บทบาทของการถือหุ้นโดยชาวต่างชาติในบริษัทผลิตไฟฟ้า: ผลกระทบต่อผลการดำเนินงานของบริษัทและการกำหนดราคาค่าไฟฟ้าในประเทศลาว
The Role of foreign Ownership in Electric Power Companies: Implications for Firm Performance and Electricity Pricing in Laos

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บทคัดย่อ (Abstract)

การศึกษานี้มีวัตถุประสงค์เพื่อวิเคราะห์ผลของการถือหุ้นโดยนักลงทุนชาวต่างชาติที่มีต่อสมรรถนะทางการเงินของบริษัทผลิตไฟฟ้าและอัตราค่าไฟฟ้าภาคครัวเรือนในประเทศลาว โดยใช้ข้อมูลรายเดือนของตัวแปร 10 รายการในช่วงเดือน มกราคม 2556 – ธันวาคม 2567 และประมาณการแบบจำลองด้วยเวกเตอร์ออโตรีเกรสชัน ซึ่งกำหนดความล่าช้าที่เหมาะสมที่สุดเป็น 2 เดือนตามเกณฑ์ Schwarz-Bayesian และ Hannan-Quinn รวมถึงการทดสอบส่วนเหลือด้วย Lagrange-Multiplier ผลการวิจัยไม่พบหลักฐานเชิงสถิติว่าสัดส่วนการถือหุ้นของนักลงทุนชาวต่างชาติมีผลต่อความสามารถในการทำกำไรของบริษัทหรืออัตราค่าไฟฟ้าภายในระยะเวลาหนึ่งปีแรก ซึ่งบ่งชี้ว่าการถือหุ้นของชาวต่างชาติเป็นกลางทางการเงินในระยะสั้น ในทางตรงกันข้าม สมรรถนะของกิจการและค่าไฟฟ้าภาคครัวเรือนถูกกำหนดโดยแรงกระแทกจากอัตราแลกเปลี่ยนเป็นหลัก โดยเมื่อค่าเงินกีบอ่อนค่าลงเมื่อเทียบกับดอลลาร์สหรัฐ อัตราผลตอบแทนต่อทุนจะปรับเพิ่มขึ้นชั่วคราว และการอ่อนค่านี้จะถูกส่งผ่านไปยังค่าไฟฟ้าปลีกบางส่วน ผลการวิจัยชี้ว่า ผู้กำหนดนโยบายควรให้ความสำคัญกับการบริหารความเสี่ยงจากอัตราแลกเปลี่ยน เช่น การใช้กลยุทธ์การป้องกันความเสี่ยงและการกำหนดค่าไฟฟ้าที่ปรับตามอัตราแลกเปลี่ยนโดยอัตโนมัติ มากกว่าการจำกัดสัดส่วนการถือหุ้นของนักลงทุนชาวต่างชาติ

คำสำคัญ (Keywords) : การถือหุ้นโดยนักลงทุนต่างชาติ, อัตราผลตอบแทนของผู้ถือหุ้น, อัตราค่าไฟฟ้า, ผลการดำเนินงานของบริษัท, ประเทศลาว

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Abstract

This study aims to analyze the effects of foreign investor ownership on the financial performance of electric power companies and household electricity tariffs in Laos. Utilizing monthly data for ten variables from January 2013 to December 2024, a vector autoregression model was estimated, with the optimal lag length determined to be two months based on the Schwarz-Bayesian and Hannan-Quinn criteria, along with the residual testing using the Lagrange Multiplier (LM) test. The findings reveal no statistically significant evidence that foreign equity participation impacts company profitability or electricity prices within the first year, indicating that foreign ownership is financially neutral in the short run. Instead, firm performance and residential tariffs are primarily driven by exchange-rate shocks; specifically, a weakening of the Lao Kip against the USD temporarily boosts return on equity, and currency depreciation is partially passed through to retail tariffs. The findings suggest that policymakers should prioritize managing currency risk—through hedging strategies and automatic FX-adjusted tariffs—rather than limiting foreign ownership

Keywords : Foreign Ownership, Return on Equity, Electricity Price, Firm Performance, Laos

Introduction

Laos has seen significant economic growth in recent decades, primarily driven by its natural resources. Among these resources, hydropower stands out as the cornerstone of the country's energy production. Laos is often referred to as the "battery of Southeast Asia" due to its vast untapped hydroelectric potential, estimated to be more than 26,000 MW (Phongsavath & Phoumin, 2024 and Carley & Lawrence, 2014). With rivers like the Mekong River and its tributaries, the country is strategically positioned to develop a strong hydroelectric power sector, which has become a major focus for both domestic and international stakeholders.

In recent years, Laos has made significant strides in expanding its electric power generation capacity, mainly through the construction of large hydropower plants (Phongsavath & Phoumin, 2024 and Chowdhury et. al., 2020). The electric power sector is central to the country's long-term economic development plans, as energy demand is expected to grow substantially, driven by rising industrialization, urbanization, and regional integration. To harness this growth potential, the Laotian government has prioritized energy development as part of its broader economic policies, with a focus on clean and renewable energy (Nepal et. al., 2021).

The electricity sector in Laos is composed of various key players, including state-owned enterprises, joint ventures, and private sector firms. The country's electricity production is largely controlled by the Electricité du Laos (EDL) or EDL Generation Public Company, a state-owned company responsible for the country's electricity transmission, distribution, and retail activities (Yokota & Kutani, 2017). However, Laos has increasingly relied on foreign investments to build

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and expand its power generation infrastructure, as domestic capacity is insufficient to meet the growing demand for electricity (Sims, 2024).

Laos' reliance on foreign investment in the energy sector has been a key driver of its economic growth. Due to the immense capital required to develop large-scale hydropower projects, the country has turned to international investors to fund its energy infrastructure development plans. Foreign investments have come from a range of countries and companies, particularly from neighboring Thailand, Vietnam, China, and Malaysia, which have played a pivotal role in financing and operating hydropower plants (Phetpaseuth, 2017).

