



Quality Control Orders in India's Chemical Sector

Supply-Chain Pressures and Firm-Level Outcomes

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Outline

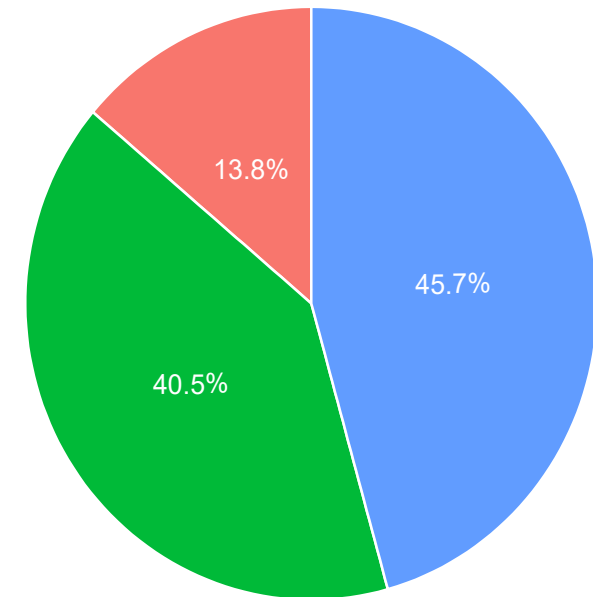
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QCOs : Broader Trends

- QCOs are quality regulations to ensure protection of human, animal, or plant health; environmental safety; prevention of unfair trade practices; and national security
- QCO coverage expanded rapidly, from 88 products in 2019 to 765 products by December 2024.
- Importantly, about 46% of QCO-covered products were intermediate goods.
- Findings from previous CSEP working paper
 - QCOs result in the disruption of imports in the long run by around 24 per cent, without leading to any significant export gains
 - The disruptive effect is more for intermediate goods, which see a decline by around 30 per cent in imports

Distribution of QCOs

Capital Consumer Intermediate



Recent Policy Change: focussed on intermediate goods/raw materials

- November 2025 onwards, GoI revoked/suspended several QCOs on intermediate goods
- In June 2026, Transition Facilitation (Quality Control) Order, was notified by DPIIT.

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THE GAZETTE OF INDIA : EXTRAORDINARY

[PART II—SEC. 3(ii)]

MINISTRY OF CHEMICALS AND FERTILIZERS

(Department of Chemicals and Petrochemicals)

ORDER

New Delhi, the 12th November, 2025

S.O. 5129(E).— In exercise of the powers conferred by section 16 of the Bureau of Indian Standards Act, 2016 (11 of 2016), the Central Government being of the opinion that it is necessary so to do in the public interest, after consulting the Bureau of Indian Standards, hereby rescinds the notification of the Government of India in the Ministry of Chemicals and Fertilizers number S.O. 5437 (E), dated the 24th December, 2021 published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (ii), dated the 28th December, 2021, relating to Terephthalic Acid with immediate effect, except as respects things done or omitted to be done before such rescission.

[F. No. PCT-59011/54/2022-PC TECH.-CPC]

DEEPAK MISHRA, Jt. Secy.

