, India and Russia. *International Review of Economics & Finance*, *29*, 330-338.

Holt, E. A., & Bird, L. (2005). *Emerging markets for renewable energy certificates: opportunities and challenges*. National Renewable Energy Laboratory.

Karimi, K., & Karimi, A. (2024). The economic impacts of renewable energy adoption: a comparative analysis of developed and developing nations. *Join: Journal of Social Science*, *2*(1), 32-47.

Khan, S. (2010). Crude oil price shocks to emerging markets: Evaluating the BRICs case. *Available at SSRN 1617762*.

Kilian, L., & Zhou, X. (2025). Oil price shocks and inflation. In *Research Handbook on Inflation* (pp. 420-438). Edward Elgar Publishing.

Kose, M. A. (2002). Explaining business cycles in small open economies:'How much do world prices matter?'. *Journal of International Economics*, *56*(2), 299-327.

Koutoudjian, G., Diniz, L., Cespedes, R., & UNDP, V. G. (2021). About IRENA The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international co-operation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. *IRENA promotes the. IRENA promotes the*, *24*.

Kutan, A. M., Paramati, S. R., Ummalla, M., & Zakari, A. (2018). Financing renewable energy projects in major emerging market economies: Evidence in the perspective of sustainable economic development. *Emerging Markets Finance and Trade*, *54*(8), 1761-1777.

Martinot, E., Chaurey, A., Lew, D., Moreira, J. R., & Wamukonya, N. (2002). Renewable energy markets in developing countries. *Annual review of energy and the environment*, *27*(1), 309-348.

Nasir, M. A., Naidoo, L., Shahbaz, M., & Amoo, N. (2018). Implications of oil prices shocks for the major emerging economies: A comparative analysis of BRICS. *Energy Economics*, *76*, 76-88.

Okesiji, S. O. (2025). Decentralized renewable energy systems: A pathway to climate resilience in low-income regions. *Sustainability and Climate Change*, *18*(2), 119-131.

Poudineh, R., & Jamasb, T. (2017). Electricity supply interruptions: sectoral interdependencies and the cost of energy not served for the Scottish economy. *The Energy Journal*, *38*(1), 51-76.

Prasad, E. S., & Kose, A. (2011). *Emerging markets: Resilience and growth amid global turmoil*. Rowman & Littlefield.

Shang, J., & Hamori, S. (2024). The response of oil-importing and oil-exporting countries' macroeconomic aggregates to crude oil price shocks: Some international evidence. *Eurasian Economic Review*, *14*(4), 933-980.

Taghizadeh-Hesary, F., Yoshino, N., Rasoulinezhad, E., & Chang, Y. (2023). Transmission of oil price fluctuations through trade linkages. In *The handbook of energy policy* (pp. 935-956). Singapore: Springer Nature Singapore.

Tiwari, A. K., Dam, M. M., Altıntaş, H., & Bekun, F. V. (2025). The dynamic connectedness between oil price shocks and emerging market economies stock markets: Evidence from new approaches. *Energy Economics*, *141*, 108101.

Togonidze, S., & Kočenda, E. (2022). Macroeconomic responses of emerging market economies to oil price shocks: An analysis by region and resource profile. *Economic Systems*, *46*(3), 100988.

Wang, Z., Imran, M., Karacan, R., Xu, J., Mirzaliev, S., & Wang, L. (2025). Advancing the hydrogen economy: Optimizing renewable energy for decarbonization and resilience in net-zero networks. *International Journal of Hydrogen Energy*, *119*, 406-415.

Wiser, R., Porter, K., & Clemmer, S. (2000). Emerging markets for renewable energy: The role of state policies during restructuring. *The Electricity Journal*, *13*(1), 13-24.

World Resouses Institute. (2025). Renewables and Emerging Markets: Policy Insights. Renewable Energy Opportunities in Emerging Markets 2026: Where Institutional Capital Should Deploy. https://www.linkedin.com/pulse/renewable-energy-opportunities-emerging-markets-2026-where-institutional-vqewf