The most prominent form of foreign involvement in Laos' power sector is the public-private partnership (PPP) model, where foreign companies partner with the Lao government to develop hydropower projects. These joint ventures typically involve the foreign companies providing the financial capital and technical expertise, while the Lao government contributes to the regulatory framework, land allocation, and infrastructure support. A notable example is the Nam Theun 2 hydropower project, which was jointly developed by the Lao government, the Thai electricity utility EGAT, and a consortium of international investors. This project has become one of the flagship examples of successful foreign investment in the Lao hydropower sector, and it has helped to establish Laos as a key electricity exporter to neighboring countries, particularly Thailand.

While foreign investments have been crucial in the development of Laos' energy infrastructure, they have also raised concerns regarding the sustainability of such investments. Critics argue that Laos' dependence on foreign capital and expertise has created a one-sided economic model that benefits foreign investors, with the risk of limited returns for the domestic population (St. John, 2006). Additionally, there are concerns about the environmental impact of hydropower projects, as many of them are located in ecologically sensitive areas that may be affected by large-scale dam construction (Olson & Frenelus, 2024).

As shown in the Table 1, the ownership structure of EDL often involves significant foreign ownership, which has led to questions about control over the electricity generation sector. With a growing percentage of the power sector in foreign hands, the pricing and distribution of electricity may be influenced by the interests of foreign corporations rather than the long-term needs of the Lao population (Kenney-Lazar, 2023). This is especially relevant when considering the growing demand for electricity in Laos and the regional electricity trade dynamics within Southeast Asia.

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Table 1: The ownership structure of Electricité du Laos (EDL) classified by nationalities (As of 20 March 2025)

Shareholders by Nationalities	Number of Shareholders	Number of Share	%
Lao Shareholders	2,972	1,488,210,654	88.62
Foreign Shareholders	836	191,093,043	11.38
Totals	3,736	1,679,303,697	100.00

Sources: Shareholder Structure (2025, March 20)

As Laos continues to rely on foreign investment for the development of its energy infrastructure, electricity pricing has become a crucial issue in the sector. The pricing of electricity in Laos is determined by a combination of factors, including the cost of production, the need to attract further investment, and political considerations. Electricity pricing is a particularly sensitive issue in a country like Laos, where poverty rates remain relatively high (Handayani, et. al., 2023), and access to affordable electricity is considered a key component of improving the living standards of its population.

The electricity tariff structure in Laos has been historically influenced by the cost-plus pricing model, where electricity prices are set to cover the costs of generation and transmission, plus a margin for profit (Shyu, 2022). However, the pricing model has evolved in recent years to reflect the increasing role of market-driven pricing, especially as Laos begins to export electricity to neighboring countries such as Thailand (Sythongbay, 2021). As the country expands its electricity production and exports, pricing strategies have become more complex, with the need to balance domestic affordability with the attractiveness of export markets.

The government of Laos plays a significant role in regulating electricity prices. This is important because the pricing of electricity can directly affect the financial performance of the EDL. When electricity prices are set too low, it can lead to financial strain on the EDL performance, limiting their ability to reinvest in infrastructure or repay loans. On the other hand, excessively high electricity prices can create social unrest and political challenges, particularly for low-income households that are already struggling to afford basic services. Moreover, the Laotian electricity market is closely tied to the regional electricity market in Southeast Asia, which adds an additional layer of complexity to pricing decisions. The prices at which Laos sells electricity to these countries can significantly influence the pricing structure within Laos. If foreign ownership in the electric power sector results in higher electricity prices for domestic consumers, it could reduce the overall competitiveness of the Lao economy, particularly for industries that rely on affordable energy. Furthermore, market liberalization and the introduction of privatization in Laos' energy sector are pushing the country toward a more competitive pricing environment. As more foreign-owned companies

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enter the market, the government faces increasing pressure to deregulate prices and allow market forces to set electricity tariffs (Jamasb, 2006).

The link between foreign ownership in Laos' electric power companies and its effects on firm performance and electricity pricing is crucial in understanding the dynamics of the country's energy sector. Foreign investments, particularly from regional partners like Thailand, China, and Vietnam, have provided Laos with the necessary capital and expertise to expand its hydropower capacity. As foreign-owned companies bring in advanced technologies and international best practices, they can enhance the operational efficiency and financial performance of electric power companies, leading to improved profit margins and return on investments. However, the high level of foreign ownership in this company also creates a dual challenge. Hence, striking a balance between attracting foreign capital and maintaining affordable electricity prices is imperative for sustainable sectoral development.

This research is expected to provide valuable insights into the impact of foreign ownership on the performance of electric power companies and electricity pricing in Laos. By analyzing the relationship between foreign investment and firm efficiency, this study will provide policymakers understand how international capital influences the sustainability and competitiveness of the country’s energy sector. Additionally, the findings will contribute to discussions on electricity tariff regulation, ensuring that pricing strategies balance the needs of attracting investment with maintaining affordability for domestic consumers.

Research Objectives

This study aims; (1) To examine the impact of foreign ownership on the financial performance and operational efficiency of electric power companies in Laos, focusing on whether foreign investment contributes to improvements in profitability, cost efficiency, and technological advancement. (2) To evaluate how foreign ownership affects electricity pricing and its affordability for domestic consumers, particularly whether pricing strategies under foreign-controlled projects align with the economic conditions of the Lao population.

Literature Review

In emerging economies, electricity markets face the dual challenge of meeting rising demand while ensuring financial sustainability and price affordability. Industrialization and regional integration drive electricity demand growth in Southeast Asia (Nepal et al., 2021). Laos, for instance, leverages its hydropower capacity to become the "battery of Southeast Asia" (Phongsavath & Phoumin, 2024), similar to Cambodia and Myanmar’s renewable energy strategies aimed at balancing domestic needs and export opportunities (Handayani et al., 2023).

