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Environmental trade protection and UK business perceptions

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Key points

- Environmental trade regulations are powerful and contested tools with real impacts on international trade.
- The impact of environmental trade protection varies across sectors and trading partners for the UK - some industries may experience export growth as a result, for example through innovation incentives, while others may face contraction due to compliance constraints.
- Firm capabilities determine whether environmental regulation becomes a barrier or a catalyst for international trade.
- Business perceptions of regulatory burden often diverge from measurable trade outcomes - business surveys highlight complexity, uncertainty, and administrative burdens even where aggregate trade impacts could be neutral, demonstrating the importance of business sentiment, expectations, and transition costs.
- Regulatory alignment remains a key determinant of export performance in strategic sectors. Continued dynamic convergence with major partners' environmental regimes, particularly the EU, has mitigated trade disruption, whereas unmanaged divergence risks higher costs and reduced market access.
- Dual regulatory systems can increase uncertainty and fixed costs, especially in chemicals. The coexistence of UK REACH and EU REACH has duplicated compliance obligations and increased data-access challenges and long-term competitiveness concerns despite limited short-run trade effects.
- Effective environmental trade policy requires strong regulatory governance - clarity in design, predictable transitions, and integration of business perception data can reduce compliance friction while sustaining high environmental standards, innovation, and market participation.

Introduction

Governments increasingly use trade-related technical measures to help achieve environmental goals. These measures, known under the World Trade Organization's Agreement (WTO) on Technical Barriers to Trade (TBT),[1] can take many forms. TBT related measures may specify how products must be made, what documentation is required, which tests or certifications firms must pass, and what information they must provide to enter a foreign

[1] See Agreement on Technical Barriers to Trade Notification requirements - Notification Portal

market. Recent examples include the delayed EU's Deforestation Regulation[2] and the proposed US Forest Act[3], both of which require exporters to prove their products or processes meet new environmental standards.

On the one hand, there is evidence that environmental trade measures can support green growth by encouraging cleaner technologies and better environmental practices. The literature has also shown that compliance with regulations can boost trade simply through increased relative market access for those firms that can demonstrate they meet the requirements.

But the positive potential sits alongside real tensions. Complying with environmental measures, particularly when they are numerous or complex, can impose significant costs on firms. Although TBT related measures aim to protect the environment, they also create new layers of regulatory requirements. When countries introduce multiple measures under the same broad framework, firms must comply with all of them to trade. The result is 'regulatory stringency': a dense, overlapping set of rules that can be difficult or costly for businesses to navigate. These costs can affect export performance, competitiveness, and participation in global value chains. The challenge for policymakers is to balance environmental ambition with the practical realities of administrative burdens and organisational changes faced by businesses and industry because of multiple overlapping new regulations.

Despite the rapid expansion of environmental TBTs, we still know relatively little about their actual impact on trade. Even less is known about how businesses perceive these regulations. Yet business perceptions matter: they shape how firms respond to new rules, whether they invest in compliance, and how they plan to access international markets. In other areas of public policy such as labour laws, tax policy, and innovation, business perception surveys have been used to understand regulatory burden and uncertainty. In trade policy, they have helped identify barriers and map firms' expectations, particularly during moments of regulatory change.

This Briefing Paper begins by discussing environmental trade regulations. It then examines business perceptions of these regulations. Finally, it reflects on the implications specifically for the chemicals sector as strategic for the UK. These reflections, which encompass trade economics, environmental policy, and political economy, are drawn from the literature and from a study undertaken through the Centre for Inclusive Trade Policy Innovation Fund.[4]

This study asks a simple but important question: How do environmental regulations that affect trade align with business perceptions of regulatory stringency in the UK?

Environmental trade protection and business perceptions

Environmental trade protection

Environmental provisions in trade policy are increasingly used to reduce negative environmental impacts while shaping how firms compete internationally. A long-standing argument in the literature suggests that environmental regulations can stimulate innovation rather than simply impose costs. Researchers[5,] have argued that stricter environmental rules push firms to develop cleaner and more efficient technologies, often compensating for or even surpassing the costs of compliance. More recent evidence continues to support this

[2] Regulation on Deforestation-free products - Environment

[3] Text - S.3371 - 118th Congress (2023-2024): FOREST Act of 2023 | Congress.gov | Library of Congress

[4] See Environmental trade protection and business perceptions: What are the implications for UK trade? https://citp.ac.uk/innovation-fund

