Exporter Exposure to Indonesia's 2026 Rice Import Ban: Evidence from Trade Concentration and Dependence Ratios

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Abstract

The Indonesian government has announced a suspension of rice imports starting in 2026, marking a shift away from its historical reliance on imports to stabilize domestic supply and prices. Using annual data from 2017–2024, this study applies descriptive statistics, high- and low-import year comparisons, correlation analysis between import volumes and import unit values (IUV), and Exporter Dependence Ratios (EDR) to assess exporter exposure to the loss of the Indonesian market. Results show that imports are highly volatile but increasingly concentrated, with Thailand and Vietnam dominating recent high-import periods, while India, Pakistan, and Myanmar display more variable participation. High EDR values for Myanmar, Thailand, and Vietnam indicate substantial dependence on Indonesian demand. The findings suggest that the 2026 import ban may create significant adjustment pressures for these exporters while removing a key external mechanism that previously helped stabilize Indonesia's domestic prices.

Keywords: Rice trade; import ban; exporter exposure; ASEAN market

Background and Statement of the problem

In Indonesia, rice policy has long been involved in active state intervention. The National Logistics Agency (BULOG), established in 1968, was mandated to protect domestic markets from violent swings in price and manage nationwide warehouses to maintain public rice stocks. Through floor and ceiling price mechanisms and centralized control over imports, BULOG has historically imported rice during supply shortfalls and released stocks to stabilize markets (Gérard, 2010). Empirical time-series evidence

indicates that higher import values are associated with lower retail rice prices, suggesting that imports have functioned as a complementary mechanism for price stabilization during supply shortfalls (Antriyandarti et al., 2024).

Global rice exports are highly concentrated among a small number of major suppliers, particularly India, Thailand, and Vietnam (Greenville, 2018; USDA, 2023). India tops in rice exporting and is the world's largest rice exporter. As a result, policy changes in India have shown significant impacts on global rice prices and trade flows (USDA, 2023). Within Southeast Asia, Thailand and Vietnam take the role of key regional exporters by supplying some deficit markets such as Indonesia and the Philippines (Fadah et al., 2024).

Within this global exporting structure, Indonesia participates as a periodic net importer, with import volumes rising during episodes of domestic supply tightness, as documented in official trade statistics and recent empirical evidence (Antriyandarti et al., 2024). Import-demand estimates using an Almost Ideal Demand System (AIDS) framework indicate that rice imports from Thailand and Vietnam are relatively price inelastic, showcasing Indonesia's importance as a destination market within the regional rice system (Widarjono, 2018).

Figure 1 from USDA presents export price trends for Thailand, Vietnam, and India from 2013 to 2023. The three major exporters display closely aligned price movements and substantial volatility in 2023.

Figure 1 Rice Export Price Trends for Thailand, Vietnam, and India (2013-2023)

Source: United States Department of Agriculture (USDA)

When it comes to rice imports, Indonesia temporarily paused imports or reduced them when domestic supplies were adequate in earlier years, reflecting adjustments to changing supply conditions (VNA/The Investor, 2025). Thus, a complete no-import policy for 2026 represents a meaningful drift in policy direction.

The pie chart below summarizes the average structure of Indonesia's rice import sources over 2017–2024, highlighting the dominance of Thailand, Vietnam, Pakistan, India, and Myanmar in supplying the Indonesian market. It visually confirms that Thailand holds the largest average share, followed by Vietnam and Pakistan, while smaller suppliers such as Japan, China, and "Others" contribute only marginally to total imports. The figure therefore illustrates the concentrated nature of Indonesia's rice import dependence on a small group of regional exporters, providing background for later analysis of how the 2026 import ban may affect these trading partners.