Electricity pricing is a core regulatory issue, often balancing cost recovery with affordability. Jamasb (2006) noted that cost-plus pricing dominates regulated markets, leading to price rigidity despite macroeconomic shocks. More recent work highlights shifts toward market-oriented pricing under regional energy trade pressures (Shyu, 2022). In Laos, tariffs are partly indexed to foreign exchange fluctuations due to dollar-denominated power purchase agreements, exposing pricing to currency volatility (Sims, 2024). This nexus between macro-financial factors and electricity pricing underscores the value of VAR models in capturing dynamic interdependencies.

Foreign direct investment (FDI) is often viewed as a driver of infrastructure and technology transfer in power markets. Pasali and Chaudhary (2020) found FDI improved firm performance through capital and expertise, contingent on regulation and firm size. Willmore (1986) observed foreign-owned firms outperforming domestic peers in Brazil, while Mihai and Mihai (2013) found no significant ownership-performance link in Romania, suggesting complementary reforms are needed to realize efficiency gains. In electricity specifically, foreign ownership is often tied to public-private partnerships financing major projects (Phetpaseuth, 2017). While such investment bolsters infrastructure, it raises concerns over affordability and control, especially when foreign interests prioritize returns (Kenney-Lazar, 2023). Barteková and Ziesemer (2019) showed electricity prices shape FDI inflows in the EU, illustrating the two-way link between pricing and investment. High tariffs can deter industrial FDI, while concentrated foreign ownership may strain domestic consumers—an interplay that warrants integrated analysis.

The sector is also deeply exposed to macroeconomic volatility. Exchange rate swings affect utilities reliant on foreign-denominated inputs or debt. Studies in small open economies show depreciation can temporarily lift profits (via exports) but eventually raise tariffs through import cost pass-through (Olson & Frenelus, 2024). Inflation similarly erodes affordability and pressures regulators to cap tariffs (Handayani et al., 2023). These shocks often have lagged effects: Shyu (2022) showed regulated tariff adjustments trail cost shocks, reinforcing the use of lagged dynamic models like VAR.

VAR models are widely used in energy economics to examine price shocks, policy reforms, and macro linkages. Pao and Tsai (2010) applied VAR to study energy use, growth, and emissions in emerging markets, finding bidirectional causality. Zhang and Broadstock (2016) used VAR to trace oil price shock transmission through China's electricity and industry. In regulated utilities, impulse-response analysis via VAR reveals how exchange rate or fuel price shocks influence tariffs and utility performance over time (Mensi et al., 2014). Despite their extensive use, few studies apply VAR to jointly examine foreign ownership, firm performance, and pricing in developing electricity sectors. This gap is notable in Southeast Asia, where rapid electrification, FDI reliance, and macro volatility create a distinct context.

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This study builds on three strands: (1) foreign ownership and firm performance, (2) electricity pricing and macroeconomic shocks, and (3) VAR applications in energy economics. Unlike prior work treating these in isolation, we integrate them within a unified VAR framework to capture simultaneous interactions in Laos' electricity sector. This addresses a gap in understanding how foreign equity interacts with macro shocks and regulation to influence firm performance and pricing in an emerging energy exporter. Our novelty lies in focusing on short-run dynamics using high-frequency (monthly) data, ideal for assessing immediate effects of exchange rate movements and demand shocks. This contrasts with FDI-performance studies using annual data, which miss near-term adjustments. We also quantify the relative importance of ownership versus macro drivers, informing whether regulatory focus should prioritize ownership caps or macro-financial stabilization.

In sum, while foreign ownership, pricing, and macro shocks are well-studied individually, their integrated dynamics remain underexplored. Applying VAR to Laos' electricity sector bridges these strands, offering empirical insights into how ownership, macro-financial volatility, and regulation jointly shape utility performance and tariff outcomes in small, export-oriented economies.

Research Methods

1. Data Collection

To analyze the impact of foreign ownership on the financial performance and electricity pricing of Laos' energy sector (EDL), this study will collect both quantitative and qualitative data from multiple sources. The study collects numerical data from official reports, financial statements, and statistical sources to analyze trends and relationships between foreign ownership and key performance indicators. The primary sources of quantitative data include financial data of the EDL which are return on equity (ROE), return on assets (ROA) and their cost efficiency metrics, including operational costs and debt-to-equity ratios. We also collect the percentage of foreign ownership and market capitalization data for studying their relationship. Moreover, the historical electricity pricing will be gathered. In addition, the macroeconomic and socioeconomic indicators which are foreign exchange, inflation rate and electricity consumption levels will be incorporated in this study.

The inclusion of 10 endogenous variables is grounded in the literature linking firm-level performance (ROA, ROE, debt-to-equity ratio, operating expenses, market capitalization), electricity pricing (domestic tariff, electricity consumption), and macro-financial indicators (exchange rate, inflation) with foreign ownership effects in the power sector (Pasali & Chaudhary, 2020; Barteková & Ziesemer, 2019). These variables collectively capture the operational, financial, and regulatory dimensions critical for understanding electricity market dynamics.

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To complement the quantitative analysis, qualitative data will be collected to provide insights into the perspectives of key stakeholders. We purposively interview the government officials from the Ministry of Energy and Mines (MEM) and EDL. In addition, we also interview the representatives from foreign energy companies involved in Lao hydropower projects. Moreover, we did surveys of domestic electricity consumers (households and businesses) to understand affordability and satisfaction levels.

2. Data Analysis and Analytical Method

To capture the dynamic, multi-directional relationships among firm-level, market, and macro-financial variables, this study employs an unrestricted vector autoregression of order *p*, denoted VAR (*p*).

Let

$$\mathbf{Y}_t = \left[ROA_t \quad ROE_t \quad PRICE_t \quad FOwn_t \quad OExp_t \quad DE_t \quad MktCap_t \quad FX_t \quad INF_t \quad ECon_t\right]'$$

represent the 10-dimensional vector of endogenous monthly series for $t =$ 2013M1,...,2024M12. The reduced-form VAR (p) is specified as

$$\mathbf{Y}_t = \mu + \sum_{k=1}^{p} \Phi_k \mathbf{Y}_{t-k} + \varepsilon_t, \qquad \varepsilon_t \sim i.i.d.(0, \Sigma),$$

where μ is a 10 × 1 intercept vector, $\Phi_k\left(k = 1,\ldots,p\right)$ are 10 × 10 coefficient matrices capturing lagged interactions, and ε_t is a white-noise innovation vector with covariance matrix Σ. All equations are estimated by ordinary least squares, yielding consistent and asymptotically efficient estimates because each right-hand-side regressor is predetermined.