[5] Porter, M. E. (1991), 'America's Green Strategy', Scientific American (April). Reprinted as chapter 3 in Business and the Environment (Eds. R. Welford and R. Starkey), 1996, Earthscan Publications Ltd., London. And Porter, M. E., & Linde, C. V. D. (1995). Toward a new conception of the environment-competitiveness relationship. Journal of economic perspectives, 9(4), 97-118.

claim, showing that environmental measures can promote trade in environmental goods by driving technological upgrading.[6]

However, the benefits are uneven. Firms in Low- and Middle-Income Countries (LMICs) and smaller firms in high-income countries may lack the capabilities needed to meet stringent environmental requirements. Such firms may face higher adjustment costs, find it difficult to participate in environmental goods markets, or struggle to comply with new regulations,[7] creating a divide where more technologically advanced firms thrive under environmental standards, while less-capable firms risk being pushed out of certain markets.

A related stream of research focuses on regulatory heterogeneity or differences in regulatory requirements across countries. The findings are consistent: regulatory divergence tends to reduce trade flows.[8] When regulations vary, firms must identify complex foreign requirements, redesign their products, modify production processes, and undergo repeated conformity assessments. Each additional export market increases these costs.[9] Firms often need to produce multiple versions of the same product when exporting to markets with different regulatory systems, undermining economies of scale and discouraging cross-border trade. [10]

Conversely, regulatory convergence through cooperation, harmonisation, or mutual recognition has been shown to stimulate trade.[11] Aligning standards reduces duplication, facilitates compliance, and gives firms clear guidance on how to access foreign markets.

Researchers measure regulatory heterogeneity in several ways, including intensity, coverage, and structure.[12] One of the most widely used dimensions is *intensity*, which assumes that:

1. More regulatory measures increase the likelihood of achieving policy objectives (e.g., environmental protection)
2. Each additional measure raises compliance costs
3. For quality-related technical measures, more regulations constrain firms' endogenous quality choices, shaping which firms can participate in foreign markets.

Empirical work shows that intensity, measured by the number of technical regulations or the strictness of requirements, can significantly affect firm entry and competitiveness.[13] Stringent regulations may promote better environmental outcomes but also risk excluding low-productivity or low-quality firms that cannot meet the standards.

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[6] Brandi, Clara, Jacob Schwab, Axel Berger, and Jean-Frédéric Morin. 2020. "Do environmental provisions in trade agreements make exports for developing countries greener?" World Development, 129. https://www.sciencedirect.com/science/article/pii/S0305750X20300255

[7] De Melo, J., & Solleder, J. M. 2020. Barriers to trade in environmental goods: How important they are and what should developing countries expect from their removal. World Development, 130, 104910.

[8] Franssen, L., & Solleder, O. 2016. How do NTMs affect countries' participation in international value chains? Technical report (ITC Working Paper No. WP-05-2016). E, International Trade Centre, Geneva. Inui, T., Ikeuchi, K., Obashi, A., & Yang, Q. 2021. The impact of regulatory distance from global standards on a country's centrality in global value chains. International Economics, 166, 95-115.

[9] Blyde, J. S., & Ramírez, M. A. 2024. Exports, Technical Measures, and Regulatory Heterogeneity. Journal of Economic Integration, 39(4), 791-810.

[10] Lamy, P. 2015. The new world of trade: The Third Jan Tumlir Lecture. Technical report, Jan Tumlir Policy Essays.

[11] Acquah, R., Di Ubaldo, M., Gasiorek, M. 2024. Regulatory Intensity and the EU Single Market: Implications for the UK. UK Trade Policy Observatory Briefing Paper 80 – May 2024. Grossman, G. M., McCalman, P., and Staiger, R. W. 2021. The "new" economics of trade agreements: from trade liberalization to regulatory convergence? Econometrica, 89(1), 215-249. Santeramo, F. G., & Lamonaca, E. 2022. Standards and regulatory cooperation in regional trade agreements: What the effects on trade? Applied Economic Perspectives and Policy, 44(4), 1682-1701.

[12] Di Ubaldo, M., Gasiorek, M., Reilly, B., & Sandoval-Hernandez, A. (2025). UKTPO Working Paper. Trade and the intensity of product regulation. Garcés, I., & Vogt, A. 2025. Patterns of regulatory heterogeneity in international trade: Intensity, coverage, and structure. Review of International Economics, 33(1), pp. 125–165.

