

## TRADE POLICY OPENNESS AND SUSTAINABLE DEVELOPMENT OUTCOMES: A QUANTILE REGRESSION ANALYSIS

**Purpose.** This study examines the heterogeneous effects of trade policy openness on sustainable development outcomes across the conditional distribution of country performance. While existing literature has established a positive aggregate relationship between globalisation and development, limited attention has been paid to the distributional heterogeneity of trade regulatory frameworks' effects on specific Sustainable Development Goals (SDGs), particularly those most directly linked to trade and customs regulation: SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 17 (Partnerships for the Goals).

**Methods.** The study employs panel quantile regression on a dataset covering 167 countries over the period 2001–2023. Trade policy openness is operationalised through the KOF Trade Globalisation *de jure* index, which captures customs duties, trade taxes, regulatory trade barriers, and trade agreement coverage. The *de facto* trade globalisation index is included simultaneously to disentangle policy architecture effects from actual trade flows. Controls include governance quality (Worldwide Governance Indicators), GDP per capita, and population size. All independent variables are lagged by one year to mitigate reverse causality.

**Results.** The findings reveal three distinct patterns. For SDG 9, trade policy openness exerts a strong, positive, and remarkably uniform effect across all quantiles (coefficients ranging from 0.089 to 0.115), while *de facto* trade flows show no independent effect. This suggests that the regulatory architecture of trade, including customs facilitation and barrier reduction, is the primary channel through which trade engagement advances industrial and innovative capacity. For SDG 8, the effect is asymmetric: trade policy openness significantly benefits countries at the top of the performance distribution (Q90: 0.050) but not at the median. For SDG 17, a non-monotonic pattern emerges, with negative effects at lower quantiles and positive effects at upper quantiles.

**Conclusions.** The results demonstrate that trade policy frameworks, rather than actual trade volumes, constitute the primary mechanism linking international economic engagement to progress in sustainable development. The findings have direct implications for customs administrations: streamlining trade regulatory environments and deepening trade agreements can yield measurable gains in industrial development outcomes, particularly for lower-income economies, where the marginal effect of policy openness is largest.

**Key words:** trade policy openness, international trade, Sustainable Development Goals, quantile regression, customs regulation, KOF Globalisation Index, trade liberalisation, income heterogeneity.

**JEL Classification:** F13, F18, O19, Q01, C21.

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**Introduction.** The 2030 Agenda for Sustainable Development recognises international trade as a critical means of implementation for achieving the Sustainable Development Goals (SDGs). Trade policy openness, encompassing customs tariff regimes, regulatory trade barriers, and the depth and coverage of trade agreements, shapes the conditions under which economies can harness international exchange for development gains. Yet the empirical relationship between trade regulatory frameworks and specific SDG outcomes remains surprisingly underexplored, particularly with respect to the heterogeneity of this relationship across different levels of development performance.

A growing body of literature examines the globalisation–development nexus using composite indices (Dreher, 2006; Gygli et al., 2019), but most studies treat globalisation as a monolithic phenomenon, aggregating trade, financial, social, and political dimensions into a single measure. The critical distinction between *de jure* globalisation (policy frameworks, including customs regimes and trade agreements) and *de facto* globalisation (actual

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flows of goods, capital, and people) introduced by Gygli et al. (2019) has been applied to GDP growth, environmental outcomes, and shadow economies (Bataka, 2019; Leal et al., 2021; Berdiev et al., 2023), but not systematically to multidimensional SDG performance.

This paper addresses three gaps in the existing literature. First, it isolates the trade policy dimension of globalisation, which directly reflects customs and regulatory frameworks, from aggregate globalisation measures. This is particularly relevant for customs administrations seeking evidence-based guidance on whether trade facilitation reforms translate into measurable development gains. Second, it simultaneously estimates the effects of *de jure* (policy architecture) and *de facto* (actual trade flows) dimensions, enabling a direct comparison of whether it is the regulatory environment or the volume of trade that drives SDG progress. Third, it employs panel quantile regression (Koenker and Bassett, 1978; Koenker, 2004) to examine whether trade policy openness has differential effects across the conditional distribution of SDG performance, rather than focusing solely on the conditional mean.