Ministry of Textiles

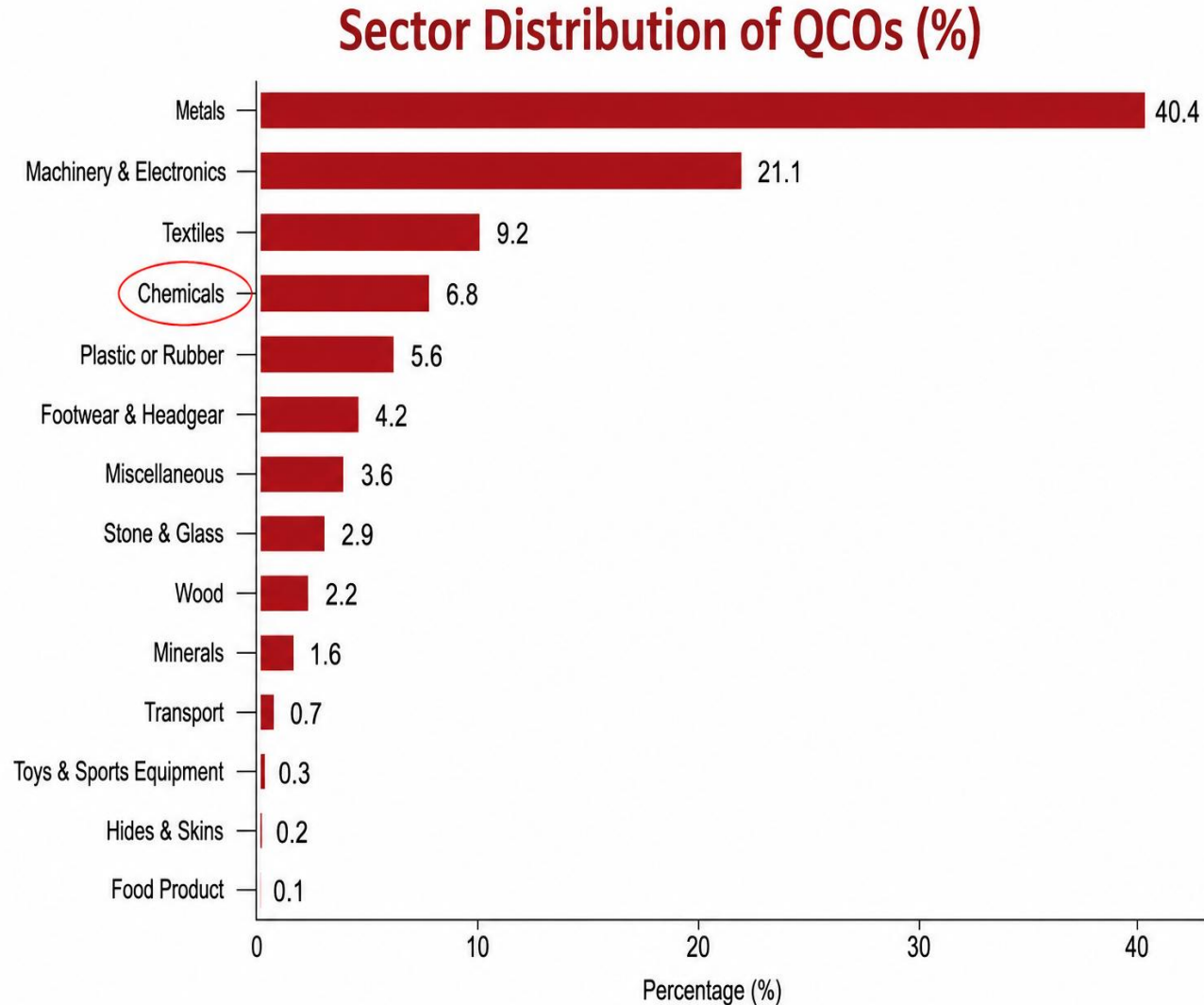


Central Government has rescinded the Quality Control Order (QCO) requirement for Viscose Staple Fibre (VSF) with immediate effect

प्रविष्टि तिथि: 18 NOV 2025 8:24PM by PIB Delhi

In a major step to address raw material accessibility and foster growth in the textile industry, the Central Government has rescinded the Quality Control Order (QCO) requirement for Viscose Staple Fibre (VSF) with immediate effect, following due consultation with the Bureau of Indian Standards (BIS) and key industry stakeholders. This decision directly responds to persistent industry concerns about supply constraints and higher costs, and demonstrates the government's commitment to improving ease of business for textile manufacturers, exporters, and MSMEs.

Why this study?



- Understand the implications for domestic performance of firms
- Assess the supply chain implications of QCOs. Focus on chemicals
- Examine the heterogeneous impact of QCOs on Industry sizes

