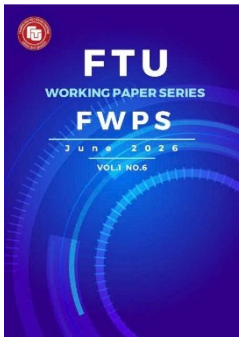

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RÀO CẢN TỪ QUY TẮC XUẤT XỨ VÀ HIỆU QUẢ HẤP THỤ ƯU ĐÃI EVFTA TRONG XUẤT KHẨU NÔNG SẢN VIỆT NAM: GỢI Ý CHÍNH SÁCH CHO DOANH NGHIỆP VỪA VÀ NHỎ

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Tóm tắt

Hiệp định Thương mại Tự do EVFTA chính thức được ký kết ngày 30 tháng 6 năm 2019, mở ra cho nhiều ngành xuất khẩu của nước ta, không chỉ ngành nông sản cơ hội lớn với thị trường EU đầy tiềm năng với nhiều lợi thế so sánh. Mặc dù hiệp định thương mại tự do "thế hệ mới" này đem lại ưu đãi thuế quan lớn, tỷ lệ tận dụng EVFTA của mặt hàng nông sản Việt Nam vẫn

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ở mức khá thấp. Dựa trên bộ dữ liệu bảng gồm các mặt hàng nông sản xuất khẩu chủ lực của Việt Nam ở cấp độ dòng hàng HS 6 chữ số trong 4 năm từ 2021 - 2024, nghiên cứu áp dụng mô hình hồi quy dữ liệu bảng kết hợp kỹ thuật ước lượng PCSE và một phần phân tích tình huống tại doanh nghiệp. Kết quả nghiên cứu cho thấy mức độ khắt khe của bộ quy tắc chứng minh xuất xứ hàng hóa đã làm suy giảm đáng kể biên độ ưu đãi từ EVFTA, áp lực từ những rào cản phi thuế quan cũng gây áp lực lớn, khiến khối doanh nghiệp xuất khẩu phải lựa chọn chiến lược tránh rủi ro pháp lý và từ bỏ ưu đãi. Từ thực trạng đó, nghiên cứu đề xuất hàm ý chính sách tập trung tháo gỡ điểm nghẽn truy xuất nguồn gốc và tái cấu trúc chuỗi giá trị nhằm hỗ trợ trực tiếp khối doanh nghiệp, đặc biệt là các doanh nghiệp vừa và nhỏ trong việc đẩy mạnh xuất khẩu nông sản nước ta vào thị trường EU giai đoạn tiếp theo.

Từ khóa: EVFTA, xuất khẩu, nông sản, quy tắc xuất xứ, Việt Nam

RULES OF ORIGIN RESTRICTIVENESS AND EVFTA PREFERENCE UTILIZATION FOR VIETNAM'S AGRICULTURAL EXPORTS: POLICY IMPLICATIONS FOR SMEs

Abstract

The EU - Vietnam Free Trade Agreement (EVFTA), officially signed on June 30, 2019, has opened up tremendous opportunities for various export sectors of Vietnam, particularly agriculture, to penetrate the highly potential EU market with numerous comparative advantages. However, despite the substantial tariff preferences offered by this "new-generation" free trade agreement, the EVFTA utilization rate for Vietnamese agricultural products remains disproportionately low. Utilizing a panel dataset of Vietnam's major agricultural exports at the HS 6-digit level over the four-year period from 2021 to 2024, this study applies a panel data regression model coupled with the Panel-Corrected Standard Errors (PCSE) estimation technique, complemented by firm-level case study analyses. The empirical findings reveal that the strictness of the rules of origin has significantly eroded the preference margins granted by the EVFTA. Furthermore, the overlapping burden from non-tariff measures (NTMs) exerts immense pressure, forcing export enterprises to adopt a legal risk-aversion strategy and consequently abandon the tariff preferences. Based on these realities, the study proposes policy implications focused on untangling traceability bottlenecks and restructuring the value chain. These measures aim to provide direct support to enterprises, particularly small

and medium-sized enterprises (SMEs), in accelerating Vietnam's agricultural exports to the EU market in the forthcoming period.