[13] Disdier, A.-C., Gaigné, C., & Herghelegiu, C. 2023. Do standards improve the quality of traded products? Canadian Journal of Economics, 56(4), 1238–1290.

Business perceptions

Business perceptions reveal firms' expectations, concerns, and motivations, which influence how they respond to regulations. Broadly, research on business perceptions focuses on how firms evaluate regulatory effectiveness, stringency, burdens, and uncertainty, and how these evaluations affect firm behaviour and competitiveness. For example, a survey[14] used data from 688 UK textile firms, for 2019-2020, to examine how trade policy uncertainty around Brexit affected business strategies. It found that firms' perceptions differed depending on their position in global value chains, indicating that regulatory alignment was a key concern.[15]

Another distinct OECD study analysed surveys across countries to identify how Small- and Medium-sized Enterprises (SMEs) view regulatory obstacles in trade. Similarly, the World Bank's "Doing Business" dataset and "Investment Climate Surveys"[16] have been used to assess how regulatory stringency affects firms' operations. A common finding is that perceptions often align with actual regulatory burdens, suggesting that firm surveys can offer meaningful insights into regulatory environments.[17]

At the same time, some scholars warn that business perceptions may be biased or driven by self-interest. For example, it has been shown that firms often advocate for policies such as fiscal incentives that may not necessarily promote growth.[18] Other researchers demonstrate that firm perception surveys frequently favour tax incentives regardless of their actual economic contribution, highlighting the need for caution when using perception data to shape policy.[19]

In the environmental regulation literature, reviews[20] show that firms often respond positively to well-designed environmental regulations. Although such regulations impose costs, they also generate substantial benefits by encouraging innovation in low-carbon technologies and discouraging carbon-intensive activities. Similarly, stricter environmental regulations have been shown to be associated with greater green trade among OECD countries.

However, the literature also documents negative effects when regulations interact with limited firm capabilities. Studies focusing on Southeast Asia[21] argue that environmental regulations introduced by the EU and North America can harm the competitiveness of firms lacking the technological and financial capacity to comply.

Other studies have linked business perceptions to broader environmental and economic outcomes. Using perception data from the World Economic Forum to create cross-country indicators of regulatory stringency, researchers found evidence supporting the "pollution haven effect": firms may relocate to countries with weaker environmental rules. [22]

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[14] Casadei, Patrizia and Simona Iammarino. 2021. "Trade policy shocks in the UK textile and apparel value chain: Firm perceptions of Brexit uncertainty". Journal of International Business Policy, 4(2): 262 – 285.
[15] Jones, L. B., & Burns, C. J. 2024. REACHing for divergence?—UK chemical regulation post-Brexit. Integrated Environmental Assessment and Management.
[16] Doing Business in - World Bank Group; https://www.worldbank.org/en/businessready
[17] Fliess, B. and Carlos B. 2006. "The Role of Trade Barriers in SME Internationalisation". OECD Trade Policy Papers No. 45. Pierre, G. and Scarpetta, S. 2006. "Employment Protection: Do firm's perceptions march with legislation?" Economics Letters, 90(3): 328 – 334.
[18] Peck, Frank, Gail Mulvey, Keith Jackson, and Jacqui Jackson. 2012. "Business Perceptions of Regulatory Burden". Centre for Regional Economic Development, University of Cumbria. And Kaplan, David S. and Vikram Pathania. 2010. "What Influences Firm's Perceptions?" Journal of Comparative Economics, 38(4): 419 – 431.
[19] Misch, Florian, Norman Gemmel, and Richard Kneller. 2014. "Using surveys of business perceptions as a guide to growth enhancing fiscal reforms". Economics of Transition, 22(4): 683 – 725.
[20] Dechezleprêtre, Antonie and Misato Sato. 2014. "The impacts of environmental regulations on competitiveness". Grantham Research Institute on Climate Change and the Environment Policy brief.
[21] Dahal, Kshitiz and Posh Raj Pandey. 2018. "Green Growth and Trade in Environmental Goods and Services: A South Asian Perspective". SAWTEE Working Paper 18/01.
[22] Kellenberg, Derek K. 2009. "An empirical investigation of the pollution haven effect with strategic environment and trade policy". Journal of International Economics, 78(2): 242 – 255.