Supply chain Implications for chemical using firms

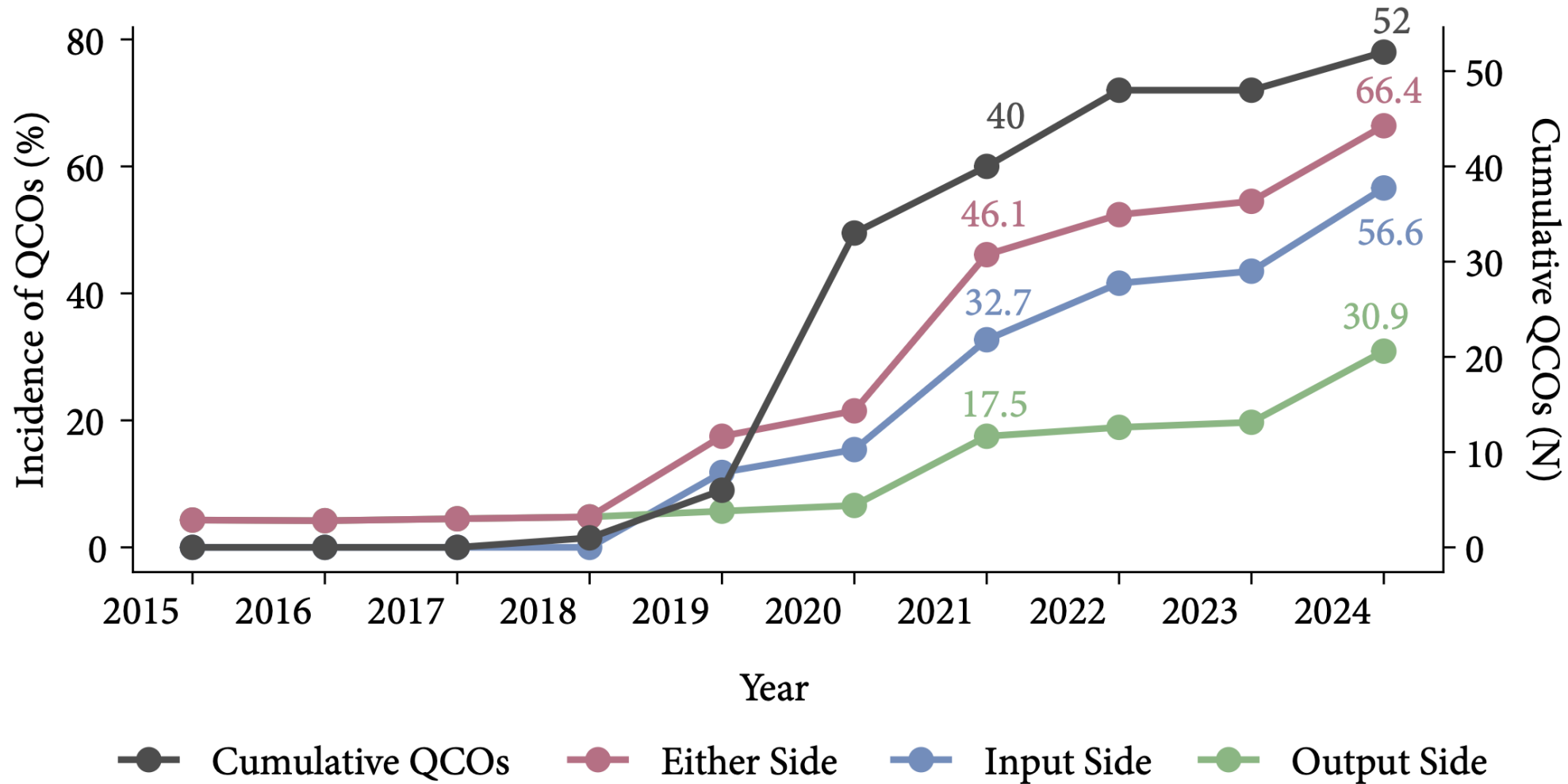
Table: Top Chemical User Industries

Rank	NIC code	Industry: Manufacture of -	In percent
1	20	Chemicals and chemical products	29.0
2	22	Rubber and plastic products	18.3
3	21	Pharmaceuticals, medicinal chemical and botanical products	12.6
4	27	Electrical equipment	6.7
5	23	Other non-metallic mineral products	3.9

Source: Authors' calculations based on data from the Annual Survey of Industries (MOSPI)

Note: NIC = National Industrial Classification (2008).

Supply chain Implications for chemical using firms



Source: ASI data, MOSPI

Empirical methodology

QCO Mapping:

- Database of 765 QCOs as of 2024.
- Mapped to 7-digit NPCMS manufacturing codes.
- NPCMS (MOSPI) links directly to UN Statistics Division (UNSD) CPC code.

Firm Selection:

- Sourced firm-level data from Annual Survey of Industries (ASI).
- Explicitly filtered Chemical-using firms.
- Continuous coverage over FY2015 to FY2024.

QCO Dummy:

- Firm's Input/Output NPCMS codes mapped to the QCO database.
- QCO Exposure Dummy = 1 if any input/output is QCO-covered in a specific year.