Keywords: EVFTA, exports, agricultural products, rules of origin, Vietnam

1. Introduction

The European Union market, within the framework of the EU - Vietnam Free Trade Agreement (EVFTA), presents Vietnam's economy with enormous strategic potential, anchored by a commitment to eliminate tariffs on nearly 99 percent of product lines (Ministry of Industry and Trade, 2023). Since the agreement's entry into force, its implementation has yielded far-reaching effects on Vietnamese export activity. Yet alongside these opportunities lie substantial challenges. In particular, the agricultural export sector - a cornerstone of Vietnam's comparative advantage - continues to struggle with a disproportionately low preference utilization rate, hovering between approximately 20 and 34.3 percent (VCCI, 2022; Ministry of Industry and Trade, 2024). This situation calls for a rigorous examination of the restrictiveness embedded in rules of origin (RoO) requirements, as well as the pressure exerted by non-tariff measures (NTMs), which have been widely identified as cost-generating mechanisms that erode the gains otherwise available from free trade agreements (Legge & Lukaszuk, 2024).

This paper seeks to offer a more comprehensive perspective on Vietnam's agricultural export performance and the practical capacity of domestic firms to leverage EVFTA concessions. By quantifying the restrictiveness of rules of origin requirements and disaggregating what we term “cumulative compliance costs”, the study identifies the structural barriers constraining preference utilization and formulates targeted strategic orientations to assist small and medium-sized enterprises (SMEs) in maximizing the benefits offered by this high-potential market.

2. Theoretical framework

2.1. Theoretical foundations relating to rules of origin and SMEs constraints

Cost-benefit tradeoff theory and revealed preference standard

As articulated by Legge and Lukaszuk (2024), the decision to apply for a certificate of origin (C/O) and thereby claim FTA preferences is not an automatic behavior but rather a deliberate, profit-maximizing calculation. In formal terms, the tariff preference margin (S) is defined as the differential between the most-favoured-nation (MFN) rate t_{MFN} and the preferential FTA rate t_{FTA}. The absolute benefit accruing to the firm equals (S) multiplied by the export volume (V). However, to receive this benefit, firms must absorb compliance costs (C), encompassing both fixed components - such as traceability software implementation and supplier re-evaluation - and variable components, including C/O certification fees and warehousing charges. The necessary and sufficient condition for a trade flow to occur under preferences is:

$$S \times V \geq C$$

In practice, the compliance cost (C) is rarely observable through conventional financial reporting. To address this measurement challenge, the revealed preference standard allows researchers to infer cost magnitudes by tracking shifts in trade flows at the HS 6-digit level. When data indicate that export values for a given agricultural sub-sector decline, or that C/O utilization rates remain low notwithstanding a substantial margin S, this reveals that compliance costs (C) are exceeding the tariff benefits obtained. Employing this analytical framework makes it possible to directly translate the restrictiveness of origin criteria - such as wholly obtained (WO) or change in tariff classification (CTC) requirements - into friction coefficients within a panel regression model.

Transaction cost economics (TCE)

Building on Williamson (1981), any cross-border exchange system - beyond direct production costs - gives rise to a set of expenditures required to establish, sustain, and enforce contractual arrangements. Applied to the EVFTA implementation context, the rules of origin regime functions as an institutional mechanism generating comparatively high costs for SMEs, manifesting along two core dimensions:

- ***Asset specificity:*** Criteria such as WO for raw agricultural commodities or CTC for processed goods compel firms to restructure their supply chains - for instance, by transitioning from third-country sourcing to intra-bloc procurement. Investments in domestic production zones or traceability systems carry a high degree of asset specificity and are difficult to liquidate in the event of failed export transactions.

- ***Ex-ante and ex-post transaction costs:*** Prior to export, SMEs typically incur information-search costs and expenses related to hiring legal specialists capable of interpreting complex regulatory texts. After export, firms face ongoing risks associated with customs verification and documentary audits.

Large multinational corporations can readily amortize these fixed costs across their substantial export volumes, benefiting from economies of scale. For SMEs, by contrast, the transaction cost burden per unit rises considerably, constituting a structural barrier that progressively undermines their competitive position in export markets.

Information asymmetry theory

Drawing on Akerlof (1970) and Stiglitz (2000), the international agricultural trade environment - and the origin verification process in particular - is characterized by pronounced information asymmetries operating at two levels:

- ***Upstream asymmetry:*** Vietnam's input procurement structures depend on thousands of smallholder farmers. Exporting firms face considerable informational deficits in verifying whether individual farm households are applying prohibited pesticides or whether their land parcels comply with deforestation regulations under the EU deforestation regulation (EUDR). Limited transparency in value-added invoices at intermediary stages further deepens these informational gaps regarding product origin.
- ***Downstream asymmetry:*** Customs authorities lack complete information about firms' actual production processes. In response to the risk of origin fraud, these agencies have instituted rigorous and demanding screening mechanisms.