3. Lag-length determination and diagnostics

The optimal lag order *p* is selected by jointly minimizing the Schwarz–Bayesian Information Criterion (BIC) and the Hannan–Quinn (HQ) statistic over candidate models with 1–12 lags, subject to residual serial-correlation Lagrange-Multiplier (LM) tests. Prior to estimation, each series is tested for stationarity using augmented Dickey–Fuller; non-stationary variables enter the VAR in first differences.

Research Results

The descriptive statistics shown in Table 2 reveal a power-sector landscape marked by moderate profitability and pronounced macro-financial volatility. On the firm side, the average return on assets (ROA) is 3.6 % with a median of 2.5%, indicating that many utilities cluster near low single-digit returns while a few highly profitable observations pull the mean upward (consistent with a standard deviation of 5.22%). Return on equity (ROE) shows a similar pattern (an average of 5.2 % versus a median of 5.1%) but with nearly double the dispersion (σ = 9.18 %) , underscoring how leverage and capital structure magnify earnings variability across companies. Operating expenses average roughly LAK 156 million, yet a standard deviation of

LAK 41 million suggests material cost heterogeneity, potentially driven by plant technology and input mixes. Despite this spread in costs, foreign ownership is relatively uniform (mean 16.35%, σ = 2.23%), implying that most firms sit near the statutory cap or typical joint-venture share, leaving limited cross-sectional variation to identify ownership effects in short-run econometric models.

Macro indicators paint a backdrop of price rigidity amid currency and inflation shocks. The mean residential electricity tariff is LAK 608 per kWh with a tight standard deviation of LAK 90, signaling a regulated environment where retail prices adjust slowly despite macro fluctuations. In contrast, the Lao kip has experienced substantial swings against the U.S. dollar (the exchange rate averages LAK 10,692 per USD with a wide σ of 4,361) while inflation averages 8.7% but ranges widely (σ = 11.09%), mirroring the pass-through of currency weakness into consumer prices. The debt-to-equity ratio averages 1.12, indicating that firms are modestly levered, yet the sizeable spread (σ = 0.78) suggests divergent risk profiles and capacity to absorb FX liabilities. Market capitalization shows the greatest absolute variability (mean LAK 3.77 billion, σ = 1.26 billion), reflecting the coexistence of small provincial utilities and larger nationally significant generators. Finally, the average national electricity consumption of 6,921 GWh (σ = 3,336 GWh) underscores robust but uneven demand growth, which, together with the macro volatility, frames the strategic and regulatory challenges highlighted in the empirical analysis.

Table 2 Descriptive Statistics of the Dataset

Considered Variables	Mean	Median	Standard Deviation (σ)
Return on Assets (***ROA***) (%)	3.60	2.50	5.22
Return on Equity (***ROE***) (%)	5.20	5.10	9.18
Domestic Electricity Price (***Price***) (LAK/kWh)	607.59	581.03	90.43
Foreign Ownership (***FOwn***) (%)	16.35	16.38	2.23
Operating Expenses (***OExp***) (Million LAK)	155.54	154.09	41.05
Debt to Equity Ratio (***DE***) (Times)	1.12	1.06	0.78
Market Capitalization (***MktCap***) (Million LAK)	3,765.60	4,000.00	1,263.93
Foreign Exchange (***FX***) (USD/LAK)	10,691.60	8,536	4,361.28
Inflation Rate (***INF***) (%)	8.73	3.92	11.09
Electricity Consumption Rate (***ECon***) (GWh)	6,920.53	5,005.00	3,336.16

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Prior to VAR estimation, Table 3, we conducted unit root tests using the Augmented Dickey–Fuller (ADF) test for each variable at level and first difference, selecting lag length based on the Schwarz–Bayesian Criterion (SBC) to minimize residual autocorrelation. Variables found to be non-stationary at level but stationary at first difference (I(1)) were differenced accordingly. All tests were conducted under both intercept-only and intercept-plus-trend specifications, with results evaluated at the 5% significance level. For robustness, we also employed the Phillips–Perron (PP) test, which adjusts for serial correlation and heteroskedasticity. The results confirmed that foreign ownership and return on equity are I(0), while domestic electricity price, operating expenses, debt-to-equity ratio, market capitalization, foreign exchange, electricity consumption rate, inflation rate, and return on assets are I(1). Variables integrated of order one were included in the VAR in their first-differenced form to avoid spurious regression.

Table 3 Unit Root and Structural Break Test Results

Variables	ADF (Level)	ADF (1st Diff.)	PP (Level)	PP (1st Diff.)	Zivot–Andrews (Break Date)	Stationarity
Foreign Ownership	-4.215 (I(0))	–	-4.198 (I(0))	–	2015M06 (Intercept)	I(0)
Return on Equity	-3.912 (I(0))	–	-3.876 (I(0))	–	2018M03 (Trend)	I(0)
Domestic Electricity Price	-1.876 (NS)	-6.452 *(I(1))	-1.895 (NS)	-6.487 *(I(1))	2020M04 (Trend + Intercept)	I(1)
Operating Expenses	-2.035 (NS)	-5.963 *(I(1))	-2.041 (NS)	-5.992 *(I(1))	2017M09 (Trend)	I(1)
Debt-to-Equity Ratio	-2.287 (NS)	-6.123 *(I(1))	-2.265 (NS)	-6.141 *(I(1))	2016M11 (Intercept)	I(1)
Market Capitalization	-2.445 (NS)	-6.018 *(I(1))	-2.498 (NS)	-6.043 *(I(1))	2020M05 (Trend)	I(1)
Foreign Exchange	-1.921 (NS)	-6.589 *(I(1))	-1.936 (NS)	-6.602 *(I(1))	2020M04 (Trend + Intercept)	I(1)
Electricity Consumption	-2.064 (NS)	-5.832 *(I(1))	-2.089 (NS)	-5.861 *(I(1))	2019M08 (Trend)	I(1)
Inflation Rate	-2.312 (NS)	-6.217 *(I(1))	-2.330 (NS)	-6.242 *(I(1))	2020M04 (Intercept)	I(1)
Return on Assets	-1.973 (NS)	-6.002 *(I(1))	-1.988 (NS)	-6.017 *(I(1))	2018M02 (Trend)	I(1)

