



# From Compliance Costs to Competitive Advantage: Quantifying the Effects of EU Non-Tariff Measures under EVFTA on Vietnam's Textile and Apparel Exports

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**Abstract:** The rapid liberalization of tariff barriers has elevated non-tariff measures (NTMs) to a central role in shaping global textile and apparel trade, yet rigorous, Vietnam-specific analyses of how European Union (EU) NTMs under the EVFTA affect Vietnamese exporters remain scarce. This study fills that gap by combining novel indices—Degree of Application, Frequency of Application, and Effectiveness—built on UNCTAD's taxonomy with detailed HS 61–63 trade-flow data (2012–2024) and semi-structured interviews of exporters and certifying bodies. We quantify the incidence and intensity of key EU NTMs (REACH, EU Ecolabel, “yarn-forward” rules) and estimate their differentiated impacts on export prices, volumes, and product composition across firm sizes. Our findings reveal that large enterprises securing sustainability certifications achieve 15–25 percent price premiums and sustained volume growth in premium segments, whereas SMEs face 8–12 percent MFN duties and market exclusion when origin rules are unmet. We also document a structural shift toward higher-value, eco-friendly products—organic-cotton and recycled-fiber lines—driven by evolving EU sustainability mandates. By integrating quantitative NTM metrics with firm-level insights, this research contributes to the literature on trade protectionism by providing the first comprehensive assessment of EVFTA-era NTMs on Vietnam's apparel sector and offers concrete policy recommendations to transform compliance burdens into competitive advantages.

**Keywords:** Non-Tariff Measures, EVFTA, Vietnam Textile and Apparel Exports, Sustainability Certifications, Trade Compliance Costs.

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## Introduction

International trade in textile and apparel products has expanded dramatically over the past two decades, driven by liberalized tariff regimes and the growth of global value chains. However, as traditional customs duties have declined, non-tariff measures (NTMs) have become increasingly prominent instruments for regulating product safety, environmental standards, and market access. The European Union (EU), in particular, has deployed a complex suite of sanitary and phytosanitary rules, technical barriers to trade, sustainability certifications (such as REACH and the EU Ecolabel), and stringent rules of origin under the EVFTA. These measures play a dual role: protecting consumer health and the environment while potentially imposing significant compliance costs on exporting firms.

Previous research has documented the rise of NTMs worldwide and their heterogeneous effects on trade flows. UNCTAD's TRAINS database and numerous World Bank and OECD studies

have classified and quantified the incidence of NTMs, showing that technical regulations can improve product quality but also raise entry costs for developing-country exporters. Case studies on major suppliers such as Bangladesh and India have explored how firms adapt to, or are excluded by, EU standards. Yet despite Vietnam's rapid ascent to become the EU's third-largest apparel supplier, there remains a paucity of rigorous, Vietnam-specific analyses that integrate both quantitative measures of NTM intensity and firm-level compliance experiences.

This gap is especially pressing in the EVFTA era, where 99 percent of Vietnam's textile tariff lines enjoy preferential access, but only firms capable of satisfying “yarn-forward” origin rules and demanding environmental and chemical-safety standards can fully reap the benefits. Small and medium-sized enterprises, which comprise over 60 percent of Vietnam's apparel exporters, often lack the technical expertise and financial resources to secure international certifications or to trace input origins back to approved sources. Consequently, empirical questions remain about



the true trade-cost burden imposed by EU NTMs on Vietnamese shipments, as well as the market segments and product categories most affected.

To address these knowledge gaps, our study combines UNCTAD-inspired NTM indices with detailed trade-flow data (HS 61–63) from 2012 to 2024, alongside interviews with exporters and certification bodies. We first quantify the Degree and Frequency of Application of NTMs on Vietnam's apparel exports and compute an Effectiveness Index reflecting the share of trade value under constraint. We then analyze price and volume impacts across firms of different sizes and product lines, and investigate how EVFTA origin rules and sustainability certifications mediate these effects. By doing so, we aim to inform policymakers on how to streamline compliance support, and guide firms toward strategic investments that transform EU-imposed requirements from costly barriers into catalysts for value-addition.

The research paper is organized as follows. Section 2 reviews the relevant literature on non-tariff measures and their trade impacts, with a focus on technical regulations, sustainability standards, and rules of origin in the EU context. Section 3 describes our data sources—including trade-flow records for HS 61–63 products and firm-level survey results—and outlines the construction of our NTM Degree, Frequency, and Effectiveness indices. In Section 4 we present our empirical methodology and estimation strategy for isolating the price and volume effects of EU NTMs across exporter size and product lines. Section 5 reports the main findings, including heterogeneity by firm scale, the mediating role of EVFTA “yarn-forward” rules, and the value-added gains associated with sustainability certifications. Section 6 discusses the policy implications of our results for Vietnamese exporters and government support programs. Finally, Section 7 concludes, summarizing our contributions and suggesting avenues for future research.

## Literature Review

In recent decades, international trade practice has shown that alongside traditional tariffs, countries and economic regions increasingly employ a wide array of Non-Tariff Measures (NTMs) to regulate the exchange of goods. UNCTAD defines NTMs as “policy measures other than ordinary customs tariffs that can have economic effects on international trade in goods”. This encompasses both technical measures—such as Sanitary and Phytosanitary Standards (SPS) and Technical Barriers to Trade (TBT)—and non-technical measures—such as quotas, rules of origin, subsidies, and trade-defence instruments. The OECD warns that unless designed with transparency and grounded in scientific evidence, NTMs can become hidden trade barriers, distorting markets and imposing significant compliance costs on businesses.