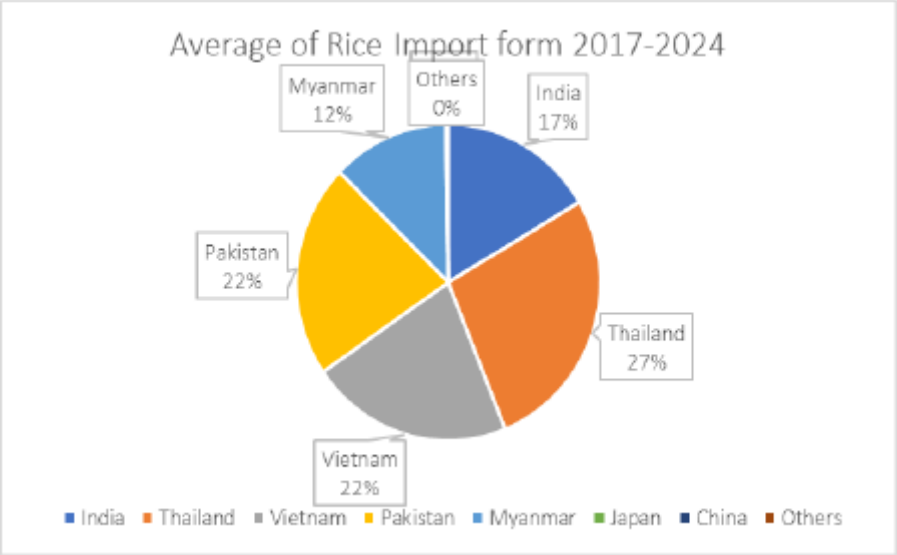


Figure 2 Average rice import of Indonesia (2017-2024)

Source: Author Calculation based on Statistic Indonesia and WITS

At the same time, Indonesia's rice policies have caused partial insulation from international markets. Although such policies have resulted in reduced sudden domestic price spikes, they have also helped weaken the transmission of international prices into the domestic market and maintained price gaps relative to world markets (Rosner & McCulloch, 2008; Patunru & Ilman, 2019). Trade restrictions and policy interventions

across ASEAN similarly shape regional price transmission and volatility (Greenville, 2018; Fadah et al., 2024).

Indonesia is removing an important tool for stabilizing rice prices and at the same time closing a major market for exporters. However, the consequences for exporting countries and domestic rice prices have not been clearly examined using recent data. This study therefore explores how the 2026 import ban may change trade relationships and price stability.

Objective

1. To describe Indonesia's rice import patterns from 2017–2024
2. To examine associations between import volumes and average import prices (IUV)
3. To identify which major exporting countries appear most exposed to Indonesia's 2026 import ban

Expected benefits

This research is expected to:

- Provide a clearer understanding of Indonesia's historical rice import patterns and supplier structure.
- Support the future discussions on the results of the import ban on rice by the Indonesian government

Research Methodology

This study uses descriptive statistical analysis to examine historical rice import patterns and exporter exposure prior to the 2026 import ban. The population comprises all annual rice import transactions from Indonesia from 2017 to 2024, as recorded in Statistics Indonesia (BPS). The sample consists of the complete annual aggregate import volumes (net-weight in tons) by country of origin for the eight-year period 2017–2024. No sampling was applied; the study uses the full available census data from this timeframe. The sample includes 8 annual observations (one per year, 2017–2024), yielding 64 country-year records (8 years × 8 major origin countries). The primary variables collected

are: Year (2017–2024), Country of origin (India, Thailand, Vietnam, Pakistan, Myanmar, Japan, China, Others), Net-weight imported (tons), Total annual import volume (tons), Import unit value (IUV, US$/ton, derived as total value / total tons where available). Data were obtained from BPS (Statistics Indonesia) Statistical Yearbook and secondary world export totals for calculating Exporter Dependence Ratio (EDR) were sourced from United States Department of Agriculture (USDA) annual reports and World Integrated Trade Solution (WITS). Annual shares (%) were calculated as (country tons / total tons) × 100. Descriptive statistics (mean, std dev, min, max, percentiles, CV) were computed per country and per group (high/low import years). High-import years were defined as total >1 million tons (2018, 2023, 2024). Welch's t-tests (unequal variances) compared means between groups. Pearson and Spearman correlations examined volume-IUV relationships. Visualizations and EDR were generated in Excel.