Given that several variables were integrated of order one, we applied the Johansen cointegration test (Johansen, 1991) to examine potential long-run equilibrium relationships. The trace and maximum eigenvalue statistics indicated no cointegration. As such, we proceeded with a VAR in first differences consistent with the integration and cointegration

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properties of the data. We also tested for potential structural breaks in the series using the Zivot–Andrews test (Zivot & Andrews, 1992), which allows for a single endogenous break in either the intercept, the trend, or both. The test identified breakpoints corresponding to periods of major exchange rate volatility, notably during the 2020 pandemic-related disruptions. To account for these breaks, we included dummy variables in the VAR model, thereby mitigating bias in parameter estimates and confirming the robustness of the results.

Through the combined application of unit root tests, cointegration testing, and structural break analysis, we ensured that the VAR specification is econometrically valid and robust to non-stationarity and regime shifts, consistent with best practices in time-series modeling for energy and macroeconomic data. The estimated model is as followed;

$$\hat{\mathbf{Y}}_t = \hat{\mu} + \hat{\boldsymbol{\Phi}}_1 \mathbf{Y}_{t-1} + \hat{\boldsymbol{\Phi}}_2 \mathbf{Y}_{t-2}$$

with

$$\mathbf{Y}_{t-i} = \left[ROA_{t-i} \quad ROE_{t-i} \quad PRICE_{t-i} \quad FOwn_{t-i} \quad OExp_{t-i} \quad DE_{t-i} \quad MktCap_{t-i} \quad FX_{t-i} \quad INF_{t-i} \quad ECon_{t-i} \right]'$$

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Table 4: VAR(2) Estimation Results

Regressor	ROE (t)	ROA (t)	Price (t)	FOwn (t)	FX (t)	INF (t)	ECon (t)	OExp (t)	DE (t)	MktCap (t)
ROE (t-1)	0.215** (0.087)	0.041 (0.034)	0.042 (0.031)	0.008 (0.012)	-0.037 (0.024)	0.017 (0.022)	-0.014 (0.018)	0.023 (0.019)	0.015 (0.021)	0.020 (0.025)
ROE (t-2)	-0.041 (0.079)	-0.038 (0.031)	0.025 (0.029)	0.004 (0.011)	0.011 (0.021)	-0.008 (0.020)	0.006 (0.017)	-0.012 (0.018)	0.009 (0.019)	-0.005 (0.023)
ROA (t-1)	0.038 (0.055)	0.312*** (0.064)	0.031 (0.026)	0.007 (0.010)	-0.015 (0.020)	0.011 (0.019)	-0.009 (0.016)	0.020 (0.017)	0.013 (0.018)	0.012 (0.021)
ROA (t-2)	0.021 (0.052)	0.198** (0.059)	0.019 (0.025)	0.005 (0.010)	-0.007 (0.019)	-0.009 (0.018)	0.004 (0.016)	-0.011 (0.017)	-0.005 (0.017)	-0.006 (0.020)
Price (t-1)	0.067 (0.056)	0.024 (0.031)	0.431*** (0.063)	0.019 (0.009)	0.022 (0.018)	0.010 (0.017)	-0.005 (0.015)	0.008 (0.016)	0.007 (0.016)	0.009 (0.019)
Price (t-2)	0.041 (0.054)	0.018 (0.029)	0.268*** (0.059)	0.017 (0.009)	0.019 (0.018)	-0.007 (0.016)	0.006 (0.015)	-0.009 (0.016)	0.002 (0.015)	-0.004 (0.018)
FOwn (t-1)	0.012 (0.021)	0.009 (0.012)	0.006 (0.008)	0.916*** (0.045)	-0.004 (0.007)	0.005 (0.008)	-0.002 (0.007)	0.003 (0.007)	0.004 (0.007)	0.005 (0.008)
FOwn (t-2)	0.010 (0.020)	0.007 (0.012)	0.004 (0.007)	0.894*** (0.043)	-0.005 (0.007)	-0.003 (0.007)	0.001 (0.006)	-0.002 (0.007)	-0.001 (0.007)	-0.003 (0.008)
FX (t-1)	**0.402*** (0.105)	0.061 (0.049)	**0.128** (0.052)	0.013 (0.015)	0.651*** (0.078)	0.047 (0.041)	0.019 (0.036)	0.029 (0.037)	0.022 (0.038)	0.025 (0.042)
FX (t-2)	-0.02218	-0.039 (0.047)	-0.061 (0.049)	-0.008 (0.013)	0.311*** (0.075)	-0.021 (0.039)	-0.012 (0.035)	-0.018 (0.036)	-0.014 (0.036)	-0.016 (0.041)
ECon (t-1)	-0.028 (0.043)	-0.036 (0.027)	-0.022 (0.024)	-0.009 (0.010)	-0.007 (0.017)	0.008 (0.015)	0.473*** (0.049)	0.014 (0.015)	0.011 (0.016)	0.012 (0.018)
ECon (t-2)	-0.00295	-0.059** (0.025)	-0.030 (0.023)	-0.010 (0.010)	-0.009 (0.016)	-0.011 (0.015)	0.386*** (0.047)	-0.013 (0.014)	-0.010 (0.015)	-0.011 (0.017)
INF (t-1)	0.071 (0.053)	0.047 (0.031)	0.094* (0.050)	0.005 (0.011)	0.045 (0.037)	0.472*** (0.063)	0.032 (0.026)	0.019 (0.028)	0.018 (0.029)	0.020 (0.033)
INF (t-2)	0.056 (0.050)	0.039 (0.029)	0.082 (0.047)	0.004 (0.010)	0.038 (0.035)	0.391*** (0.059)	0.028 (0.025)	0.017 (0.027)	0.016 (0.028)	0.018 (0.032)
OExp (t-1)	0.021 (0.045)	0.026 (0.027)	0.014 (0.023)	0.006 (0.010)	0.008 (0.017)	0.006 (0.015)	0.010 (0.014)	0.431*** (0.052)	0.009 (0.015)	0.011 (0.017)
OExp (t-2)	-0.018 (0.043)	-0.022 (0.026)	-0.012 (0.022)	-0.005 (0.010)	-0.007 (0.016)	-0.004 (0.014)	-0.008 (0.013)	0.398*** (0.049)	-0.007 (0.014)	-0.009 (0.016)
DE (t-1)	0.014 (0.041)	0.018 (0.025)	0.009 (0.022)	0.004 (0.009)	0.006 (0.016)	0.004 (0.014)	0.005 (0.013)	0.007 (0.013)	0.452*** (0.046)	0.008 (0.015)
DE (t-2)	-0.011 (0.039)	-0.015 (0.024)	-0.007 (0.021)	-0.003 (0.009)	-0.004 (0.015)	-0.003 (0.013)	-0.004 (0.012)	-0.005 (0.012)	0.418*** (0.043)	-0.007 (0.014)
MktCap (t-1)	0.016 (0.049)	0.021 (0.029)	0.011 (0.025)	0.005 (0.011)	0.007 (0.018)	0.006 (0.016)	0.008 (0.014)	0.009 (0.015)	0.010 (0.015)	0.481*** (0.056)
MktCap (t-2)	-0.013 (0.047)	-0.018 (0.028)	-0.009 (0.024)	-0.004 (0.010)	-0.006 (0.017)	-0.005 (0.015)	-0.007 (0.014)	-0.008 (0.014)	-0.009 (0.015)	0.436*** (0.053)
Constant	0.015 (0.018)	0.012 (0.011)	0.007 (0.007)	0.002 (0.004)	-0.005 (0.005)	0.003 (0.004)	0.004 (0.003)	0.006 (0.003)	0.005 (0.003)	0.007 (0.004)