The analysis focuses on three SDGs most directly linked to trade and customs policy: SDG 8 (Decent Work and Economic Growth), which captures labour market outcomes and economic dynamism; SDG 9 (Industry, Innovation, and Infrastructure), which reflects productive capacity and technological capability; and SDG 17 (Partnerships for the Goals), which measures international cooperation and policy coherence. Using a panel of 167 countries over 2001–2023, the study draws on the KOF Globalisation Index (Gygli et al., 2019), the Sustainable Development Report (Sachs et al., 2024), and the Worldwide Governance Indicators (Kaufmann et al., 2010).

The remainder of the paper is organised as follows. Section 2 reviews the relevant literature. Section 3 describes the data and methodology. Section 4 presents the results, including baseline OLS estimates, quantile regression findings, and income-group heterogeneity analysis. Section 5 concludes with policy implications for customs administrations and trade policymakers.

**Literature Review. Globalisation, trade openness, and development.** The empirical investigation of whether globalisation promotes economic development has a long history. Dreher (2006) introduced the original KOF Globalisation Index and found a positive association between overall globalisation and economic growth. Potrafke (2015) provided a comprehensive survey showing that globalisation generally promotes growth, though with heterogeneous effects depending on institutional quality and income levels. The major methodological advance came with Gygli et al. (2019), who revised the KOF Index to decompose each dimension into *de jure* (policy-based) and *de facto* (outcome-based) components, enabling researchers to distinguish whether it is the policy architecture or the actual flows that matter for development outcomes.

Subsequent studies exploiting this decomposition have focused predominantly on economic growth and environmental outcomes. Bataka (2019) found that *de jure* economic globalisation drives growth in Sub-Saharan Africa, while *de facto* measures have weaker effects. Leal et al. (2021) examined environmental performance, finding that the policy dimension of globalisation has distinct effects from actual flows. Berdiev et al. (2023) applied the decomposition to the shadow economy, demonstrating that *de jure* and *de facto* globalisation operate through different channels. However, no study has systematically applied this decomposition to the multidimensional SDG framework.

**Trade policy and the SDGs.** The relationship between trade and sustainable development has attracted growing attention. The World Trade Organization has increasingly emphasised trade as a means of SDG implementation (WTO, 2018). Empirical studies have examined specific channels: trade openness and poverty reduction (Winters et al., 2004), trade agreements and environmental provisions (Morin et al., 2018), and customs modernisation and trade facilitation (Grainger, 2011; Widdowson, 2007). The Trade Facilitation Agreement (TFA), implemented since 2017, explicitly links customs reform to development outcomes through provisions on transparency, fees, and border procedures.

Recent panel studies have begun to connect globalisation indices directly to SDG scores. Chuong et al. (2025) used the KOF index with pooled mean group estimation for 104 countries, finding that the effect of globalisation on SDG performance varies across income groups, with negative effects in fragile states and positive effects in successfully developing economies. Halkos et al. (2025) applied a club-convergence analysis using KOF scores to 149 countries. However, both studies treat the KOF index in its aggregate form, without exploiting the *de jure/de facto* decomposition or disaggregating it by trade policy dimension.

**Quantile regression in development economics.** Standard regression methods estimate the effect at the conditional mean, potentially masking substantial heterogeneity across the distribution of the dependent variable. Quantile regression, introduced by Koenker and Bassett (1978) and extended to panel settings by Koenker (2004), allows estimation at any point of the conditional distribution. In the context of SDG performance, this is particularly informative: the effect of trade policy openness may differ substantially for countries at the bottom of the SDG distribution (lagging countries) versus those near the top (leaders). Existing applications include Meinhard and Potrafke (2012), who used quantile regression to examine the effect of globalisation on income inequality, and Uddin et al. (2017), who applied it to governance and economic development. To the best of the author’s knowledge, no previous study has applied quantile regression to the trade policy–SDG nexus.