To evaluate structural differences in pricing and sourcing behavior, the study period (2017–2024) was partitioned into high-import (n=3) and low-import (n=5) years. Given the small and unequal sample sizes, Welch's Two-Sample t-test was employed to compare mean Import Unit Values (IUV), as it remains robust without assuming equal variances or homogeneity, thereby reducing Type I error risks. Additionally, the relationship between import volumes and prices was analyzed through a dual-correlation framework: Pearson's (r) was used to measure linear strength and direction, while Spearman's (ρ) captured potential non-linear monotonic relationships. This comprehensive approach allows for a more nuanced interpretation of Indonesia's price sensitivity and adjustment mechanisms during supply shocks.

Research Results

Indonesia's rice imports from 2017 to 2024 displayed high year-to-year volatility and concentration among a few suppliers (Table 1). Total volume ranged from 305,275 tons (2017) to 4,519,421 tons (2024), with three years exceeding 1 million tons (2018, 2023, 2024) classified as high-import periods. Thailand and Vietnam dominated recent high years, supplying over 2 million tons combined in 2023 and 2024, while earlier low-import years showed more dispersed sourcing across Pakistan, Myanmar, and India.

These patterns highlight Indonesia's increasing reliance on regional suppliers, particularly Thailand and Vietnam.

Table 1 Annual Rice Import Volumes by Country of Origin, 2017–2024 (Netweight in Tons)

Country of Origin	2017	2018	2019	2020	2021	2022	2023	2024
India	32,209.7	337,999.0	7,973.3	10,594.4	215,386.5	178,533.6	69,715.7	246,587.9
Thailand	108,944.8	795,600.1	53,278.0	88,593.1	69,360.0	80,182.5	1,381,921.2	1,364,232.8
Vietnam	16,599.9	767,180.9	33,133.1	88,716.4	65,692.9	81,828.0	1,147,705.3	1,248,245.0
Pakistan	87,500.0	310,990.0	182,564.9	110,516.5	52,479.0	84,407.0	309,309.7	803,844.7
Myanmar	57,475.0	41,820.0	166,700.6	57,841.4	3,790.0	3,830.0	141,204.0	831,379.0
Japan	72.1	0.2	90.0	0.3	230.3	56.1	61.5	100.7
China	2,419.0	227.7	24.3	23.8	42.6	6.0	7.0	19.3
Others	54.3	6.5	744.6	0.3	760.1	364.1	12,933.3	25,011.2
Total	**305,274.8**	**2,253,824.4**	**444,508.8**	**356,286.2**	**407,741.4**	**429,207.3**	**3,062,857.6**	**4,519,420.6**

Source: BPS Statistical Yearbook, Indonesia.

Table 2 Descriptive Statistics of Rice Import Shares (%) by Country of Origin, 2017–2024

Country of Origin	Mean	Std	Min	Max	Percentile 25	Percentile 50	Percentile 75	CV
India	16.56%	19.68%	1.79%	52.82%	2.80%	8.00%	21.65%	118.8361145
Thailand	27.35%	11.22%	11.99%	45.12%	18.26%	27.53%	35.40%	41.00624893
Vietnam	21.51%	11.66%	5.44%	37.47%	13.95%	21.98%	29.22%	54.19873755
Pakistan	21.87%	10.72%	10.10%	41.07%	13.57%	18.73%	29.25%	49.0236095
Myanmar	12.41%	12.86%	0.89%	37.50%	1.62%	10.42%	18.50%	103.673265
Japan	0.01%	0.02%	0.00%	0.06%	0.00%	0.01%	0.02%	131.0632683
China	0.10%	0.28%	0.00%	0.79%	0.00%	0.01%	0.01%	269.2907016
Others	0.18%	0.21%	0.00%	0.55%	0.01%	0.13%	0.25%	115.2883346
Total	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	1.15433E-06

Source: Author's calculations.