The consequences include documentation review delays and increased frequencies of physical inspection. Given the inherently high biological risk of agricultural products - their susceptibility to spoilage and quality degradation - prolonged customs clearance directly inflates warehousing costs and diminishes commercial value. This theoretical lens illuminates the operational realities that make RoO compliance particularly burdensome for SMEs in the agricultural sector.

Global value chain (GVC) governance theory

According to Gereffi et al. (2005), the governance structures of international supply chains are determined by three interacting factors, each of which is directly relevant to the traceability

challenges encountered in Vietnam's agricultural sector: (1) the complexity of transactions; (2) the codifiability of information; and (3) the capability of upstream suppliers.

Applied to the EVFTA context, these factors help explain the difficulties encountered in preference utilization:

- ***Surging transaction complexity and codification demands:*** Stringent criteria such as WO, combined with non-tariff barriers (EUDR, SPS measures, etc.), have dramatically elevated the complexity of transactions. EU requirements demand that information spanning the full supply chain be codified through specific documentary evidence: continuous VAT invoices, GlobalGAP-compliant farm records, and GPS coordinates for each agricultural plot.
- ***Mismatch with SME capabilities:*** Vietnam's agricultural sector is characterized by a highly fragmented upstream procurement system, reliant on networks of smallholder farmers channeled through multiple layers of intermediaries. This fragmentation prevents SMEs from obtaining complete input invoices from trading intermediaries and precludes access to the technological resources necessary for digitizing plot-level location data.

The structural divergence between the rigorous output requirements of EU buyers and the fragmented input realities of Vietnamese suppliers drives a shift - in Gereffi et al.'s (2005) terms - from market-based toward captive or hierarchical value chain governance. As a result, SMEs in agricultural exports progressively lose their capacity to compete as independent exporters. To survive, they are reduced to operating as subcontractors or raw material suppliers to larger corporations. Those who persist in attempting independent exports often abandon C/O claims and accept MFN tariff payments to avoid the burdens of complex origin verification.

2.2. Literature review

Studies on the Effects of Next-Generation FTAs and Agricultural Export Benefits

Bui Duy Linh (2025) applied the SMART partial equilibrium model to HS 2-digit data, identifying strong trade creation effects and projecting significant export growth in key commodities such as seafood, rice, and fruit on the basis of price competitiveness advantages. However, the SMART model assumes simultaneous reduction of all tariffs to zero upon agreement entry into force, thereby ignoring the EU's phased liberalization schedule and the

frictions introduced by RoO, while overestimating the actual surplus benefits absorbable by Vietnamese firms.

Nguyen Thi Nhu Hang and Pham Anh Tuyet (2023), drawing on agricultural export data for the period 2020-2022, provided early evidence that the interaction between stringent EU quality standards and "green trade" requirements has meaningfully increased production costs for Vietnamese exporters.

Studies on the trade-restricting nature of RoO and measurement methodologies

Conconi et al. (2018) confirmed the market-protection character of RoO requirements, which effectively compel suppliers to shift sourcing toward more costly intra-bloc inputs rather than utilizing third-country alternatives.

Stefano Inama et al. (2011) found that most agreements involving Vietnam tend to incorporate relatively inflexible rules of origin, with cumulation provisions restricted to narrow geographical scopes, directly diminishing the competitive advantage of export-oriented firms and resulting in low preference utilization rates due to insufficient flexibility in reconfiguring international input sourcing.

Estevadeordal and Suominen (2004) constructed a global mapping of RoO systems and proposed a restrictiveness index (R-index), though this indicator operates at a macro level and fails to differentiate between the restrictiveness facing heavy industry supply chains and that confronting agricultural production networks.

Cadot et al. (2006) employed the regional value content (RVC) criterion as a central institutional coding metric. However, the RVC measure is more suitable for manufacturing sectors and tends to be unstable when applied to agricultural goods, given the daily volatility of raw material prices and exchange rates.