**Data and Methodology. Data sources and sample.** The analysis draws on four principal data sources. The dependent variables are individual SDG goal scores from the Sustainable Development Report (Sachs et al., 2024), which provides annual scores on a 0–100 scale for each of the 17 SDGs across 208 countries from 2000 to 2023. We focus on SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 17 (Partnerships for the Goals), selected for their direct relevance to trade policy and customs regulation.

The key independent variables are the trade globalisation sub-indices from the KOF Globalisation Index (Gygli et al., 2019), updated through 2023. The *de jure* trade globalisation index (kof\_trade\_dejure) captures the policy architecture of trade openness, including mean tariff rates, tariff revenue as a share of trade, trade taxes, and non-tariff barriers such as regulatory trade restrictions and the depth and coverage of trade agreements. The *de facto* trade globalisation index (kof\_trade\_defacto) captures actual trade flows relative to GDP and partner diversity.

Control variables include the composite Worldwide Governance Indicators (Kaufmann et al., 2010), comprising six dimensions of institutional quality; GDP per capita in purchasing power parity terms (constant 2021 international dollars) from the World Development Indicators; and total population. All independent variables are lagged by one year to mitigate simultaneity concerns. The final estimation sample comprises 3,406 country-year observations for 167 countries over 2001–2023.

Table 1

**Descriptive Statistics**

Variable	N	Mean	SD	Min	Q25	Median	Q75	Max
SDG 8: Decent Work & Growth	4728	68.87	8.41	40.1	64.11	69.29	74.44	90.72
SDG 9: Industry & Innovation	4992	37.52	24.82	0	18.3	30.48	51	99.65
SDG 17: Partnerships	4992	64.09	9.22	40.92	57.78	64.26	70.34	91.25
KOF Trade de jure	3813	55.96	23.48	2.6	36.7	55.15	77.96	96.98
KOF Trade de facto	4375	55.58	18.34	4.36	41.27	57.06	69.44	99.56
Regulatory Quality (WGI)	4352	-0.08	0.99	-2.55	-0.77	-0.2	0.63	2.31
Governance Quality (WGI)	4430	-0.06	0.91	-2.41	-0.73	-0.19	0.63	1.95
GDP per capita, PPP (\$)	4426	21736.02	23520.89	702.85	4765.21	13206.95	30612.34	145590.76
Trade Openness (% GDP)	3911	86.41	50.66	2.47	53.56	75.96	104.99	437.33
Population	4632	36729895.69	137403204.35	9544	1818448.25	7587213	25330794.75	1438069596

Source: Author’s compilation based on SDR (2024), KOF (2025), WGI (2024), WDI (2024).

**Econometric approach.** The baseline specification is estimated using pooled ordinary least squares (OLS) with clustered standard errors at the country level:

$$SDG_{g,i,t} = \alpha + \beta_1 TradeDeJure_{i,t-1} + \beta_2 TradeDeFacto_{i,t-1} + \gamma' X_{i,t-1} + \varepsilon_{i,t}$$

where  $SDG_{g,i,t}$  is the score for goal  $g$  in country  $i$  at time  $t$ ;  $TradeDeJure$  and  $TradeDeFacto$  are the KOF trade sub-indices;  $X$  is a vector of controls (governance quality, log GDP per capita, log population); and all regressors are lagged one period.

The main empirical contribution employs quantile regression (Koenker and Bassett, 1978). For each quantile  $\tau \in \{0.10, 0.25, 0.50, 0.75, 0.90\}$ , we estimate:

$$Q_\tau(SDG_{g,i,t} | Z_{i,t-1}) = \alpha(\tau) + \beta_1(\tau) TradeDeJure_{i,t-1} + \beta_2(\tau) TradeDeFacto_{i,t-1} - 1 + \gamma(\tau)' X_{i,t-1}$$

where  $Q_\tau$  denotes the  $\tau$ -th conditional quantile of the SDG score. The quantile regression coefficients  $\beta(\tau)$  capture the marginal effect of trade policy openness at different points of the SDG performance distribution, allowing us to assess whether trade liberalisation benefits lagging countries (low quantiles) differently from high-performing ones (upper quantiles). This is particularly relevant for policy design, as uniform prescriptions may be inappropriate if the marginal returns to trade openness vary across performance levels.