A prominent industry-level example comes from the US International Trade Commission[23], which conducted hearings, surveys, and consultations across US SMEs in 2018 to identify EU-related trade barriers. Many of the identified obstacles involved environmental TBTs. SMEs across agriculture, manufacturing, chemicals, electronics, and technical services reported that EU environmental rules disproportionately burden small exporters. Larger firms can spread the cost of product approvals across higher export volumes, while SMEs cannot. Key challenges included: high costs of approvals and conformity assessments, lack of regulatory transparency, differences in measurement and testing procedures, and requirements to track all material inputs.

Chemical firms specifically cited the EU's REACH system (Registration, Evaluation, Authorisation, and Restriction of Chemicals) as a major barrier due to its complex testing and information requirements. Agricultural SMEs faced additional challenges related to non-tariff measures and rapidly evolving rules, including approvals for genetically modified traits.

In the UK, yearly surveys by the Better Regulation Executive[24] also show that businesses frequently report regulatory burdens arising from unclear communication, complexity, and high compliance costs. These surveys aim to improve regulatory design by capturing firms' insights into what works and where they face difficulties.

Against this backdrop, our study examines environmental regulations affecting UK trade and how these align with business perceptions of regulatory stringency. While we begin with broad perceptions of regulations linked to trade, our analysis focuses on the chemicals sector. Chemicals are strategically significant for the UK, particularly post-Brexit,[25] where changes in regulatory alignment have directly shaped how UK firms experience and respond to environmental TBTs.

The UK's strategic sectors

A comparison of environmental TBTs notified by the UK with major players, the EU, the US, and China, reveals important shifts in the UK's regulatory strategy since Brexit. Globally, most environmental regulations are concentrated in ten highly regulated sectors. The UK notifies measures in almost all of these, except mineral fuels, fertilisers, and iron and steel products. Within the sectors it does regulate, since Brexit, chemicals and machinery dominate, especially organic chemicals and mechanical machinery, where regulatory stringency tends to be highest worldwide.

Post-Brexit, these two sectors have become particularly strategic for the UK – from a regulatory perspective on international trade – but also one where Brexit has affected the trajectory of UK businesses and how they have responded to environmental TBTs. Around 40% of UK notifications now concern chemicals, while roughly one-third concern machinery. This mirrors broader international trends: the EU is increasing notifications in chemicals, while the US and China are doing so in machinery. The UK's pattern therefore appears to reflect both continuity with EU approaches and a strategic adjustment to major trading partners' regulatory directions.

A key reason for this continuity is that the UK initially replicated most EU laws to avoid regulatory disruption. For example, the EU's REACH Regulation, the world's most comprehensive chemicals framework, was incorporated into domestic law in 2021 as UK REACH. Although the two systems now operate separately, businesses trading with both markets must comply with each. The UK has since taken steps to modify REACH, including a 2024 proposal for an Alternative Transitional Registration Model (ATRM) to reduce compliance costs while maintaining environmental protections.

Similarly, other EU regulations were retained, such as rules on chemical classification (CLP), plant protection products, and restrictions on hazardous substances in electronic equipment (RoHS). The UK has continued to

[23] U.S. International Trade Commission. 2014. "Trade Barriers that U.S. Small and Medium-Sized Enterprises Perceive as Affecting Exports to the European Union". USITC Publication 4455.
[24] BEIS. 2019. "Business Regulation: Understanding business' perceptions and behavior". BEIS Research Paper Number 2019/024. BEIS. 2020. "Business Regulation: Business Perceptions Survey 2020". Department of Business, Energy and Industrial Strategy.
[25] The UK officially left the EU on 31 January 2020; the implementation period lasted until 31 December 2020; on 1 January 2021, the UK fully exited the EU single market and customs union. In this paper, we use Brexit to refer to 31 January 2020.

update these frameworks through WTO notifications, a sign of dynamic convergence, for instance, by revising authorisations for active substances like alpha-cypermethrin and mancozeb. In some sectors, such as plastics, the UK initially aligned with EU standards (e.g., restrictions on single-use plastics), but it has also begun developing its own domestic initiatives.

One notable example of independent policymaking is in the electric vehicle sector. The UK's Automated and Electric Vehicles Act enabled new regulations requiring all private EV charge points to include smart functionality measures notified to the WTO and not directly derived from EU law.

Overall, regulatory divergence is slowly emerging, especially in chemicals, where the ATRM signals a move toward a distinct UK approach. As differences grow, firms operating across both markets will face more dual-compliance challenges, and regulators will need to evaluate how new UK-specific standards affect trade and environmental outcomes.