Thailand maintained the highest average share (27.35%), followed by Vietnam (21.51%) and Pakistan (21.87%), while India showed the greatest volatility (standard deviation 19.68%, CV 118.84%). Myanmar also exhibited high variability (CV 103.67%), whereas smaller suppliers (Japan, China, Others) had negligible and stable shares. These patterns highlight Thailand and Vietnam as relatively consistent major suppliers, with India and Myanmar more opportunistic. Another visualization on figure 3 illustrates the year-to-year changes in import shares among major suppliers from 2017 to 2024. Shares fluctuated considerably, with notable spikes for India in 2021 (52.82%) and for Thailand and Vietnam in 2023 (45.12% and 37.47%, respectively). The recent surge in ASEAN suppliers (Thailand and Vietnam) in 2023–2024 visually confirms their increasing role as primary buffers during high-import periods, a stabilizing mechanism now eliminated by the 2026 import ban.

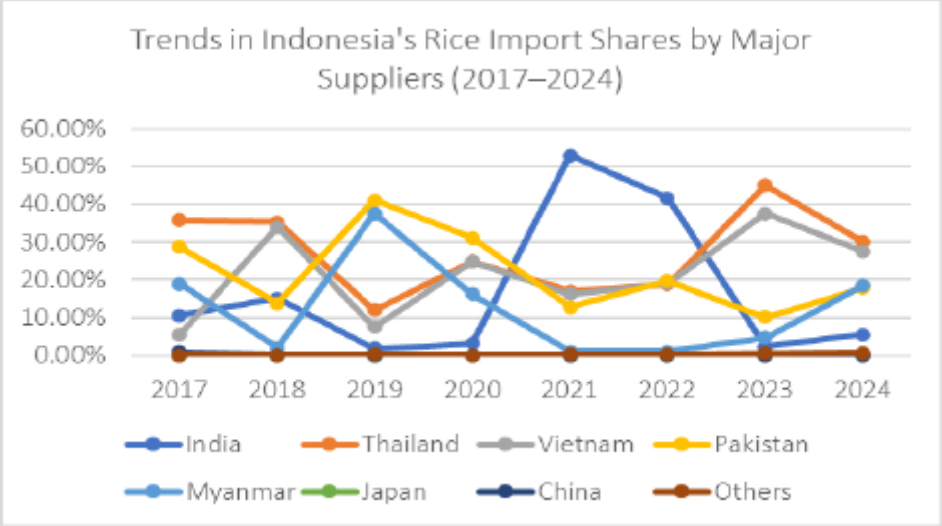


Figure 3 Trends in Indonesia's Rice Import Shares by Major Suppliers (2017–2024)

Source: Processed by Author

The histogram chart below reports the mean import share (blue bars) and the standard deviation of that share (orange bars) for each supplier, based on annual data from 2017–2024. Thailand has the highest mean share (about 27 percent) with moderate volatility, while Vietnam and Pakistan follow with average shares of around 22 percent each. India and Myanmar show smaller average shares (roughly 17 and 12 percent) but relatively large standard deviations, indicating that their exports to Indonesia fluctuate more strongly from year to year than those of Thailand and Vietnam.