To further explore heterogeneity, we estimate sub-sample regressions by World Bank income classification (Low, Lower-Middle, Upper-Middle, and High income), which provides an alternative lens on distributional effects grounded in economic structure rather than statistical quantiles.

**Empirical Results. Baseline OLS estimates.**

Table 2

**Pooled OLS Estimates: Trade Policy Openness and SDG Outcomes**

Variable	SDG 8		SDG 9		SDG 17	
	Coef.	p	Coef.	p	Coef.	p
Trade de jure (L)	0.0210	0.490	0.1056**	0.012	-0.0016	0.976
Trade de facto (L)	-0.0030	0.932	0.0276	0.519	-0.0328	0.489
Governance (WGI) (L)	6.0988***	<0.001	14.0741***	<0.001	1.5023	0.248
Ln GDP p.c. (L)	-0.7630	0.312	9.0501***	<0.001	1.5839*	0.090
Ln Population (L)	1.4754***	<0.001	3.8272***	<0.001	-0.4021	0.398
R <sup>2</sup>	0.388		0.816		0.098	
N	3406		3406		3406	

Notes: \*\*\*, \*\*, \* denote significance at 1%, 5%, 10% levels. Standard errors clustered at country level. (L) denotes one-year lag.

Source: Author's compilation based on SDR (2024), KOF (2025), WGI (2024), WDI (2024).

Table 2 presents the pooled OLS results with both *de jure* and *de facto* trade indices included simultaneously. The key finding at the conditional mean is that trade policy openness (*de jure*) has a statistically significant positive effect on SDG 9 (Industry, Innovation, and Infrastructure), with a coefficient of 0.106 ( $p = 0.012$ ), while *de facto* trade flows show no independent effect ( $p = 0.519$ ). Neither dimension achieves significance for SDG 8 or SDG 17 in the pooled specification. The  $R^2$  is notably high for SDG 9 (0.816), reflecting the strong structural relationship between trade policy frameworks and industrial capacity, but considerably lower for SDG 8 (0.388) and SDG 17 (0.098).

However, focusing exclusively on the conditional mean may mask important distributional heterogeneity. The quantile regression results below reveal that trade policy openness has significant effects across different parts of the SDG distribution that are obscured by the mean estimate.

**Quantile regression results.** Table 3 and Figure 1 present the central finding of this study. Trade policy openness (*de jure*) exerts a highly significant positive effect on SDG 9 across the entire conditional distribution, with coefficients ranging from 0.089 at Q90 to 0.115 at Q25 (all significant at the 1% level). Critically, *de facto* trade flows show no independent effect at any quantile when included alongside the *de jure* measure. This finding has a clear interpretation: it is the regulatory architecture of trade, encompassing customs tariff levels, non-tariff barriers, and the depth of trade agreements, rather than the volume of trade itself, that drives progress in industrial development, innovation, and infrastructure.

Table 3

**Quantile Regression: Trade Policy and SDG 9 (Industry, Innovation, Infrastructure)**

Variable	OLS	Q10	Q25	Q50	Q75	Q90
Trade de jure (L)	0.1056**	0.1012***	0.1145***	0.1029***	0.1096***	0.0892***
Trade de facto (L)	0.0276	0.0156	-0.0021	0.0091	0.0120	-0.0014
Governance (L)	14.0741***	11.8797***	14.2570***	14.4137***	14.1307***	12.0072***
Ln GDP p.c. (L)	9.0501***	5.9629***	7.5322***	9.5008***	9.9953***	11.6870***
Pseudo R <sup>2</sup> / R <sup>2</sup>	0.816	0.425	0.475	0.571	0.643	0.627