Note: Coefficients with ***, **, * indicate p < 0.01, p < 0.05, and p < 0.10, respectively.

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To identify the most appropriate lag structure for the multivariate system, we estimated a sequence of unrestricted vector autoregressions from VAR(1) through VAR(12), allowing up to one year of monthly lags for each of the ten endogenous variables. All coefficients were estimated equation-by-equation via ordinary least squares (OLS). For every specification, we computed the Akaike Information Criterion (AIC), the Schwarz–Bayesian Information Criterion (BIC), and the Hannan–Quinn (HQ) statistic, and we conducted residual serial-correlation LM tests to assess remaining autocorrelation. While the AIC continued to decline with additional lags, both the BIC and HQ—which penalize over-parameterization more strongly—reached their minima at two lags, and LM tests indicated no residual autocorrelation at this order.

Given the modest sample size of 144 monthly observations relative to the parameter burden of a 10-variable VAR, we followed BIC and HQ recommendations and selected VAR(2) as the preferred, parsimonious specification. Model stability was confirmed via the eigenvalue modulus test, with all roots of the characteristic polynomial lying within the unit circle. Residual diagnostics—including LM serial correlation, normality, and heteroskedasticity tests—revealed no major violations. Robustness checks, including re-estimation with a reduced-variable VAR and a VAR(1) specification, produced qualitatively similar impulse response functions and variance decomposition results, reinforcing the reliability of our findings. By prioritizing theoretically grounded variables and limiting lag length to preserve degrees of freedom, our approach balances model fit with parsimony, consistent with best practices in energy-sector VAR studies (Mensi et al., 2014; Pao & Tsai, 2010).

Table 4 presents the full VAR(2) results for the ten endogenous variables (ROE, ROA, Domestic Electricity Price, Foreign Ownership, FX Rate, Inflation, Electricity Consumption, Operating Expenses, Debt-to-Equity, and Market Capitalization). Exchange rate shocks have a statistically significant positive effect on ROE (coefficient = 0.402, $p < 0.01$) and electricity price (coefficient = 0.128, $p < 0.05$) in the first lag, confirming the FX pass-through effect on profitability and tariffs. In contrast, foreign ownership coefficients are statistically insignificant across all equations, suggesting financial neutrality in the short run.

Lagged electricity consumption negatively affects ROA, indicating temporary congestion effects on asset efficiency before new capacity adjustments. Inflation exerts mild but significant effects on electricity tariffs, reflecting cost adjustments under regulated pricing. Most financial indicators (operating expenses, debt-to-equity, and market capitalization) exhibit strong own-lag persistence, consistent with firm-level financial inertia. FX and inflation shocks also contribute to variability in market capitalization, highlighting their macro-financial influence. Overall, the VAR(2) model captures dynamic linkages across firm performance, electricity pricing, and macroeconomic shocks, with exchange rate volatility emerging as the dominant short-run driver, while ownership structure remains neutral.

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The impulse response functions (IRFs) derived from the VAR(2) model. An exchange rate depreciation (1 standard deviation shock to FX) leads to an immediate increase in ROE of approximately 0.4 percentage points in month 1, which dissipates by month 3. Similarly, electricity tariffs exhibit partial FX pass-through (~4–5%), peaking in month 2 before partially reversing, reflecting the regulated cost-plus pricing formula. Foreign ownership shocks produce negligible IRF responses across all variables, reinforcing its financial neutrality in the short run. IRFs also show that higher electricity consumption (demand shocks) exerts a negative lagged effect on ROA, suggesting temporary congestion and reduced asset efficiency before capacity adjustments occur. Inflation shocks exert modest upward pressure on electricity prices and market capitalization, while firm-specific financial indicators (operating expenses, debt-to-equity, and market capitalization) primarily display own-lag persistence, highlighting their inertia-driven dynamics.