Empirical methodology

Firm level Balanced Panel:

- Sample size: 2,731 Chemical-using firms that have reported using chemical as their top input.
- Continuous coverage over FY2015 to FY2024.

Firm's Outcome Variable:

- Total Output (Proxy for Production)
- GVA (Proxy for Efficiency)
- Profit
- Total Input Cost
- No. of Workers (L)
- Fixed Capital (K)

Capturing Heterogeneity:

- Firms are classified as:
Small ($\leq$ Rs. 50 Cr.), or
large ($>$ Rs. 50 Cr.) firms,
Based on their total output,
based on Post 2020 MSME
Definition.

Regression Model

$$\text{IHS}(Y_{it}) = \beta_1 \text{QCO}_{\text{Input}_{it}} + \beta_2 \text{QCO}_{\text{Output}_{it}} + \beta_3 \text{FS}_{it} + \beta_4 (\text{QCO}_{\text{Input}_{it}} \times \text{FS}_{it}) + \beta_5 (\text{QCO}_{\text{Output}_{it}} \times \text{FS}_{it}) + \gamma_t + \delta_j + \varepsilon_i$$

- Y_{it} : Firm performance indicators (production, GVA, or profit);
- $\text{QCO}_{\text{Input}_{it}}$: Dummy equal to 1 if any inputs used by firm i are subject to a QCO in year t ;
- $\text{QCO}_{\text{Output}_{it}}$: Dummy equal to 1 if any outputs produced by firm i are subject to a QCO in year t ;
- FS_{it} : Firm size dummy equal to 1 for small firms and 0 for large firms;
- γ_t : Year fixed effects, capturing aggregate shocks common to all firms
(e.g., macroeconomic conditions, policy changes, commodity price cycles);
- δ_j : Industry fixed effects, controlling for time-invariant sectoral characteristics
(e.g., capital intensity, technology);
- ε_i : Error term, with standard errors clustered at the firm level.

Note: Inverse Hyperbolic Sine (IHS) transformation is widely used as an alternative to the log transformation, when the dependent variable contains zero or very small values. For large positive values, IHS closely approximates the natural log, so estimated coefficients can be interpreted similarly to log-linear models.

Regression Results

Dependent Variable	Firm Size	QCO on Input	QCO on Output	Combined QCO Effect
IHS (Production)	Large firms	9.61*** (1.42)	2.69 (1.77)	12.30*** (0.0221)
	Small firms	-4.54 (3.19)	-3.67 (3.77)	-8.20* (4.49)
IHS (GVA)	Large firms	-37.0** (14.9)	5.02 (22.2)	-32.02 (26.33)
	Small firms	-20.07 (15.36)	-44.00** (19.02)	-64.08*** (23.17)
IHS (Profit)	Large firms	-22.1 (14.2)	6.23 (20.6)	-15.92 (24.63)
	Small firms	-47.69*** (14.29)	-58.89*** (18.58)	-106.57*** (22.09)

Source: Authors' analysis.

Note: Entries are coefficients (in per cent). Robust standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

GVA = gross value added; QCO = quality control order; IHS = inverse hyperbolic sine.

Conclusion

- The number of QCO-affected chemical firms has increased substantially over time
- While input QCOs seem to increase the output for large firms, their value addition is adversely impacted
- The adverse impact on GVA and profitability is considerably larger for smaller firms, indicating significant heterogeneity in impacts across firm sizes
- QCOs risk aggravating existing firm concentration in the Indian manufacturing ecosystem.

Policy Recommendations

Policy Area	Policy Recommendation
1. Clear criteria for QCO implementation	Implement QCOs strictly for quality and safety objectives; clearly specify the rationale (human, animal, plant health, environment, child safety, unfair trade practices) in notifications
2. Limiting QCOs on intermediate goods	Avoid or minimise QCOs on intermediate goods, particularly in upstream sectors like metals, chemicals, and textiles
3. Assess domestic production capability	Evaluate domestic availability and capacity before imposing QCOs; ensure domestic production can meet demand
4. Compliance and testing capability	Strengthen testing, standards, and certification infrastructure, and provide targeted support to MSMEs

Way Forward

- Recent QCO revocations are a positive signal - Avoid frequent reversals, as they can increase adjustment costs and signal policy uncertainty to investors
- Systematically reassess existing QCOs and the ones in the pipeline (especially on critical inputs)
- Balance quality objectives with competitiveness and supply-chain efficiency



Thank you