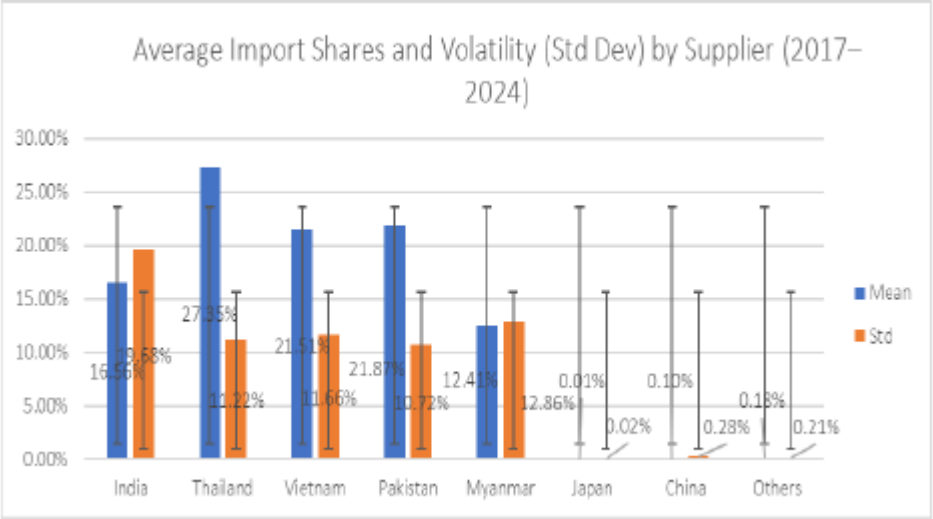


Figure 4 Average Indonesia's Rice Import Shares by Major Suppliers (2017–2024)

Source: Processed by Author

Table 3 Average Import Shares (%), Volumes (Tons), and Volatility in High vs Low-Import Year

Country of Origin	Total	High	Low	Difference	All Years	CV High	CV Low	Avg Ton High	Avg Ton Low
India	1,099,000.0	6.65%	22.89%	-16.23%	90.59%	62.54%	112.33%	218100.8667	88939.4868
Thailand	3,942,112.5	36.01%	20.60%	15.40%	121.16%	28.25%	26.04%	1180584.7	80071.6886
Vietnam	3,449,101.5	32.16%	14.72%	17.44%	123.89%	24.07%	54.59%	1054377.067	57194.0626
Pakistan	1,941,611.8	14.48%	26.63%	-12.15%	102.17%	60.04%	47.15%	474714.8	103493.4822
Myanmar	1,304,040.0	10.31%	14.91%	-4.59%	169.57%	127.18%	114.80%	338134.3333	57927.4
Japan	611.2	0.00%	0.02%	-0.02%	94.79%	93.57%	95.19%	54.13333333	89.7556
China	2,769.7	0.00%	0.13%	-0.13%	242.84%	146.48%	212.88%	84.66666667	503.1402
Others	39,874.4	0.39%	0.10%	0.29%	185.03%	98.85%	94.43%	12650.33333	384.6822
Total	11,779,121.1	100.00%	100.00%	0.00%	109.85%	35.02%	14.74%	3278700.867	388603.6982

Source: Processed by Author.

Table 3 compares average import shares (%) and volumes (tons) in high-import years (total >1 million tons: 2018, 2023, 2024) versus low-import years (≤1 million tons: 2017, 2019–2022). Thailand and Vietnam show substantially higher shares and volumes

in high years (Thailand 36.0% and ~1.18 million tons; Vietnam 32.2% and ~1.05 million tons) compared to low years (20.6% and ~89,000 tons; 14.7% and ~57,000 tons), with differences of +15.4% and +17.4% in shares. In contrast, India and Pakistan have lower shares in high years. These patterns confirm that ASEAN suppliers served as primary buffers during periods of elevated import demand which is a critical role eliminated by the 2026 import ban.

Table 4 presents the Exporter Dependence Ratio (EDR), measuring the share of each country's total world rice exports directed to Indonesia. Myanmar exhibited the highest average dependence (7.94%), followed by Thailand (6.07%) and Vietnam (5.95%). Dependence was particularly pronounced in recent high-import years, with Thailand, Vietnam, Pakistan, and Myanmar reaching 13–30% EDR in 2023–2024. India showed very low dependence (average 0.82%). These ratios indicate that the 2026 ban disproportionately affects Myanmar, Thailand, and Vietnam, implying substantial adjustment pressure in high-import equivalent scenarios.