Studies on Compliance Costs, Technical Barriers, and Firm-Level Export Thresholds

Keck and Lendle (2012), using probabilistic regression models (Probit/Logit), refuted the conventional assumption that preference utilization automatically increases proportionally with tariff reductions, demonstrating instead that firm behavior is governed primarily by the complexity of customs procedures. However, their global-scale analysis using aggregated data

obscures the sector-specific prohibitive effects operating within agricultural supply chains in developing countries.

Legge et al. (2024) incorporated a customs clearance time variable into their model and demonstrated that delays associated with warehousing and documentary resolution are functionally equivalent to an implicit tax that erodes firm-level profits.

Pham Cong Doan and Pham Thi Thanh Ha (2020) identified technical barriers (TBT), sanitary and phytosanitary (SPS) standards, and sustainability requirements as the principal obstacles to Vietnamese agricultural exports entering the EU market. However, their study did not establish an interaction-variable system between regulatory barriers and tariff leverage within an econometric specification.

Trinh Van Thao (2023) successfully characterized the structural transformation context and identified EVFTA as a growth driver, while acknowledging that SPS barriers and RoO diminish export competitiveness. Nevertheless, that study lacked a systematic approach to coding institutional variables - specifically WO, CTC, and PROC - as quantifiable structural regressors.

3. Research Hypotheses

3.1. Tariff Preference Margin

Keck and Lendle (2012) established that the tariff preference margin exhibits a positive elasticity and represents a decisive driver of FTA utilization rates. For price-sensitive commodity categories such as agricultural goods, the tariff differential serves as an important financial buffer that helps offset the initial market-entry costs borne by firms. Evidence from Vietnam's experience, as documented by VEPR (2021), suggests that the entry into force of the EVFTA triggered a significant surge in agricultural export values for products previously subject to high MFN tariffs. When financial barriers are removed, trade creation effects can dominate transaction costs. Accordingly, the study proposes:

H1: The tariff preference margin exerts a positive effect and functions as one of the core drivers of Vietnam's agricultural export value to the EU.

3.2. Trade-Constraining Structure of Rules of Origin

Drawing on Cadot et al. (2006) and Conconi et al. (2018), the restrictiveness of RoO tends to amplify marginal compliance costs associated with origin requirements, generating a negative moderating effect that directly diminishes the net tariff surplus. For the fragmented agricultural supply chains characteristic of Vietnam, this barrier is materialized through three distinct mechanisms:

Domestic input localization constraint (WO): The wholly obtained criterion requires that the entire production cycle take place within the EU's territory. GVC governance theory suggests that WO may function as a substantial barrier for developing countries by creating a mismatch between the demanding requirements of the EU market and Vietnam's existing domestic capabilities. According to the Ministry of Agriculture and Rural Development (2023), certain segments of Vietnamese agriculture remain 60 - 70% dependent on imported fertilizers, pesticides, and animal feed. Meeting WO requirements necessitates significant market-entry expenditures for the restructuring of production areas, thereby eroding the tariff preference. The study therefore proposes:

H2a: The Wholly Obtained (WO) criterion functions as a negative moderator, weakening the positive effect of the tariff preference margin on agricultural export performance.

Information cost barrier (CTC): Compliance with the change in tariff classification (CTC) criterion generally demands rigorous physical traceability systems. Given the information asymmetry that characterizes Vietnam's agricultural procurement - which is conducted through multiple layers of trading intermediaries - inconsistencies frequently arise in documentary chains (e.g., VAT invoices), effectively transforming CTC into a tariff equivalent that reduces expected profit margins. The study therefore proposes:

H2b: The change in tariff classification (CTC) criterion functions as a negative moderator, weakening the positive effect of the tariff preference margin on agricultural export performance.

Technological and processing barrier (PROC): The requirement that goods undergo specific processing operations - such as EU-compliant sterilization or drying procedures - imposes a high degree of technical constraint. Under the cost-benefit tradeoff framework, this barrier demands substantial fixed-cost investment for production line upgrades, progressively excluding SMEs lacking adequate financial capacity from the preferential trade network. The study therefore proposes:

H2c: The specific process (PROC) criterion functions as a negative moderator, weakening the positive effect of the tariff preference margin on agricultural export performance.