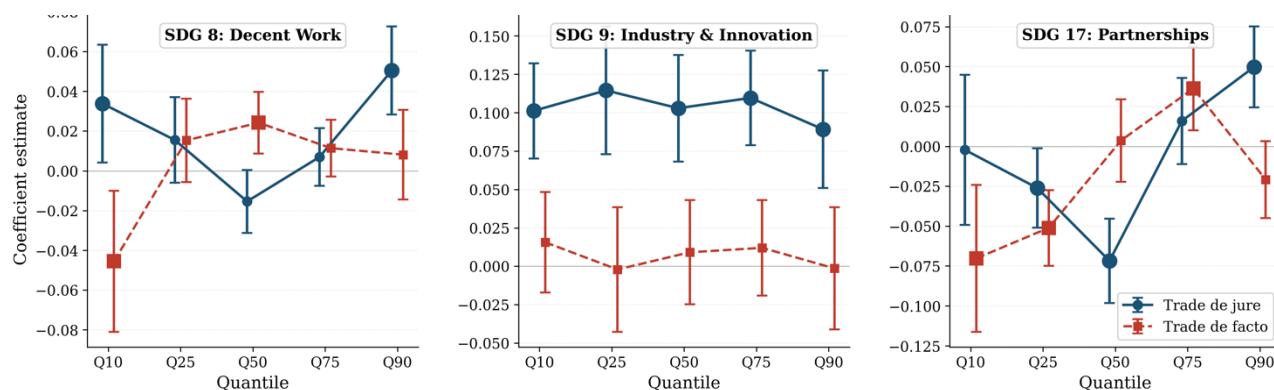
Notes: \*\*\*, \*\*, \* denote significance at 1%, 5%, 10% levels. All independent variables lagged one year.

Source: Author's compilation based on SDR (2024), KOF (2025), WGI (2024), WDI (2024).

The distributional patterns across the three SDGs are visualised in Figure 1, which plots the quantile regression coefficients for both trade de jure and trade de facto, along with 95% confidence intervals. The contrast across the three panels is striking. For SDG 9, the de jure coefficient remains consistently positive and highly significant across all quantiles, forming a near-horizontal band between 0.089 and 0.115, while the de facto coefficient hovers around zero with no statistical significance at any point of the distribution. This visual pattern reinforces the core finding: it is the regulatory architecture of trade, not the volume of trade flows, that drives industrial and innovative capacity. For SDG 8, the coefficient trace exhibits a distinctive U-shaped pattern, with positive and significant effects at the tails of the distribution (Q10 and Q90) but near-zero or marginally negative values at the median, suggesting that trade policy openness operates through qualitatively different mechanisms for lagging versus leading economies in terms of employment and growth outcomes. For SDG 17, the pattern is more complex and non-monotonic: the de jure coefficient is negative and significant at the lower-to-middle quantiles before turning positive at Q90, indicating that the relationship between trade policy openness and international partnerships is contingent on a country's existing level of cooperative engagement.

The relative uniformity of the *de jure* coefficient across quantiles suggests that the trade policy–SDG 9 relationship is robust across the performance distribution. Countries at the bottom of the SDG 9 distribution (Q10: 0.101) benefit almost as much from trade policy openness as those in the middle (Q50: 0.103) or near the top (Q75: 0.110). The slight decline at Q90 (0.089) may reflect diminishing marginal returns as countries approach the innovation frontier.

Table 4 reveals contrasting distributional patterns for SDG 8 and SDG 17. For SDG 8 (Decent Work and Economic Growth), trade policy openness shows a pronounced asymmetry: the coefficient is positive and significant at Q10 (0.034,  $p < 0.05$ ) and strongly significant at Q90 (0.050,  $p < 0.001$ ), but insignificant or marginally negative at the median. This U-shaped pattern suggests that trade policy openness benefits countries at both extremes of the employment and growth distribution, potentially through different mechanisms: at the lower end, trade liberalisation may open new market access and stimulate formal employment, while at the upper end it may enhance productivity through competitive pressure and technology transfer.



**Fig. 1. Quantile regression coefficients of trade de jure and trade de facto on SDG 8, SDG 9, and SDG 17**

Notes: Larger markers indicate statistical significance at the 5% level. Error bars represent 95% confidence intervals.