Table 5: Variance Decomposition (6-Month Horizon)

Variable	Own Shock (%)	FX Shock (%)	Electricity Demand (%)	Inflation (%)	Foreign Ownership (%)	Others (%)
ROE	48	34.8	3.2	2.4	1.8	9.8
Electricity Price	52.1	42	2.6	2.8	1.2	9.3
ROA	55.4	20.8	12.2	2.1	1.5	8
Market Cap	50.5	28.6	4	10.4	2	4.5

Variance decomposition analysis shown in Table 5 confirms that FX shocks are the dominant source of short-run variability, explaining 42% of the forecast error variance in electricity tariffs and 35% in ROE over a 6-month horizon, compared to less than 5% attributable to foreign ownership. Electricity demand shocks account for approximately 12% of ROA variance, consistent with the capacity utilization effect. Inflation and FX jointly explain a substantial share of market capitalization variance, linking macro-financial volatility to firm valuation. Collectively, these results underscore that macroeconomic and demand-side shocks outweigh ownership effects in shaping short-term dynamics in Laos' electricity sector.

Based on the estimated equation, the results indicate that firm performance is primarily driven by exchange-rate shocks rather than ownership structure. A one-unit rise in the LAK/USD exchange rate lifts ROE by approximately 0.4 percentage points in the short run, but this effect reverses within two months, resulting in no net medium-run gain. Residential tariffs exhibit

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stickiness but remain FX-sensitive, with roughly 4–5% of a currency shock passed through to retail tariffs within the same timeframe, about half of which is reversed in the following month, reflecting the cost-plus tariff formula and scheduled reviews. Furthermore, capacity utilization significantly affects asset efficiency, as stronger electricity demand two months earlier reduces contemporary ROA, suggesting temporary congestion effects prior to capacity expansion. Importantly, there is no evidence that foreign equity participation influences either profits or prices within the first year. This null result remains robust across VAR specifications from VAR(2) to VAR(12), reinforcing the conclusion that foreign ownership is financially neutral in the short run.

According to these findings, the policy makers who worried about electricity tariff affordability should mainly focus on currency risk management which are hedging dollar-linked power-purchase agreements rather than on ownership caps. Likewise, managers seeking to insulate monthly profitability should pay more attention to FX exposure than to changes in the shareholder base.

Research Discussion

While macroeconomic and climatic factors such as GDP, temperature, and rainfall can influence electricity demand (Pao & Tsai, 2010), our study focuses primarily on firm-level financial performance, electricity pricing, and macro-financial shocks (e.g., exchange rates, inflation). Due to the limited sample size (144 monthly observations) and to preserve parsimony within the VAR framework, we did not include additional controls that would risk over-parameterization and loss of degrees of freedom. We recognize this as a limitation and recommend future research employing longer time-series or panel data to integrate such variables. This approach is consistent with prior VAR studies on energy and financial shocks (Mensi et al., 2014; Barteková & Ziesemer, 2019), which favor parsimony to avoid overfitting in small-sample contexts.

Granger causality tests confirm that exchange rate movements Granger-cause both ROE ($p < 0.01$) and electricity tariffs ($p < 0.05$), while foreign ownership does not Granger-cause any performance or pricing variables. These results align with broader evidence that macroeconomic shocks, particularly exchange rate volatility, drive short-run financial outcomes (Cakan & Ejara, 2013) and that foreign ownership often lacks short-run predictive power in regulated sectors (Hassaballa, 2014; Mihai, 2013). This suggests that causality flows primarily from macroeconomic shocks to firm outcomes rather than from ownership structure.

Empirical results reinforce cost-plus rate-setting theory, showing that residential tariffs are highly persistent but responsive to exchange-rate depreciation, with roughly half of an FX shock passed through within one quarter, followed by partial reversal at scheduled tariff reviews (Jamasb, 2006; Shyu, 2022). This pattern mirrors findings in other small, hydropower-

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exporting economies. Conversely, foreign ownership exhibited no statistically significant effect on profitability or tariffs, aligning with studies in regulated utility markets (Mihai, 2013; Pasali & Chaudhary, 2020) and cautionary FDI research that emphasizes the need for binding performance and knowledge-transfer clauses (Sims, 2024; Handayani et al., 2023).

Regional comparisons further underscore this point: in Cambodia and Myanmar, foreign investment has largely expanded capacity without immediate efficiency gains (Handayani et al., 2023), while partially liberalized markets like Thailand and Vietnam show stronger ownership-related performance spillovers (Nepal et. al., 2021). This divergence suggests that regulatory structure and market openness mediate the impact of foreign equity. In Laos, where cost-plus tariffs and state ownership dominate, foreign investors are largely price-takers with minority stakes (~16%), constraining operational influence.

Overall, our findings indicate that macro-financial factors—especially exchange-rate volatility and uneven demand growth—exert stronger short-run effects on firm performance and pricing than ownership structure. The neutrality of foreign ownership in the short term likely reflects regulatory constraints, minority participation, and the short observation horizon, which may not capture longer-term technology transfer effects. Taken together, these findings highlight the need for policymakers to prioritize exchange-rate risk management—such as hedging dollar-linked power purchase agreements—over ownership reforms as a tool for stabilizing profitability and tariff affordability in Laos' electricity sector.

Research Suggestions

Profitability and household tariffs in Laos's power sector track kip–dollar swings more closely than foreign equity levels. Policy should therefore pivot from capping ownership toward managing exchange-rate risk by enabling utilities to hedge dollar-linked power purchase agreements (PPAs), introducing partial-kip indexation in new contracts, and adopting automatic FX pass-through formulas to stabilize tariffs while reducing political discretion. Practically, our findings suggest policymakers prioritize exchange-rate risk management over foreign ownership caps. Recommended measures include: (i) integrating automatic FX pass-through formulas into tariff schedules to stabilize prices; (ii) developing hedging instruments for utilities exposed to dollar-denominated debts or PPAs; and (iii) strengthening financial risk management capacity within state-owned utilities.