4. Research methodology and model specification

4.1. Research methodology

Estimation and hypothesis testing are carried out using EViews software. Ordinary least squares (OLS) serves as the baseline estimation approach; however, given the dual time-series and cross-sectional nature of the panel dataset, fixed effects models (FEM) and random effects models (REM) are also incorporated into the analytical framework. Since the dataset encompasses a relatively large number of commodities (200 HS codes) but a limited time span (four years), the classical assumptions of homoskedasticity and error independence across observational units may be difficult to sustain. Accordingly, the study employs cross-section cluster-robust standard errors, which allow for heteroskedasticity across units and accommodate serial correlation within the residuals of each cluster over time.

In data collection, the EU's tariff schedule - which incorporates mixed duties - requires that specific (non-ad valorem) components be converted into ad valorem equivalents (AVE). Moreover, given a classification-level mismatch between the EVFTA tariff schedule (HS 8-digit) and the trade flow data (HS 6-digit), the study applies the root mean square methodology proposed by Kee et al. (2008) to derive precise MFN tariff rates. EVFTA preferential rates are dynamically interpolated along the agreed liberalization schedule to ensure a consistent basis for computing the preference margin. An AVE for rules of origin is also constructed by normalizing the estimated trade impact of origin requirements by the export demand elasticity.

The CTC variable is constructed using an ordinal scoring scheme that captures variation in restrictiveness: no requirement = 0; CTSH = 1; CTH = 2; CC = 3. The PROC variable is similarly operationalized: simple handling operations such as sorting, cleaning, or preservation = 0; basic processing (drying, milling, etc.) = 1; deep processing (roasting, fermentation, etc.) = 2.

4.2. Model Specification

Based on the theoretical and conceptual framework outlined above, the panel regression model is specified as follows:

$$ln(ExportValue)_{i,t} = \beta 0 + \beta 1 \times S_{i,t} + \beta 2 \times (S_{i,t} \times CTC_i) + \beta 3 \times (S_{i,t} \times PROC_i) + \beta 4 \times (S_{i,t} \times WO_i) + \varepsilon_{i,t}$$

The tariff preference margin is computed as:

$$S_{i,t} = t^{MFN} - t^{EVFTA}$$

Table 1: Variable Descriptions

Variable Type	Description	Symbol	Expected Sign	Unit	Source
Dependent Variable	Vietnam's export value to the EU by HS code and year (natural log)	ExportValuei,t		Million USD	ITC Trademap
Independent Variable	Difference between MFN and EVFTA preferential tariff rates (Tariff Preference Margin)	$S_{i,t}$	+	%	EU Tariff Schedule, EVFTA Liberalization Schedule
Interaction Variable (with Si,t)	Wholly Obtained requirement	WO_i	-	0/1	EVFTA PSR
	Tariff classification change requirement	CTC_i	-	Scoring	EVFTA PSR

Variable Type	Description	Symbol	Expected Sign	Unit	Source
	Specific processing requirement	$PROC_i$	-	Scoring	EVFTA PSR

Source: Compiled by the authors

Quantifying RoO restrictiveness as ad-valorem equivalents (AVE)

Following the quantification approach of Kee et al. (2009), in contexts where firm-level compliance costs are not directly observable, the trade-restricting effects of non-tariff barriers can be inferred indirectly through trade flow responses and normalized by import demand elasticities. This normalization converts the estimated regression coefficients into economically interpretable ad valorem equivalents (AVE), enabling direct comparisons between the restrictiveness of institutional barriers and the benefits of tariff reduction. The AVE for rules of origin is derived by normalizing the marginal effect of origin requirements on export values by the export demand elasticity. Given that the model expresses origin requirements through interaction terms with the preference margin, the AVE formula for rules of origin is computed as follows:

$$AVE_{i,t}^{RoO} = -\frac{\beta_{interact} \times S_{i,t}}{\varepsilon_i}$$

5. Results and discussion

5.1. Correlation matrix results

Table 2: Correlation coefficient matrix

	LNE	S	CTC	PROC	WO
LNE	1.00000	-0.02718	-0.11548	0.20139	-0.01447
S	-0.02718	1.00000	0.00466	-0.04480	0.11396

	LNE	S	CTC	PROC	WO
CTC	-0.11548	0.00466	1.00000	0.07170	-0.51089
PROC	0.20139	-0.04480	0.07170	1.00000	0.11479
WO	-0.01447	0.11396	-0.51089	0.11479	1.00000

Source: Computed by the authors

The results indicate that agricultural export volumes (LNE) exhibit a marginally negative correlation with the tariff preference margin (S), with a coefficient of approximately −0.03. The specific processing requirement (PROC) shows a relatively distinct positive association with export volumes (approximately 0.20). Conversely, the tariff classification change variable (CTC) is moderately negatively correlated with LNE (-0.12). Of particular note is the correlation coefficient between CTC and the wholly obtained requirement (WO), which reaches approximately -0.51, reflecting the degree to which these two barrier components function as substitutes in the design of rules of origin.