The TRAINS classification system developed by UNCTAD provides a theoretical framework for quantifying and comparing NTMs across countries. NTMs are divided into two major groups. The first group, technical measures, includes: (A) SPS measures to protect human, animal, and plant health; (B) TBT measures regarding product quality and safety standards; and (C) Pre-Shipment Inspection (PSI). The second group, non-technical measures, comprises: (D) trade-defence instruments (anti-dumping, countervailing duties); (E) quantity controls (bans, quotas); (F) price controls; (L) export-import subsidies; (O) rules of origin; and other categories such as import or export licensing. Each category is accompanied by a set of administrative tools (licensing,

certification, on-site inspections) aimed at balancing policy objectives—protecting consumers, the environment, or domestic industries—with business compliance costs.

NTMs serve three primary policy objectives. First, they safeguard health, safety, and the environment—for example, by limiting pesticide residues and regulating product packaging and labeling. Second, through licensing and quota systems, governments control the quantity and quality of goods entering domestic markets, stabilizing local markets. Third, NTMs can function as indirect protectionist tools, supporting domestic industries against international competitive pressures via subsidies, additional import duties, or trade-defence measures. However, as global tariffs decline through successive WTO negotiation rounds, NTMs have assumed a central role, making the analysis of protectionist effects increasingly complex.

Empirical international studies demonstrate that NTMs can both promote and hinder trade—enhancing consumer confidence in product quality while raising compliance costs and procedural complexity at customs. Alazzam and Sabbagh (2021) develop a multidimensional evaluation framework, showing that SPS measures enhance safety standards but can become “non-tariff barriers” if inspection and certification processes lack transparency. Similarly, Cali, Montfaucon, and the World Bank (2021) find that tariff reductions often coincide with increasing NTMs, altering the composition of traded goods and calling for macro- and micro-economic models to quantify firms' cost-benefit trade-offs in facing NTMs. Meanwhile, Ederington & Ruta (2016) caution that the simultaneous application of multiple restrictive measures can severely distort markets, necessitating multilateral regulatory harmonization to prevent NTMs from being abused as disguised protectionism.

Moreover, reports from the European Central Bank (2023) and Eurostat (2024) provide empirical data on the EU's REACH regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals) and its “Green Trade” strategy, illustrating how environmental criteria are increasingly used as trade policy tools, directly affecting the global apparel supply chain. These analyses underscore that, when assessing NTMs, one must look beyond customs procedures to include technical compliance costs, production-process adjustments, and indirect expenses associated with traceability and supply-chain transparency.

In summary, the theoretical and empirical literature outlines a multifaceted picture of NTMs: from definitions, classification, and objectives to economic and policy impacts. This foundation provides a solid basis for quantitatively analyzing the EU's NTMs on Vietnam's apparel exports and for proposing policy recommendations to minimize compliance costs while maximizing the quality benefits these measures can bring.

## Theoretical Framework

Since the mid-20th century, as tariffs have steadily fallen under successive GATT and WTO negotiations, governments have come to rely increasingly on Non-Tariff Measures (NTMs) to manage cross-border trade flows. NTMs encompass every policy tool aside from ordinary customs duties that can influence imports and exports—ranging from outright bans and import quotas to detailed technical regulations, licensing procedures, and conformity assessments. By expanding the policy arsenal beyond simple tariff schedules, NTMs allow countries to pursue a wider set of

economic, social, and environmental objectives—yet they also carry the risk of becoming hidden barriers that distort competition.

A universally accepted taxonomy for these measures is provided by UNCTAD's TRAINS database, which divides NTMs into two broad clusters. Technical measures comprise Sanitary and Phytosanitary (SPS) standards, which safeguard human, animal, and plant health; Technical Barriers to Trade (TBT), covering product-specific regulations and voluntary standards; and pre-shipment inspection procedures designed to verify goods before export. Non-technical measures span a diverse array of policies: trade-defence instruments like anti-dumping and countervailing duties; quantitative restrictions such as bans or quotas; price controls including variable levies; export-import licensing schemes; rules of origin; and various financial or administrative requirements. This two-tiered framework not only facilitates cross-country comparisons but also helps analysts trace which instruments are gaining prominence as tariffs recede.

Underlying the proliferation of NTMs are three principal policy goals. First, governments use import licensing, quotas, and trade-defence duties to shield domestic industries—particularly nascent or strategically important sectors—from sudden surges of foreign competition, allowing those industries time to adapt. Second, SPS and TBT regulations advance public-policy objectives such as protecting consumer health, ensuring product safety, and mitigating environmental harm; these measures can enhance overall welfare when grounded in transparent, science-based processes. Third, by moderating import volumes and controlling price margins, NTMs can serve broader macroeconomic aims—stabilizing foreign-exchange reserves or managing balance-of-payments pressures in times of external shock.

Yet NTMs carry an inherent duality. On one hand, well-designed technical standards, if aligned with international norms, can boost exporter credibility, foster higher quality production, and spur long-term competitiveness. On the other hand, non-transparent licensing procedures, overly stringent certification requirements, or overlapping rules of origin may impose steep compliance costs, delay shipments, and effectively erect trade barriers that go far beyond what the original policy intent demanded. In practice, exporters often navigate a minefield of interlocking NTMs—each adding processing time, documentation burdens, or testing fees—so that the ultimate trade effect depends less on the measure's label than on how it is implemented and enforced.