However, these reforms must consider social and political realities. Automatic tariff indexation may face resistance from low-income households and advocacy groups concerned with affordability, while hedging policies require coordination between the central bank and energy authorities within Laos's centralized governance framework. Reforms must therefore balance technical efficiency with political feasibility and social acceptance.

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With the limitations of this study, the analysis uses 144 monthly observations (2013–2024), which constrains model complexity and precludes the inclusion of additional variables such as GDP, temperature, rainfall, and explicit policy dummies. Incorporating cross-country panel data could provide broader comparative insights. Moreover, while the VAR framework effectively captures short-run dynamics, it does not fully account for structural breaks or establish causal mechanisms. Employing longer time horizons or alternative methodologies such as structural VAR (SVAR) or panel-GMM could better identify long-run effects of foreign ownership and policy reforms. Lastly, the findings reflect Laos's regulated electricity market and may not be directly generalizable to more liberalized or privately dominated electricity sectors in ASEAN. Future research should therefore consider regional comparative designs or simulated policy reforms under alternative regulatory frameworks.

Nonetheless, this study provides actionable insights for regulators and policymakers in Laos and similar state-regulated electricity markets. By emphasizing exchange rate risk management over ownership restrictions, it offers a practical roadmap to strengthen financial stability and tariff affordability while recognizing the political and social constraints inherent in electricity pricing reforms.

References

Barteková, E. & Ziesemer, T. (2019). The impact of electricity prices on foreign direct investment: evidence from the European Union. *Applied Economics. 51*(11), 1183-1198.

Carley, S. & Lawrence, S. (2014). Energy-Based Economic Development: How Clean Energy Can Drive Development and Stimulate Economic Growth. Springer London.

Cakan, E., & Ejara, D. D. (2013). On the relationship between exchange rates and stock prices: Evidence from emerging markets. International Research *Journal of Finance and Economics, 111*(1), 115-124.

Chowdhury, A. K., Dang, T. D., Bagchi, A. & Galelli, S. (2020). Expected benefits of Laos' hydropower development curbed by hydroclimatic variability and limited transmission capacity: opportunities to reform. *Journal of water resources planning and management. 146*(10).

Handayani, K., Overland, I., Suryadi, B., & Vakulchuk, R. (2023). Integrating 100% renewable energy into electricity systems: A net-zero analysis for Cambodia, Laos, and Myanmar. *Energy Reports, 10*, 4849-4869.

Hassaballa, H. (2014). Testing for Granger causality between energy use and foreign direct investment inflows in developing countries. *Renewable and Sustainable Energy Reviews, 31*, 417-426.

Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. *Econometrica: journal of the Econometric Society*, 1551-1580.

Citation : กฤษฎา เครือชาลี, อังคนา เกาะแก้ว, และ อูลาเวียง สมศักดิ์ไซสมเพ็ง. (2568). บทบาทของการถือหุ้นโดยชาวต่างชาติในบริษัทผลิตไฟฟ้า: ผลกระทบต่อผลการดำเนินงานของบริษัทและการกำหนดราคาค่าไฟฟ้าในประเทศลาว. *วารสารราชภัฏสุรินทร์วิชาการ, 3*(4), 141–160. https://doi.org/10.14456/jasrru.2025.45

Kenney-Lazar, M. (2023). Turning land into capital? The expansion and extraction of value in Laos. Environment and Planning A: Economy and Space, 55(6), 1565-1580.

Mensi, W., Beljid, M., & Managi, S. (2014). Structural breaks and the time-varying levels of weak-form efficiency in crude oil markets: Evidence from the Hurst exponent and Shannon entropy methods. *International economics, 140*, 89-106.

Mihai, I. & Mihai, C. (2013). The impact of foreign ownership on the performance of Romanian listed manufacturing companies, The International. *Journal of Management Science and Information Technology, 10*(10), 106-123.

Olson, K.R. & Frenelus, W. (2024) Environmental and Human Impacts of Lancang-Mekong Mainstem and Tributary Dams on China, Laos, Thailand, Myanmar, Cambodia, and Vietnam. Open *Journal of Soil Science, 14*, 555-605.

Pao, H. T., & Tsai, C. M. (2010). CO_2 emissions, energy consumption and economic growth in BRIC countries. *Energy policy, 38*(12), 7850-7860.

Pasali, S. & Chaudhary, A. (2020). Assessing the impact of foreign ownership on firm performance by size: evidence from firms in developed and developing countries. *Transnational Corporations, 27*(2), 183-204.

Phetpaseuth, P. (2017). Factors Behind Low Level of Foreign Direct Investment (FDI) to Lao PDR. (Doctoral dissertation, Thammasat University).

Sims, K. (2024). Lao PDR: The Politics of Stability in Turbulent Times. In The Palgrave Handbook of Political Norms in Southeast Asia (pp. 209-226). Singapore: Springer Nature Singapore.

Shareholder Structure (2025). Shareholders by Nationalities. *Retrieved August 28*, 2025, from https://edlgen.com.la/shareholder-structure/?lang=en

Shyu, C. W. (2022). Energy poverty alleviation in Southeast Asian countries: Policy implications for improving access to electricity. *Journal of Asian Public Policy, 15*(1), 97-121.

St. John, R. B. (2006). The political economy of Laos: Poor state or poor policy?. *Asian Affairs, 37*(2), 175-191.

Sythongbay, S. (2021, March). Laos economic structure and economic development policy. In 6 th International Conference on Financial Innovation and Economic Development (ICFIED 2021) (pp. 177-185). Atlantis Press.

Yokota, E. & Kutani, I. (2017). Study on Electricity Supply Mix and Role of Policy in ASEAN. ERIA Research Project Report. 3-46.

Zivot, E., & Andrews, D.W.K. (1992). Further evidence on the great crash, the oil price shock, and the unit root hypothesis, *Journal of Business and Economic Statistics, 10*(3), 251-70.

Zhang, J., & Broadstock, D. C. (2016). The causality between energy consumption and economic growth for China in a time-varying framework. *The Energy Journal, 37*(1), 29-54.

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