5.2. Regression model testing

5.2.1. Pooled OLS and fixed effects model (FEM)

Table 3: Pooled OLS and FEM estimation results

Variable (Dep: LNE)	OLS	FEM
C	6.025985***	6.632919***
S	0.037182	0.083850***
S × WO	-0.041211	−0.083927***
S × CTC	-0.029130*	−0.047571**
S × PROC	0.049738***	−0.038425***

Note: * p<0.1; ** p<0.05; *** p<0.01

Source: Model estimation results

Under the OLS specification, the coefficient on S × PROC carries a sign contrary to theoretical expectations, despite being highly significant ($p < 0.01$), while the remaining variables display only weak or statistically insignificant results. In contrast, the FEM specification produces coefficient signs consistent with hypothesized directions and p-values largely below 0.01 across all variables, suggesting that the fixed effects framework is a substantially better fit for the data.

5.2.2. Hausman test

The Hausman test yields a chi-squared statistic of 20.07 with 4 degrees of freedom and a p-value of 0.0005, which falls below conventional significance thresholds. Accordingly, the null hypothesis of orthogonality between individual effects and the explanatory variables is rejected, and the fixed effects model is preferred over the random effects model.

5.3. Diagnostic tests

5.3.1. Heteroskedasticity test

To detect whether the FEM exhibits cross-sectional or time-varying error variance heteroskedasticity, a likelihood ratio test is conducted. The cross-sectional (commodity-level) statistic reaches approximately 942.84 with a p-value of 0.0000, confirming the presence of heteroskedasticity across commodities. The corresponding period-level test returns a p-value of 1.0000, indicating no evidence of time-varying error variance.

5.3.2. Autocorrelation Test

The Wooldridge test for serial correlation yields an F-statistic significant at the 1% level ($p < 0.01$), leading to rejection of the null hypothesis of no serial correlation and confirming the presence of autocorrelation in the model residuals.

5.3.3. Cross-sectional dependence test

Cross-sectional dependence tests performed in EViews consistently return p-values of 0.000, confirming statistically significant cross-sectional dependence in the panel data. This implies correlated residuals across commodity groups, which - if unaddressed - could bias statistical inference. However, since the model employs cross-section cluster-robust standard errors, the reliability of the empirical results is maintained.

5.4. Corrected estimation: Panel-Corrected Standard Errors (PCSE)

To simultaneously address heteroskedasticity and cross-sectional dependence, the model is re-estimated using the Panel-Corrected Standard Errors (PCSE) approach.

Table 4: Panel-Corrected Standard Errors (PCSE) estimation results

Variable	Coefficient	Std. Error (PCSE)	t-Statistic	p-value
C	6.63292	0.04754	139.5188	0.0000
S	0.08385	0.02677	3.13204	0.0018
S × WO	-0.08393	0.02675	-3.13803	0.0018
S × CTC	-0.04757	0.01803	-2.63803	0.0086
S × PROC	-0.03843	0.00767	-5.01006	0.0000

Source: Computed by the authors

The PCSE estimation results reveal that the principal regression coefficients maintain consistent signs and statistical significance relative to the fixed effects model with cluster-robust standard errors. Specifically, the tariff preference margin variable (S) continues to carry a positive and statistically significant coefficient at the 1% level ($p \approx 0.0018$), confirming that as the gap between MFN and preferential tariff rates widens, export volumes tend to expand. Conversely, all interaction terms capturing the restrictiveness of rules of origin carry negative signs and are statistically significant. The interaction term with the tariff classification change requirement (S × CTC) is significant at 1% ($p \approx 0.0086$), while interaction terms with the specific processing requirement (S × PROC) and wholly obtained requirement (S × WO) are both highly significant, with p-values of approximately 0.0000 and 0.0018, respectively. These results imply that the binding nature of rules of origin continues to suppress the export-promoting impact of tariff preferences even when alternative error correction methods are applied.