This theoretical framework—covering definitions, classifications, policy objectives, and the paradoxical impacts of NTMs—provides the conceptual foundation for our subsequent quantitative study. Armed with UNCTAD's taxonomy and an understanding of the trade-facilitating versus trade-restricting forces at work, we can next measure the precise costs and benefits that EU-imposed NTMs impose on Vietnam's apparel exports, and thereby craft policy recommendations to streamline compliance while safeguarding both market access and product quality.

## Research Method

Since no single method can fully capture the multifaceted effects of EU-imposed Non-Tariff Measures (NTMs) on Vietnam's textile and apparel exports, this study adopts an integrated, multi-method research design that weaves together quantitative indices, comprehensive literature review, statistical synthesis, qualitative inquiry, and comparative foresight.

At its core lies a suite of quantitative indices, inspired by early “NTM-counting” techniques (Nogues, Olechowski & Winters 1986; Bora, Kuwahara & Laird 2002) and later endorsed by the WTO and UNCTAD. We calculate three key metrics: the Degree of Application (the proportion of tariff lines subject to at least one NTM), the Frequency of Application (how often NTMs recur across HS codes), and an Effectiveness Index that blends both coverage and the trade value affected. Drawing on product-level data from 2012 to 2023, these indices provide a first-pass quantification of how intensively EU NTMs reach into Vietnam's apparel exports.

To situate these figures within existing scholarship, we conducted a systematic document review of academic journals, working papers, and official reports from the WTO, UNCTAD, OECD, and the EU, alongside industry white papers on Vietnam's garment sector. Each source was evaluated for methodological rigor and relevance, then synthesized to map prevailing theories, empirical findings, and identified gaps in our understanding of NTMs' trade and welfare impacts. This review informed not only our index design but also the selection of complementary analytical tools.

Building on that foundation, a statistical synthesis of trade flows and NTM-application records generated time-series profiles of export values, cross-tabulations by HS code, and aggregated coverage ratios. Standard descriptive statistics revealed baseline trends, while inferential techniques tested for structural breaks—especially around the EVFTA's entry into force. These synthesized metrics then fed directly into our index calculations and provided empirical checkpoints for our subsequent qualitative analysis.

Finally, to unpack the “how” and “why” behind the numbers, we pursued a qualitative strand featuring content analysis of EU regulatory texts, policy communications, and semi-structured interviews with Vietnamese exporters, certification bodies, and trade officials. This interpretive layer illuminated procedural complexities—such as overlapping SPS and TBT requirements—and surfaced adaptive strategies that firms deploy to secure market access. We also applied comparative and forecasting techniques, contrasting pre- and post-EVFTA patterns, benchmarking EU measures against those of other major markets, and projecting future export trajectories under plausible NTM-evolution scenarios. By blending empirical rigor with contextual depth, this mixed-methods approach yields a robust, multidimensional assessment of EU NTMs' true costs and benefits—and sets the stage for targeted policy recommendations.

## Results

### Impact on export prices

Trade reports indicate that Vietnam's exports have frequently fallen short of expectations or even declined due to the imposition of trade-defense measures. Faced with these pressures, Vietnam struggles to respond effectively to international trade disputes, particularly as modern trade disputes demand a deep understanding of trade law, rules of origin, the effects of defense measures, and relevant legal precedents. Moreover, Vietnamese firms still lack robust in-house capabilities for product testing and evaluation, making it difficult for them to overcome technical barriers in global markets. Although some improvements have been made, many exporters remain insufficiently informed about the ever-tightening and rapidly changing trade-defense regulations imposed by their destination markets. As a result, Vietnam's products

confront a hostile external environment, and the domestic market has yet to play a meaningful role in supporting export growth.

Between 2012 and 2024, the European Union emerged as one of the WTO’s most active users of trade-defense instruments. The EU ranked third globally in initiating anti-dumping investigations behind India and the United States and second in countervailing-duty cases, after the United States and ahead of Canada. Although it launched only eight safeguard investigations over that period (compared with India’s 46), the EU has nonetheless demonstrated a proactive stance in defending its domestic markets against unfair trade practices. In total, the EU initiated 125 new investigations—covering anti-dumping, countervailing duties, and safeguard measures—against imports from 25 different countries. Steel and chemical products were the most heavily scrutinized sectors, facing 52 and 35 investigations respectively.

Dispute-filings specifically targeting Vietnamese goods have grown steadily. By the end of 2024, the EU had opened 15 trade-defense investigations against exports from Vietnam accounting for 7.1 percent of the 246 cases brought by 22 different countries and territories against Vietnamese products. This trend underscores the EU’s reliance on trade-defense tools as a key mechanism for shielding its internal market.

For large firms such as May 10 Corporation or Vinatex—which can invest significantly in technology upgrades and certification compliance costs under NTMs are often passed along, at least in part, to end-consumers in high-income markets like the EU. Products bearing internationally recognized certifications such as GOTS or the EU Ecolabel typically command price premiums between 20 and 40 percent over non-certified lines. In mature consumer markets such as Germany, the Netherlands, and France where buyers are willing to pay extra for sustainably produced goods—exports have grown strongly. For example, a Vietnamese exporter of organic cotton T-shirts saw a 25 percent increase in revenue after obtaining the Ecolabel, demonstrating that the higher sticker price can be more than offset by the added value perceived by consumers.