Source: Author's compilation

Table 4

**Quantile Regression: Trade Policy and SDG 8 (Decent Work) and SDG 17 (Partnerships)**

	Q10	Q25	Q50	Q75	Q90
SDG 8: Decent Work					
Trade de jure (L)	0.0338**	0.0155	-0.0154*	0.0069	0.0504***
Trade de facto (L)	-0.0455**	0.0153	0.0242***	0.0114	0.0081
SDG 17: Partnerships					
Trade de jure (L)	-0.0022	-0.0261**	-0.0718***	0.0159	0.0498***
Trade de facto (L)	-0.0702***	-0.0511***	0.0037	0.0363***	-0.0209*

Notes: \*\*\*, \*\*, \* denote significance at 1%, 5%, 10% levels. Controls (governance, GDP, population) included but not reported.

Source: Author's compilation

For SDG 17 (Partnerships for the Goals), the pattern is strikingly non-monotonic. Trade policy openness has a significantly negative effect at Q25 ( $-0.026$ ) and Q50 ( $-0.072$ ), but a significantly positive effect at Q90 ( $0.050$ ). This suggests that trade liberalisation may initially reduce partnership indicators (perhaps by displacing multilateral cooperation with bilateral arrangements), but at higher levels of partnership performance it reinforces international engagement. The *de facto* dimension shows an inverse pattern at the lower quantiles, indicating that actual trade flows and policy openness operate through distinct channels for partnership outcomes.

**Income group heterogeneity.** Table 5 reinforces the centrality of SDG 9 as the primary channel through which trade policy openness operates. The *de jure* trade coefficient for SDG 9 is largest in low-income countries ( $0.162$ ,  $p < 0.001$ ) and decreases monotonically across income groups:  $0.120$  for lower-middle,  $0.035$  for upper-middle (not statistically significant), and  $0.067$  for high-income countries. This gradient has a clear policy interpretation: reducing customs barriers and deepening trade agreements yields the highest marginal returns for industrial development in the poorest economies, where productive capacity has the most room for growth. For SDG 8, the effect is concentrated among lower-middle-income countries ( $0.038$ ,  $p < 0.05$ ), whereas SDG 17 shows no significant effects across any income subgroup, consistent with the complex distributional pattern observed in the quantile regressions.

Table 5

**Trade Policy Openness Effects by Income Group (OLS)**

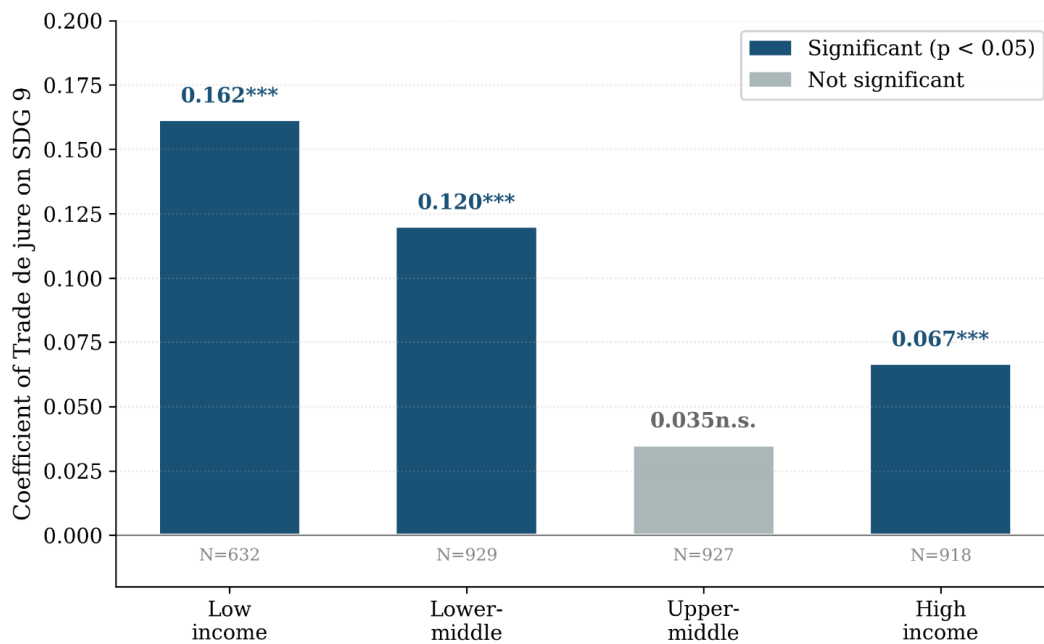
Income Group	SDG 8 de jure	p	SDG 9 de jure	p	SDG 17 de jure	p	N
Low	0.0332*	0.057	0.1615***	0.000	-0.0334	0.129	632
Lower-Middle	0.0375**	0.019	0.1200***	0.000	-0.0049	0.829	929
Upper-Middle	0.0206	0.198	0.0350	0.184	-0.0028	0.902	927
High	-0.0119	0.432	0.0667***	0.002	0.0249	0.238	918