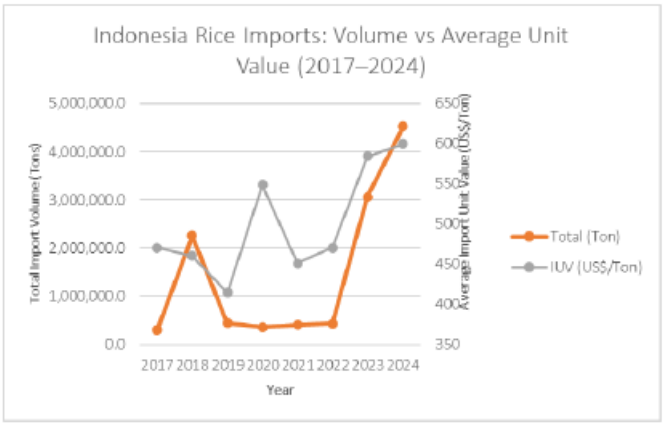
Table 4 Exporter Dependence Ratio (EDR) on Indonesia (Average 2017–2024)

Country of Origin	2017	2018	2019	2020	2021	2022	2023	2024	Total
India	0.27%	3.24%	0.06%	0.05%	0.98%	0.88%	0.48%	1.08%	0.82%
Thailand	0.97%	10.52%	0.93%	1.41%	0.90%	0.92%	13.98%	17.36%	6.07%
Vietnam	0.25%	11.66%	0.54%	1.41%	0.93%	0.99%	12.70%	15.48%	5.95%
Pakistan	2.18%	6.92%	4.78%	2.85%	1.08%	2.25%	4.74%	15.66%	5.33%
Myanmar	2.57%	2.43%	7.16%	2.96%	0.22%	0.18%	8.85%	30.13%	7.94%
Japan	0.12%	0.00%	0.26%	0.00%	0.20%	0.07%	0.07%	0.17%	0.10%
China	0.18%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%

Source: United States Department of Agriculture (USDA) and World Integrated Trade Solution (WITS), and Calculated by Authors.

Figure 5 presents the relationship between annual rice import volume and average import unit value (IUV) from 2017 to 2024. Import volume remained low to moderate (under 500,000 tons) from 2019 to 2022, with IUV fluctuating between approximately 415 and 548 $/ton. A sharp increase occurred in 2023–2024, with volume rising to over 3–4.5 million tons and IUV climbing to 584–600 $/ton. The Pearson correlation coefficient of 0.72 indicates a moderate to strong positive linear relationship, suggesting that Indonesia tended to import larger quantities when average import prices

were elevated. The weaker Spearman rank correlation (0.38) implies that the pattern is not perfectly monotonic across all years. These findings are consistent with imports serving as a partial buffer during tighter or higher-priced market conditions a mechanism now removed by the 2026 import ban, potentially leading to greater price volatility if domestic production shortfalls occur in the future.



Year	Total (Ton)	IUV (US$/Ton)
2017	305,274.8	470.5321238
2018	2,253,824.4	460.1637554
2019	444,508.8	414.5114787
2020	356,286.2	548.4604792
2021	407,741.4	450.7803074
2022	429,207.3	470.7333661
2023	3,062,857.6	584.1028652
2024	4,519,420.6	599.6908763
Correlation	0.723779155	
Rsquared	0.523856265	
Spearman	0.380952381	

Figure 5 Indonesia Rice Import Volume vs Average Import Unit Value (IUV).
Source: Author's Calculation.

Table 5 presents Welch's two-sample t-test results comparing average import unit values (IUV) between high- and low-import years. Overall, IUV was higher in high years (mean ≈548 $/ton) compared to low years (≈471 $/ton), but the difference was not statistically significant (p = 0.216). Country-level tests for major suppliers showed similar non-significant results (p = 0.111–0.352), with Pakistan displaying the closest to marginal significance (p = 0.111). These findings suggest that import volumes tended to occur at somewhat higher prices in high-import periods, consistent with a partial buffering role for imports during tighter market conditions. However, the lack of statistical significance likely due to small sample size in high years (n=3) limits definitive conclusions.