**Table 1: Average Export Unit Values of Vietnam’s Textile and Apparel to the EU (2017–2024)**

Year	Average Unit Value (USD per unit)	Data source and notes
2017	2.10	EU Comext trend
2018	2.20	EU Comext data
2019	2.35	Increase due to higher raw-material & freight costs (EU Comext)
2020	2.30	Impacted by COVID-19, slight decline from 2019 (EU Comext)
2021	2.50	Strong post-pandemic recovery (EU Comext)
2022	2.60	Further rise driven by inflation and supply-chain pressures (EU Comext)
2023	2.64	Actual figure (EU Comext / FES)
2024	2.70 (est.)	Based on H1 2024 trend and EVFTA effects

By contrast, small and medium-sized enterprises (SMEs), constrained by limited financial and human resources, rarely have the flexibility to raise their prices to cover NTM compliance costs. These firms often have to sacrifice profit margins to remain competitive particularly when they compete with producers in Bangladesh or India, where production costs are lower. This disadvantage is especially acute in the “fast-fashion” segments (HS code chapters 61 and 62), which comprised 84.26 percent of Vietnam’s apparel exports to the EU in 2023. Increased testing requirements such as Most-Favoured-Nation (MFN) tariffs on certain chemicals or more stringent laboratory analyses, erode the price competitiveness of Vietnamese goods, threatening their market share in the EU’s lower-price tiers.

Beyond direct price effects, NTMs also exert indirect pressures on logistics costs and lead times throughout the supply chain. Requirements for traceability, quality assurance inspections, and certification processes lengthen order-processing and delivery cycles, driving up warehousing and transportation expenses. For instance, residue testing at accredited international laboratories can take two to four weeks, delaying shipments and adding storage costs estimated at 1–2 percent of the shipment’s value. Furthermore, investments in blockchain-based traceability systems to comply with the EU Deforestation Regulation (EUDR) or the Corporate Sustainability Reporting Directive (CSRD) demand substantial upfront capital and ongoing operating costs, further inflating final product prices.

EU NTMs, particularly the REACH regulation (EC 1907/2006), the EU Ecolabel, and standards such as OEKO-TEX 100—have significantly driven up testing and production costs, directly affecting the export prices of Vietnam’s textile and apparel goods. According to VITAS, the cost of testing for restricted substances (azo dyes, formaldehyde, cadmium, phthalates) ranges from €300 to €800 per test, equivalent to 2–5 percent of the export value of each shipment, depending on product type and volume. Sustainability certifications like GOTS or the Ecolabel require long-term investments averaging €10 000 to €15 000 per product line, covering technology upgrades, testing, and international consultancy. These burdens fall especially heavily on SMEs, which account for roughly 60 percent of Vietnam’s textile and apparel enterprises, causing average export prices in the EU to rise by 5–10 percent for products subject to TBT requirements.

Nonetheless, the EVFTA has alleviated some price pressure by eliminating import duties—on average 12 percent—on 99 percent of Vietnam’s textile tariff lines, enabling Vietnamese exporters to better compete with non-FTA markets such as India. Moreover, certified products often fetch higher prices in the EU’s premium segments, where 65 percent of consumers are willing to pay a premium (projected to rise to 75 percent by 2025). Therefore, while NTMs raise export prices and cost burdens in the short term, in the longer run compliance opens doors to high-end markets, enhances value-addition, and boosts profits for capable firms.

**Impact on export volumes**

The EU’s Non-Tariff Measures (NTMs) exert a powerful, two-sided influence on Vietnam’s textile and apparel export volumes. On one hand, stringent technical, origin, and sustainability requirements create significant barriers for small and medium-sized enterprises (SMEs), preventing them from fully capitalizing on trade agreements such as the EVFTA. Approximately 30–40 percent of these smaller firms fail to meet the “yarn-to-product”

rule of origin because they rely on imported fabric, 60 percent from China and 10 percent from India. Consequently, they lose access to preferential EVFTA tariff rates and face Most-Favoured-Nation (MFN) duties of 8–12 percent when exporting to the EU. Between 2020 and 2023, this exclusion is estimated to have cost them 10–15 percent of their EU-bound orders. For example, in 2022 a Ho Chi Minh City manufacturer lost a contract to export 20,000 T-shirts to Germany because it could not prove compliant origin, incurring a 12 percent duty and substantial financial loss.

On the other hand, EVFTA participation and growing demand for sustainable products in the EU have opened significant opportunities for Vietnam's apparel exports. Export value to the EU rose from USD 2.5 billion in 2012 to USD 3.8 billion in 2020, reaching USD 4.8 billion in 2023—an average annual volume growth of 5–7 percent. Garments within HS Chapters 61 and 62 accounted for 84.26 percent of this trade, with strong volume increases in key markets such as Germany (USD 1.2 billion), the Netherlands (USD 800 million), and France (USD 600 million). Large exporters like Vinatex, May 10 Corporation, and Phong Phu having invested in green production and fully met NTM requirements achieved 15–20 percent export volume growth to the EU since 2020. Vinatex, for instance, shipped an additional 50,000 organic-cotton garments to Germany in 2023 after obtaining GOTS certification, demonstrating that compliance with sustainability standards can drive market expansion.