The stability of coefficient signs and significance levels across the transition to PCSE estimation lends strong support to the robustness of the findings in the face of

heteroskedasticity and cross-sectional dependence. This reinforces the argument that the moderating effect of rules of origin - through which origin requirements erode the trade-promoting benefits of tariff preferences - represents a structural phenomenon rather than an artifact of a specific estimation configuration.

5.5. Quantifying RoO trade restrictiveness as ad-valorem equivalents

Following the methodology of Kee et al. (2009), the trade-restricting effects of origin requirements are converted into ad valorem equivalents (AVE). Given the right-skewed distribution of export values across product lines and the presence of extreme observations, median AVE values are employed to capture the typical level of trade restrictiveness.

Table 5: Median ad-valorem equivalents of rules of origin criteria

Rule of origin criterion	Median AVE (%)
WO	51.3
CTC	29.1
PROC	23.5

Source: Compiled by the authors

These figures indicate that the trade-restricting burden implied by rules of origin may constitute a substantial proportion of the tariff gains available through EVFTA. While these AVE estimates do not directly reflect the actual costs firms incur to comply with origin requirements, when the implied restriction approaches or exceeds a significant portion of the tariff preference margin, firms' incentives to pursue preferential claims are likely to diminish appreciably.

6. Conclusion and Policy Implications

The regression results confirm that tariff preferences embedded in the EVFTA exert a positive influence on Vietnam's agricultural export volumes to the EU market, affirming the role of tariff reduction as a catalyst for trade expansion. However, this export-promoting effect is not realized in full, being substantially attenuated when the restrictiveness of rules of origin is taken into account. All interaction terms between the preference margin and origin criteria

carry negative coefficients, indicating that institutional compliance burdens can diminish the efficiency of tariff preferences. The benefits of preferential tariff arrangements are not automatically converted into export growth when firms are unable to satisfy requirements pertaining to input origin or specific production processes.

These findings reflect structural characteristics of Vietnam's agricultural supply chain, which remains fragmented and substantially reliant on imported inputs. Under these conditions, satisfying rules of origin pertaining to input sourcing or specialized production processes can impose significant cost burdens on firms. Enterprises may then opt to export under MFN tariff rates rather than claim preferential treatment, thereby reducing the practical effectiveness of trade policy.

Given these structural constraints and the finite resources available to SMEs, EVFTA utilization strategies must be designed to be selective and adaptive rather than pursuing comprehensive upgrading objectives over a short timeframe.

*First, firms should restructure their supply chains toward "sufficient compliance" rather than "maximum compliance"***.** Experience suggests that attempting to fully domesticate inputs or build large-scale traceability systems from the outset may create financial pressures exceeding SMEs' absorption capacity. A more viable approach involves establishing clustered or contract-based production linkages with input regions capable of maintaining documentary control and farming practice standards. Shortening procurement chains, reducing dependence on intermediary layers, and standardizing input recording processes can enhance firms' probability of meeting origin criteria without triggering sharp increases in organizational costs.

Second, firms should develop product portfolio-based and shipment-level preference utilization strategies. Product-line level findings indicate that origin requirement stringency varies considerably across agricultural sub-sectors, implying that not all commodities are equally well-suited for preferential tariff strategies. SMEs may benefit from a two-tier approach, in which shipments with high origin criterion compliance and low storage risk are prioritized for preferential certification, while seasonally volatile shipments or those heavily reliant on trading intermediaries are exported under the MFN regime to preserve capital turnover speed and minimize quality degradation risks.

Third, administrative and logistics risk management must be integrated as a core strategic component in EVFTA utilization decisions. For perishable or short shelf-life commodities,

delays arising from origin documentation completion or customs clearance can generate opportunity costs that outweigh the tariff benefits secured. Firms should therefore develop flexible decision-making mechanisms based on real-time market intelligence, such as establishing acceptable port waiting thresholds or pre-configured procedures for switching tariff declaration modalities when product quality risks materialize. Integrating documentary management with transportation and post-harvest storage management will help minimize over-compliance that results in trade delays.

Fourth, capacity upgrading strategies should be implemented along a phased roadmap rather than through abrupt technological or production-scale leaps. SMEs may prioritize investment in high-spillover stages such as primary processing, EU-standard packaging, or shipment-level digital traceability rather than extending digitization across the entire supply chain simultaneously. This incremental upgrading approach not only reduces financial pressure but also allows firms to accumulate compliance experience, progressively improving their capacity to leverage EVFTA preferences over the longer term.

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