Table 5 Welch's t-test Results: Average Import Unit Value (IUV) in High vs Low-Import Years

Group/Country	High Years Mean IUV ($$ /ton)	Low Years Mean IUV ($$/ton)	p-value	Significant? (p < 0.10)
Overall	547.9858323	471.0035511	0.216	No
Thailand	566.8858506	656.8148106	0.269	No
Vietnam	552.0489784	499.5934901	0.352	No
Pakistan	536.4527066	396.8919116	0.111	No
India	475.3515694	417.6464566	0.202	No

Notes: High years (2018, 2023, 2024); Low years (2017, 2019–2022). Welch's t-test (unequal variances). p-values > 0.10 indicate no statistical significance.
Source: Author's Calculation.

The historical analysis shows that Indonesia relied heavily on imports from Thailand and Vietnam during high-demand years (average ~2.23 million tons combined from these two countries), with recent EDR peaks of 13–30% in 2023–2024 indicating significant exporter dependence on the Indonesian market. The 2026 rice import ban removes this buffer and demand outlet. The removal of imports in 2026 therefore eliminates a historically utilized adjustment mechanism for domestic supply management and a significant destination market for major ASEAN exporters.

Summary of the Study

This study analyzed Indonesia's rice import patterns from 2017 to 2024 to assess structural trade exposure prior to the 2026 import ban. Findings reveal that Thailand and Vietnam were the primary suppliers during high-import years, averaging 36.0% and 32.2% of shares and approximately 1.18 million and 1.05 million tons per year, respectively. The Exporter Dependence Ratio (EDR) showed significant reliance on Indonesia in recent years, with peaks of 13–30% for Thailand, Vietnam, Pakistan, and Myanmar. A moderate positive correlation (Pearson r = 0.72) between import volume and average import unit value (IUV) suggests imports tended to occur during tighter market conditions. Although Welch's t-tests found no statistically significant difference in IUV between high and low years, the directional pattern supports the interpretation of imports as a partial buffer. Overall, the findings highlight the structural importance of Indonesia within regional rice trade and the potential adjustment challenges for exporters following the 2026 ban.

Discussions

The findings align with existing literature on rice trade concentration and price transmission in ASEAN. Widarjono (2018) and Antriyandarti et al. (2024) showed that imports from Thailand and Vietnam are relatively price-inelastic and serve as a complementary stabilization tool during domestic shortfalls, consistent with the moderate volume-IUV correlation (r = 0.72) and directional (though non-significant) higher IUV in high years observed here. The high EDR in recent years (13–30% for Thailand, Vietnam, Pakistan, and Myanmar) supports Greenville (2018), who highlighted that policy shocks in large importers create spillover effects on concentrated exporters. The elimination of imports removes a historically observed adjustment channel during high-demand years. Prior literature indicates that import restrictions can increase domestic price gaps and volatility (Patunru & Ilman, 2019; Rosner & McCulloch, 2008). Given the concentration of export supply in ASEAN (Greenville, 2018), the 2026 ban may therefore reshape regional trade flows and heighten adjustment pressures for exporters with high dependence on the Indonesian market. The empirical results indicate that the ban disproportionately affects ASEAN exporters, especially Thailand and Vietnam, as well as Myanmar, while large and globally diversified exporters such as India face comparatively limited exposure.

Recommendations

This study suggests several areas for future research and policy consideration. First, more granular (monthly or sub-national) data could improve precision in modeling price volatility and regional distribution effects under the ban. Second, econometric approaches such as ARIMA or vector autoregression (VAR) using longer time series could refine volume and price projections beyond qualitative scenarios. Third, future work should examine the role of ASEAN emergency reserves (APTERR) in mitigating spillover effects on high-EDR countries (Myanmar, Thailand, Vietnam). Policy recommendations include: (1) strengthening domestic production resilience (e.g., irrigation, pest control) to reduce shortfall risks; (2) improving distribution efficiency to prevent retail price pressure despite surplus; and (3) enhancing regional cooperation mechanisms to stabilize trade

flows for affected exporters. Monitoring post-2026 trade and price developments will be essential to evaluate the actual adjustment effects of the import ban.

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