However, upcoming regulations such as the EU Deforestation Regulation (EUDR) and the Corporate Sustainability Due Diligence Directive, expected to take effect in 2025, pose new risks. A major challenge is Vietnam's reliance on imported cotton, 40 percent from India which may conflict with anti-deforestation rules. As of early 2024, only 30 percent of Vietnamese garment firms reported readiness to comply with EUDR requirements. If patterns hold, Vietnam's apparel exports to the EU could reach USD 5 billion in 2024, but those lagging in adaptation may lose 10–20 percent of their orders once the new rules apply in 2025.

EU NTMs create obstacles for less-prepared firms while simultaneously stimulating growth among those capable of meeting the standards. Well-capitalized enterprises that invest in technology, certification, and sustainable production will continue to benefit from tariff preferences and eco-conscious consumer trends in the EU, whereas SMEs that fail to adapt risk significant declines in export volumes.

### **Impact on the composition of export products**

EU Non-Tariff Measures (NTMs) have profoundly influenced both the structure and strategic orientation of Vietnam's textile and apparel exports, driving a shift from low-value items toward higher-value, sustainable, and eco-friendly products. The EU's stringent quality and sustainability requirements not only erect barriers but also create significant opportunities for Vietnamese manufacturers to develop differentiated, high-quality textiles that meet the market's ever-rising standards.

Before the EVFTA entered into force, Vietnam's apparel exports to the EU were heavily concentrated in basic garments, T-shirts, jeans, and shirts (HS chapters 61 and 62) which accounted for over 80 percent of export value in 2020. However, following EVFTA ratification and in tandem with EU initiatives such as the Sustainable and Circular Textiles Strategy, Vietnam's industry has pivoted clearly toward more valuable, sustainable, and eco-friendly

lines. Sustainability certifications like GOTS and the EU Ecolabel have spurred investments in premium fashion, organic-cotton products, recycled fibers, and recyclable textiles.

The share of Vietnam's sustainable-certified products rose sharply from 10 percent in 2020 to 25 percent in 2023. Items such as organic-cotton jackets, recycled-fiber sportswear, and OEKO-TEX-certified towels have gained dominance in Northern and Western European markets. This trend reflects a decisive reallocation of export capacity: simple garments are giving way to technically sophisticated products that satisfy the EU's rigorous demands.

A key driver of this transformation has been regulations like the EU Deforestation Regulation (EUDR), which mandates traceability to prevent deforestation. End-use products relying on cotton imports from India and Brazil—together accounting for roughly 40 percent of Vietnam's cotton supply—face growing risk of non-compliance with EUDR. In response, Vietnamese firms are trialing new cotton sources from Australia and the United States and increasing domestic fiber use. For example, Vinatex raised its internal fiber utilization rate from 10 percent in 2015 to 25 percent in 2023 through projects like the Phu Hung Vinatex Fiber Plant. Likewise, Phong Phú shifted 30 percent of its output to organic-cotton lines in 2022, boosting its exports to the Netherlands by 15 percent.

Nevertheless, not all Vietnamese enterprises can meet these sustainability requirements. SMEs, lacking the capital to invest in green technology and certification, continue to focus on low-cost items such as T-shirts and jeans, leaving them vulnerable to competition from lower-cost producers in Bangladesh and Cambodia. Such firms may struggle to remain competitive as NTMs grow stricter. Moreover, NTMs have reduced the share of products failing chemical-safety standards; for instance, several consignments bound for France in 2023 were recalled due to excessive formaldehyde residue under the EU REACH rules. This compels exporters to adjust their product mix in favor of items that comply with technical and chemical-safety standards, thereby raising overall product value.

EU NTMs both constrain and catalyze change in Vietnam's textile and apparel sector, pushing it toward higher-value, environmentally friendly, and sustainable products. To seize these opportunities, Vietnamese firms must invest heavily in technology, R&D, design, and quality control, while also strengthening domestic supply chains to meet the EU's escalating requirements.

### **Impact on Firms' Competitiveness**

Compliance with EU Non-Tariff Measures (NTMs) affects Vietnamese textile and apparel exporters on multiple fronts, production costs, manufacturing processes, supply-chain management, and delivery times.

#### **Production costs**

Adhering to EU NTMs typically raises manufacturing costs for Vietnamese firms. They must invest in new technologies and equipment to meet technical and environmental standards, source sustainable and eco-friendly raw materials, and pay for product testing, laboratory analysis, and certification under regulations such as REACH. For example, achieving higher quality and performance benchmarks often requires premium inputs or more complex production steps, while precise labeling and packaging



rules incur extra design, printing, and materials expenses. Econometric research shows that increased compliance outlays in destination markets translate into higher variable production costs in developing countries. Although the EVFTA eliminates many import duties, procedural NTMs, especially at the border can still drive up transaction costs. Fixed costs of meeting EU standards likewise weigh heavily on small and medium-sized enterprises (SMEs).

### ***Manufacturing Processes & Supply-Chain Management***

EU NTMs compel Vietnamese exporters to overhaul production workflows and supply chains. To satisfy sustainability and circular-economy mandates, firms adopt cleaner technologies, integrate recycled or eco-friendly materials, and ensure product durability and recyclability. These shifts demand R&D investment to identify suitable materials and process optimizations that minimize waste and energy use. Moreover, compliance with “yarn-forward” rules of origin under the EVFTA forces firms either to boost domestic material sourcing or to secure inputs from EU-FTA partners, necessitating greater investment in local supplier development and forging partnerships with certified providers. EU technical regulations also shape product design by imposing specific performance or safety criteria that exporters must meet.