Notes: Coefficients on  $L_{kof\_trade\_dejure}$  from OLS with controls. \*\*\*, \*\*, \* denote 1%, 5%, 10% significance.

Source: Author's compilation based on SDR (2024), KOF (2025), WGI (2024), WDI (2024).

Figure 2 provides a complementary perspective on this heterogeneity by disaggregating the trade *de jure* effect on SDG 9 across World Bank income classifications. The bar chart reveals a clear descending gradient: the marginal effect of trade policy openness on industrial and innovative capacity is largest in low-income economies ( $0.162$ ) and diminishes progressively through lower-middle ( $0.120$ ) and upper-middle income groups, before partially recovering in high-income countries ( $0.067$ ). Notably, the coefficient for upper-middle income countries fails to reach conventional significance levels, suggesting a potential «middle-income plateau» where the marginal returns to further trade liberalisation for industrial development temporarily diminish, possibly because these economies have already captured the most accessible gains from tariff reduction but have not yet developed the institutional depth to benefit from deeper regulatory integration.

**Conclusions.** This study provides the first systematic analysis of how trade policy openness, distinguished from actual trade flows, affects progress towards specific Sustainable Development Goals across the conditional distribution of country performance. Using panel quantile regression on 167 countries over 2001–2023, three principal findings emerge.



**Fig. 2. Effect of trade policy openness (KOF Trade de jure) on SDG 9 by World Bank income group.**

Note: Dark bars indicate significance at 5% level. \*\*\*, \*\* denote significance at 1% and 5% levels respectively; n.s. = not significant.

Source: Author's compilation based on SDR (2024), KOF (2025), WGI (2024), WDI (2024).

First, trade regulatory frameworks (the *de jure* dimension), rather than actual trade volumes (*de facto*), constitute the primary mechanism linking international trade engagement to SDG progress. When both dimensions are included simultaneously, *de facto* trade shows no independent effect on SDG 9, while the *de jure* component remains robustly significant. This finding carries direct implications for customs administrations: the design of trade regulatory environments, including tariff structures, non-tariff barriers, and trade agreement architecture, matters more for development outcomes than the resulting volume of trade.

Second, the relationship between trade policy openness and sustainable development is goal-specific and distributionally heterogeneous. SDG 9 (Industry, Innovation, and Infrastructure) emerges as the primary beneficiary of trade liberalisation, with a remarkably stable positive effect across the entire conditional distribution. SDG 8 (Decent Work and Economic Growth) shows an asymmetric pattern benefiting primarily top performers, while SDG 17 (Partnerships) exhibits a non-monotonic relationship that warrants further investigation.

Third, the marginal returns to trade policy openness are highest for low-income countries, where a one-point increase in the KOF Trade *de jure* index is associated with a 0.162-point increase in the SDG 9 score, compared to 0.067 in high-income countries. This suggests that customs modernisation and trade facilitation reforms, such as those envisaged by the WTO Trade Facilitation Agreement, can deliver the largest development dividends precisely where they are most needed.

The findings are subject to several limitations. The panel quantile regression does not fully control for unobserved country-specific heterogeneity, and the one-year lag structure may not capture longer-term adjustment dynamics. Future research could employ fixed-effects quantile regression (Machado and Santos Silva, 2019) or examine specific customs reform episodes using quasi-experimental designs. Additionally, disaggregating the trade *de jure* index into its tariff and non-tariff components could reveal which specific policy instruments are most effective.