Brexit has also influenced the type of regulations the UK adopts. Before leaving the EU, most UK notifications focused on enforcement measures. Afterwards, 73% shifted toward technical regulations, especially those setting limits on chemical residues or restricting hazardous substances (in chemicals), and those defining product quality, safety, or performance (in machinery). Interestingly, we observe similar patterns in notifications post-Brexit for the EU and the UK, which is evidence of dynamic alignment

Finally, UK notifications on chemicals have doubled since Brexit, rising from seven (first in 2017) to fifteen (latest in 2023). Following Brexit, the UK largely replicated EU legislative frameworks, ensuring continuity in regulatory standards across various sectors. In chemicals, the EU REACH Regulation was transposed into UK law on 1 January 2021, becoming UK REACH.[26] Both UK REACH and EU REACH now function independently, requiring businesses to comply with both regulations where necessary. Overall, in chemicals, while the UK has largely retained and adapted EU regulatory frameworks, it has also introduced domestic policies in areas such as plastic pollution reduction and electric vehicle infrastructure. Trade data reinforces the strategic focus: for both organic chemicals and mechanical machinery, the EU and the US are simultaneously the UK's biggest trading partners and the top sources of new environmental TBTs, with China also playing a major role in machinery.

Trade effects of TBTs for the UK: 2010-2020

Next, our research analyses how environmental TBTs introduced by the UK's trading partners affect UK exports over an earlier period, before Brexit, from 2010-2020. To do so, we estimate their trade effects using a standard gravity-type equation, exploiting a panel dataset covering multiple partner countries at the HS 2-digit sectoral level. We focus on two complementary measures to capture regulatory pressure in destination markets.

First, we use a simple indicator showing whether an importing country has notified an environmental TBT for the specific products the UK exports. This compares UK export volumes to countries that have adopted environmental TBTs with those that have not. Second, we use a count of all environmental TBT notifications adopted by each trading partner, which allows us to measure the effect of additional regulations on export volumes.

At the aggregate level, the results show little evidence that environmental TBTs systematically increase or reduce UK exports. The variable indicating when a TBT has been notified is not statistically significant, meaning that on average UK exports are not consistently higher or lower to countries that have introduced new regulations on environmentally sensitive products. Likewise, the number of notifications does not appear to meaningfully affect total UK export volumes. These results remain robust across alternative specifications addressing concerns such as endogeneity or reverse causality.

[26] Governing many chemical substances manufactured in or imported into Great Britain (GB – England, Scotland, Wales), while under the Northern Ireland Protocol, EU REACH remains in force in Northern Ireland. Although UK REACH mirrors its EU counterpart, modifications were made to ensure its operability within a domestic regulatory framework.

However, this broad stability masks substantial differences across sectors. Looking at specific industries, clear patterns emerge. UK exports of products such as fats, organic chemicals, soap, pearls, and base metals tend to be *higher* when trading partners impose environmental TBTs. These sectors tend to be standards-intensive, likely dominated by firms with strong regulatory, testing, and certification capacity. Exports may increase in these sectors because UK firms are relatively more competitive (in comparison to other producers) once standards tighten.[27]

In contrast, exports of cereals, oil seeds, tobacco, ores and ash, wood, headgear, and arms are *lower* in markets with such regulations. Such sectors usually operate on low margins, facing more process-based environmental standards (pesticide limits, deforestation rules). [28] The lower UK exports in this case could signal the fact that it is not a low-cost bulk producer in these sectors and may signal that the cost implications of the new regulations are relatively higher for UK firms.

The effects of additional notifications also vary sharply by sector.[29] In some industries, new environmental TBTs have a strong pro-trade effect. For example, in sectors such as tobacco or explosives, an extra notification can increase UK exports by as much as 120 percent, effectively doubling trade flows. In other industries, new measures reduce exports significantly: sugar and metals, for instance, see declines of around 60 percent when additional regulations are adopted. For many sectors, such as fish, dairy, plastics, and rubber, extra notifications have no detectable impact.

Based on these patterns, we classify the sector-specific effects of additional environmental notifications into three broad types:

1. **Expansionary effects**, where new regulations coincide with increased exports (e.g., tobacco).
2. **Contractionary effects**, where additional measures reduce exports (e.g., sugar).
3. **Null effects**, where regulations make little difference to trade volumes (e.g., fish and rubber).

Chemicals

Environmental regulations in chemicals vary widely across major trading partners. Among the UK's key destinations — the EU, the US and China — each partner applies different types of regulatory measures.