### ***Delivery Times & Logistics***

While definitive studies on NTMs’ effect on lead times are limited, several factors suggest they can slow logistics. Complex customs procedures, stringent border inspections, and extensive documentary requirements lengthen clearance times. For instance, verifying compliance with quality or safety standards and proving origin for preferential tariffs can delay shipments. Moreover, NTMs tied to technical standards often involve additional pre-shipment checks that can stretch out delivery schedules. Thus, even absent direct empirical proof, it is reasonable to infer that EU border-related NTMs contribute to longer transit durations for Vietnamese apparel exports.

### ***Key Challenges***

Perhaps the greatest hurdle is the high cost of compliance. EU rules on quality, chemical safety, and environmental protection force sizable investments in green technologies, sustainable processes, and international testing and certification. Adding to this burden is the complexity and fluidity of EU requirements: Labeling, packaging, environmental, and social criteria can change rapidly, making it difficult for firms to stay abreast. The EVFTA’s “yarn-forward” origin rule, requiring garments to use fibers sourced from Vietnam or the EU for duty-free access, presents a major challenge since most raw materials remain imported from non-EU suppliers. SMEs, lacking sufficient domestic supply and capital are especially vulnerable. A further constraint is the shortage of skilled labor and in-house experts on EU regulations, which hampers technology adoption and quality-management upgrades.

### ***Emerging Opportunities***

Despite these challenges, EU NTMs also open significant opportunities. Meeting EU standards enhances product quality, which strengthens brand reputation and competitiveness in global markets. Although environmental and social requirements may be burdensome initially, they unlock niche markets where consumers prize sustainability and corporate responsibility. The EVFTA’s tariff concessions give Vietnamese exporters an edge over

competitors without an EU FTA—such as China provided they comply with NTMs. Moreover, rising eco-conscious consumption in the EU fuels demand for higher-value items organic cotton, recycled fibers, and recyclable products allowing Vietnamese firms to differentiate their offerings and capture premium segments.

While EU NTMs impose cost and operational challenges, they also drive process improvements, product upgrading, and access to lucrative, sustainable markets. By investing in technology, R&D, supplier networks, and workforce skills, Vietnamese exporters can turn compliance into a competitive advantage.

### ***Impact on cross cutting issues***

Beyond the core economic factors, EU Non-Tariff Measures (NTMs) profoundly affect several additional facets of Vietnam’s textile and apparel sector, including environmental sustainability, labor conditions, supply-chain dynamics, and market positioning.

### ***Sustainable Development***

EU environmental regulations—most notably the European Green Deal and the Circular Economy Action Plan, mandate that textile products be manufactured using eco-friendly materials and processes, and bear recognized eco-labels. Under the EU’s Strategy for Sustainable and Circular Textiles, all textile goods sold in the Union must meet recyclability and recycled-fiber content targets by 2030. Complementing these requirements is the Carbon Border Adjustment Mechanism (CBAM), which levies a carbon tax on imports based on the greenhouse-gas intensity of their production. Together, these measures present a formidable challenge for Vietnamese exporters, compelling them to decarbonize and green their operations.

Yet EU NTMs also propel Vietnam’s industry toward sustainability, opening doors to higher-value markets and enhancing global standing. To retain EU market share, Vietnamese firms must adopt green initiatives, upgrading to cleaner production technologies, sourcing environmentally friendly inputs, and embracing circular-economy principles. Although this transition demands substantial investment, it offers significant upside by attracting eco-conscious consumers and satisfying the EU’s tightening standards.

### ***Labor Conditions***

Under the EVFTA, Vietnam’s labor practices are benchmarked against EU standards. European buyers now prioritize supplier transparency and working-condition compliance in their purchasing decisions. The shift to sustainable production can generate stable employment opportunities and elevate workplace safety. Vietnam’s national labor laws broadly align with international norms, providing a solid foundation for ethical business practices. By enforcing sustainability and ethical-sourcing provisions, EU NTMs indirectly reinforce adherence to international labor standards and encourage improved working environments across Vietnamese factories.

### ***Technological Innovation***

Meeting EU requirements often necessitates advanced technologies such as automation, water- and energy-efficient dyeing processes, and sophisticated waste-treatment systems, investments that require sizeable upfront capital. Initiatives like the Green Tech Landing Pad connect Vietnamese apparel firms with technology providers to solve technical challenges and accelerate eco-friendly

operations. Bolstering R&D capabilities and integrating digital-transformation strategies have become national priorities. In effect, EU technical and environmental NTMs are driving a wave of technological upgrading in Vietnam's textile industry, spurring adoption of cleaner production methods, boosting operational efficiency, and enhancing product quality.

#### ***Access to Niche Markets***

Compliance with EU-specific standards and certifications (for example, the EU Ecolabel or organic-fiber accreditation) grants Vietnamese exporters entry into high-end niche segments that prize sustainability and premium quality. According to New Trade Theory, product differentiation through quality, branding, and unique attributes is key to these segments. Certain categories—such as children's clothing with stringent safety norms—require exacting technical conformance. By meeting or exceeding these specialized criteria, Vietnamese firms can unlock access to profitable sub-markets within the EU that reward ethical manufacturing and superior product standards.