Despite these caveats, the study provides robust evidence that trade policy architecture is a significant and underappreciated driver of progress in sustainable development, particularly for industrial capacity in lower-income economies. For customs administrations and trade policymakers, the message is clear: streamlining regulatory environments and deepening trade agreements can yield measurable, broad-based gains in SDG performance.

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## ВІДКРИТІСТЬ ТОРГОВЕЛЬНОЇ ПОЛІТИКИ ТА ДОСЯГНЕННЯ СТАЛОГО РОЗВИТКУ: КВАНТИЛЬНИЙ РЕГРЕСІЙНИЙ АНАЛІЗ

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**Метою статті** є емпіричне дослідження гетерогенності впливу відкритості торговельної політики на результати сталого розвитку країн. Досліджується, як однакові за напрямом торговельно-регуляторні зміни по-різному впливають на країни, що перебувають у нижніх, середніх і верхніх інтервалах розподілу відповідних показників досягнення Цілей сталого розвитку (ЦСР)

Попри усталену тезу про позитивний зв'язок між глобалізацією та розвитком, бракує системних оцінок того, у яких сегментах розподілу та для яких вимірів сталого розвитку відкритість торговельної політики забезпечує найбільшу маржинальну віддачу. Аналіз зосереджено на ЦСР 8 (Гідна праця та економічне зростання), ЦСР 9 (Промисловість, інновації та інфраструктура) та ЦСР 17 (Партнерство заради сталого розвитку), які найбільше пов'язані з міжнародною торгівлею та митним регулюванням.

**Методи.** Використано панельну квантильну регресію для вибірки 167 країн за 2001–2023 рр., що дозволяє оцінити ефекти на різних квантилях умовного розподілу (Q10–Q90) і виявити асиметрії, характерні для кроскраїнових даних. Відкритість торговельної політики операціоналізовано індексом KOF Trade Globalisation de jure, який відображає політико-регуляторний вимір: митні тарифи, торговельні податки, нетарифні бар'єри та торговельні угоди. Одночасне включення індексу KOF de facto дає змогу розмежувати вплив інституційно-нормативних правил торгівлі та фактичних торговельних потоків. Контрольні змінні: якість урядування (WGI), ВВП на душу населення та чисельність населення; усі незалежні змінні лаговано на один рік для зниження ризику одночасності та механічної ендогенності.

**Результати.** Виявлено три основні закономірності. Для ЦСР 9 відкритість торговельної політики має стійкий позитивний ефект на всіх квантилях, тоді як фактична торгівля не демонструє незалежного впливу, що підкреслює значення регуляторних параметрів (передбачуваність правил, зниження бар'єрів, ширше охоплення угод) для індустріально-інноваційної динаміки. Для ЦСР 8 ефект асиметричний і статистично значущий лише на верхньому квантилі (Q90), що свідчить про наявність порогових інституційних умов, за яких лібералізація торговельної політики перетворюється на результати у ЦСР8.

Для ЦСР 17 спостерігається немонотонний вплив: негативні ефекти на нижніх квантилях і позитивні на верхніх, що узгоджується з гіпотезою про неоднакову спроможність країн конвертувати торговельну відкритість у партнерства, координаційні механізми та інституційні форми міжнародної взаємодії.

**Висновки.** Визначальним механізмом зв'язку між міжнародною торговельною взаємодією та прогресом сталого розвитку є регуляторна торговельна політика, а не обсяги торгівлі. Спрощення та прозорість торговельного регулювання, зниження тарифних і нетарифних бар'єрів та поглиблення торговельних угод здатні забезпечити відчутний прогрес, особливо в країнах із низьким доходом, однак для досягнення соціальних і партнерських результатів необхідні комплементарні інституційні реформи.

**Ключові слова:** відкритість торговельної політики, міжнародна торгівля, цілі сталого розвитку, квантильна регресія, митне регулювання, індекс глобалізації KOF, лібералізація торгівлі, гетерогенність доходів.



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Дата першого надходження статті до видання: 23.02.2026  
Дата прийняття статті до друку після рецензування: 10.03.2026  
Дата публікації (оприлюднення) статті: 07.05.2026