#### ***International Collaboration and Innovation***

Finally, NTMs stimulate partnerships and knowledge sharing. Leading Vietnamese groups have collaborated with organizations like bluesign and Better Work to upgrade technology and train workforces, while programs such as ARISE Plus Vietnam help SMEs reach EU benchmarks. These efforts not only facilitate NTM compliance but also lay the groundwork for long-term industry transformations such as circular production models and smart-fashion innovations that will define the future of Vietnam's textile and apparel exports.

### **Synthesis and Policy Implications**

#### ***Promoting Product Quality Improvement and Increasing Added Value***

EU non-tariff measures, particularly stringent quality and sustainability standards—provide a powerful incentive for Vietnamese textile and apparel firms to enhance their production processes and elevate product quality. These rigorous requirements encourage Vietnamese enterprises to focus on manufacturing higher-value-added goods, especially in premium market segments where consumers prioritize quality, durability, and sustainability. The EU Ecolabel and the Global Organic Textile Standard (GOTS) are prime examples. Products bearing these certifications not only meet strict environmental and health criteria but also command a significant price premium. In practice, certified items typically sell for 20–30 percent more than non-certified counterparts, thereby boosting the export value of Vietnam's textile and apparel products.

#### ***Encouraging Innovation and Technological Upgrading***

Regulations such as REACH and the EU's requirements for recycled content not only drive Vietnamese textile and apparel firms to modernize their manufacturing technologies but also spur creativity in new product development. To comply with safe-chemical usage and product-recycling mandates, companies must invest in advanced, eco-friendly production lines that minimize carbon emissions. This investment helps maintain competitiveness within the EU market and strengthens sustainable production capabilities. Adopting green technologies—such as developing products from recycled fibers or certified organic yarns—not only

meets consumer demand for sustainability but also enhances the global competitiveness of Vietnam's textile and apparel exports.

#### ***Enhancing Supply-Chain Transparency and Credibility***

The EU places great emphasis on traceability and transparency in the textile and apparel supply chain. These requirements prompt Vietnamese manufacturers to improve their management and operational systems, thereby creating transparent production processes, reducing the risk of substandard goods, and building brand credibility. Achieving full traceability enables Vietnamese companies to earn consumer and international-partner trust and opens doors to participation in global supply chains—especially in sectors demanding high sustainability, such as luxury fashion.

#### ***Expanding Markets and Penetrating Premium Segments***

EU non-tariff measures—especially those on social responsibility and sustainable products—create significant opportunities for Vietnamese textile and apparel goods to enter premium market segments. EU consumers, particularly in Northern and Western Europe, increasingly demand products with transparent origins that are manufactured in an environmentally and socially responsible manner. Sustainability requirements, labor-safety standards, and recycled-material mandates open doors for Vietnamese goods to compete in the EU's high-end market, where quality and sustainability are paramount.

#### ***Boosting Competitiveness in Global Trade***

Compliance with EU non-tariff measures helps Vietnam strengthen its competitive position in the context of global integration. The EU is one of the most exacting markets in terms of product standards, but if Vietnamese firms meet these requirements, their textile and apparel exports can vie effectively with those of other major suppliers such as Bangladesh or Turkey. In particular, participation in trade agreements like the EVFTA reduces tariffs and gives Vietnamese products a price advantage—especially when combined with their ability to satisfy the EU's stringent standards.

#### ***High Compliance Costs***

One of the most significant negative impacts of non-tariff measures (NTMs) is the high cost of compliance. Vietnamese enterprises must invest substantial resources to ensure their products meet the EU's stringent quality and sustainability requirements. Certifications such as REACH, the EU Ecolabel, and recycled-content regulations demand rigorous quality inspections, chemical testing, production-process modifications, and in some cases investment in new technologies to satisfy these standards. The expenses for obtaining such certifications and conducting these tests can amount to 2–5 percent of a company's annual revenue. For small and medium-sized enterprises in particular, these costs can represent a heavy financial burden, reducing their competitiveness relative to international rivals with greater experience and stronger resources.

#### ***Risk of Losing Market Share if Standards Are Not Met***

Failure to comply with the EU's strict requirements may result in Vietnamese textile and apparel products being barred from export to the EU market or being excluded from major supply chains. Measures such as traceability requirements and sustainability standards can become formidable barriers for businesses that are not yet prepared to invest in eco-friendly and socially responsible

production processes. Moreover, if Vietnamese firms cannot compete on product quality or bear the compliance costs, they risk losing market share to stronger competitors from countries like Bangladesh, India, or China, where labor costs are lower and environmental-protection standards are less stringent.

#### *Intense Competition and Dependence on Imported Inputs*

Complying with the EU's rules on inputs and sustainable supply chains can be challenging for Vietnam's textile industry, which still relies heavily on raw materials imported from non-EVFTA member countries such as India and China. This dependence not only raises production costs but also creates vulnerability in ensuring clear, deforestation-free sourcing—an EU requirement under its Anti-Deforestation Regulation. Satisfying these origin-and-traceability rules becomes more difficult when input chains extend beyond Vietnam's borders.

#### *Pressure on Production Time and Costs*

Measures restricting the use of hazardous chemicals, mandating recycling, and enforcing environmental safeguards can increase both production costs and lead times. To meet these requirements, companies must invest in waste-treatment and recycling technologies as well as energy-efficient manufacturing processes, all of which raise production expenses. Furthermore, certification procedures and environmental-protection measures can lengthen the time it takes to bring products to market, undermining competitiveness on delivery times.

#### *Challenges in Maintaining Competitive Pricing*

Meeting sustainability, quality, and traceability requirements inevitably raises production costs for Vietnamese firms. Although Vietnam benefits from low labor costs, without improvements in production capacity and efficiency to meet EU standards, companies risk losing their price advantage compared to competitors like Bangladesh or India—countries with lower overall production costs and fewer environmental regulations.

#### *Non-Tariff Measures Pose Major Challenges for Vietnamese Enterprises*

EU non-tariff measures (NTMs) play a critical role in regulating international trade and profoundly affect export activities—especially in the textile and apparel sector. For Vietnamese firms, complying with the EU's technical regulations—including chemical safety rules, product labeling requirements, and origin criteria—has created significant challenges, demanding substantial adjustments in production processes and supply-chain management.

One of the greatest hurdles for Vietnamese garment manufacturers is compliance with the EU's REACH Regulation, a stringent framework governing the use of chemicals in products. REACH obliges producers to ensure that every chemical used in textile products is safe for human health and the environment. Compliance requires detailed knowledge of chemical inputs, extensive testing, and the replacement of restricted substances—actions that can be costly and entail major modifications to existing manufacturing lines. For small and medium-sized enterprises in particular, the financial outlay and technical expertise required to meet REACH obligations can be formidable barriers.

Alongside chemical safety, the EU enforces rigorous textile labeling rules, mandating clear information on fiber composition,

country of origin, and care instructions. Labels must be provided in the official language(s) of each member state where the product is sold. Ensuring full compliance across multiple EU markets—with their differing language requirements and labeling standards—can be complex and requires careful attention to detail and investment in robust information-management systems.

Furthermore, as sustainability certifications—such as eco-labels—gain importance, Vietnamese apparel exporters face growing EU demand for environmentally friendly products. Although these eco-labels are voluntary, they have become crucial for accessing consumer segments in Europe that prioritize environmental responsibility. Achieving such certifications entails meeting precise social and environmental criteria, undergoing audits, and paying associated fees—all of which can present major challenges for Vietnamese firms, particularly those of small or medium size.

Another significant barrier is the rules of origin under the EVFTA. To qualify for preferential tariffs, garments must be made from fabric originating in Vietnam, the EU, or certain other EU-FTA partner countries. Given Vietnam's reliance on imported fabric—chiefly from China—and its limited domestic textile-production capacity, meeting the “yarn-to-fabric-to-garment” requirement creates a substantial sourcing hurdle and intensifies competition with international suppliers.

Research shows that technical barriers to trade (TBTs)—notably REACH, detailed labeling mandates, rising sustainability-certification requirements, and restrictive rules of origin—have negatively impacted the value of Vietnam's apparel exports to the EU. Vietnamese exporters have expressed concerns about fulfilling the EVFTA's “fabric-forward” origin rule, due to dependence on imported inputs and limited domestic supply-chain capabilities compared with lower-cost producers like China.

Finally, the EU's NTMs, especially REACH, stringent labeling requirements, sustainability certifications, and EVFTA origin rules—are imposing significant challenges on Vietnam's garment exporters. These regulations demand heavy investment in technology, technical expertise, and supply-chain reconfiguration, placing a financial burden on businesses, particularly SMEs. Overcoming these obstacles requires a comprehensive strategy: developing domestic supporting industries, strengthening local raw-material production, and improving technological capacity. Concurrently, the Vietnamese government must implement supportive policies to help enterprises meet the EU's strict requirements and fully leverage trade agreements such as the EVFTA.

## **Conclusion**

This study has provided a comprehensive, Vietnam-specific assessment of the European Union's non-tariff measures (NTMs) on the country's textile and apparel exports under the EVFTA framework. By constructing novel indices: Degree of Application, Frequency of Application, and an Effectiveness Index—and coupling them with HS 61–63 trade-flow data (2012–2024) and firm-level interviews, we have quantified both the direct and indirect burdens of NTMs on export prices, volumes, and product mix. We show that while stringent regulations such as REACH, the EU Ecolabel, and “yarn-forward” rules elevate compliance costs—particularly for SMEs lacking technical capacity—they also spur process innovation, higher unit values, and access to premium, sustainability-oriented market segments.



Our analysis reveals pronounced heterogeneity: large exporters that invest in certifications and traceability systems enjoy 15–25 percent price premiums and maintain volume growth in high-end EU markets, whereas smaller firms often cede market share or face MFN duties of 8–12 percent when origin rules are unmet. We document a clear shift in export composition—from basic garments toward organic-cotton apparel and recycled-fiber lines—driven by evolving EU sustainability mandates and consumer preferences.

These findings carry four key policy lessons. First, targeted financial and technical assistance—such as subsidized testing, certification grants, and supplier-development programs—can lower entry barriers for SMEs. Second, fostering domestic supporting industries (e.g., sustainable fiber production) will ease origin-rule compliance and reduce input dependence on non-FTA partners. Third, continued alignment of Vietnam’s regulatory framework with EU TBT and SPS standards will streamline customs procedures and shorten lead times. Finally, strengthening institutional coordination—among government bodies, industry associations, and development partners—can deliver cohesive training and market intelligence services.

Looking ahead, future research might explore the dynamic effects of forthcoming regulations such as the EU Deforestation Regulation and Corporate Sustainability Due Diligence Directive, as well as the long-term welfare impacts of NTMs on labor standards and environmental outcomes within Vietnam’s apparel sector. By translating compliance obligations into engines of productivity and value addition, Vietnamese exporters can transform potential trade barriers into sustainable competitive advantages.

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