In the US, more than half of environmental TBTs in chemicals take the form of enforcement measures that are authorisation or licensing requirements established to enforce technical regulations or conformity-assessment procedures.[30] By contrast, the EU and China rely far more on technical regulations, accounting for 75 percent and 85 percent of their measures, respectively. Even within this, priorities differ: the EU mainly sets strict limits on residues and restricts hazardous substances, while China places greater emphasis on labelling, packaging, and product quality requirements.

To understand how these regulations shape UK trade, we extend our earlier econometric model to look specifically at organic chemicals, from 2010-2020. The results show a strong and consistent expansionary effect: UK exports of organic chemicals increase by around 65 percent when trading with countries that adopt new environmental regulations. This result holds even when we control for the overall stock of TBT notifications and

[27] Fontagné, L., Orefice, G., Piermartini, R., & Rocha, N. (2015). Product standards and margins of trade: Firm-level evidence. Journal of international economics, 97(1), 29-44.
[28] Otsuki, T., Wilson, J. S., & Sewadeh, M. (2001). Saving two in a billion: quantifying the trade effect of European food safety standards on African exports. *Food policy*, *26*(5), 495-514.
[29] Important to note here that these are the effect of new notifications, holding other dynamics constant – so, net of what other countries do. Future research could test for trade diversion and effects on market share.
[30] Examples for the US include the prohibition (i.e., zero-tolerance limit) of trichloroethylene (G/TBT/N/USA/1270 and G/TBT/N/USA/2062), methylene chloride and N-methylpyrrolidone (G/TBT/N/USA/1271), mercury in certain items (G/TBT/N/USA/430 and G/TBT/N/USA/632).

differences across top regulators (the EU, US and China). The pro-trade effect suggests a potential type of dynamic convergence when a country's rules closely resemble those of its major export partners.

When we test whether increases in environmental notifications by the EU, US or China alter UK export volumes, we find no significant country-specific effects for organic chemicals from 2010-2020. This suggests that UK exporters were already equipped to meet a range of regulatory requirements then, consistent with broader evidence that environmental trade measures tend to favour firms in high-income countries that already possess strong green production capabilities.

Historically, the UK's regulatory alignment with the EU supported chemical exports, as the EU has long been the UK's most important market.

Until 2020, UK chemical firms operated under EU REACH, the EU's wide-ranging chemicals regulation. A 2019 survey of UK chemical companies[31] showed that most firms did not own the testing data required for their EU REACH registrations. As the UK prepared to introduce its own system, UK REACH, companies anticipated steep increases in compliance costs and reduced competitiveness. Industry associations warned that regulatory costs could reach £500 million if the UK failed to secure a free trade agreement, roughly equal to what the sector had already spent over the previous decade complying with EU REACH.

Overall, the shift in business sentiment reflected the rising regulatory complexity faced by UK manufacturers, especially in the post-Brexit environment. While actual trade effects of environmental TBTs may vary widely by sector, businesses' aggregate perceptions are shaped less by measurable trade impacts and more by limited clarity, guidance, and support in navigating new regulatory demands.

Data from the 2022 UK Business Perceptions Surveys[32] show that business attitudes mirror their experience in trying to meet the regulatory requirements, and exporting businesses show markedly worse sentiment about trade regulation than the average firm. Over 2022-2024, "*perceptions about the government's approach to regulation were less positive*" compared to 2020. The evidence in relation to Brexit specifically shows a substantial and worsening burden, and by 2022, 28% of businesses found EU exit regulatory changes challenging to comply with. By 2024, 41% found the post-exit regulatory arrangements more challenging than what preceded them. These patterns were most concentrated in the most trade-exposed sectors – in Manufacturing, Retail and Distribution and Transport and Storage. 75% of businesses reported environmental rules were a relevant regulatory area. Environmental rules are therefore a strong predictor of seeing regulations as an obstacle to business success.

A major concern for industry was the lack of clarity on how to navigate the regulatory transition and how to secure access to testing data owned by EU actors. By 2024, business confidence remained low, with commentary that the UK had not succeeded in creating a cost-effective alternative to the EU regime and that roughly 40 percent of UK chemical output had been directly affected by Brexit-related changes. Despite these challenges, chemical exports initially appeared resilient after Brexit, largely because UK regulations stayed closely aligned with EU rules during the implementation period. [33]However, divergence remains a long-term risk, as UK REACH is no longer obliged to follow future EU regulatory updates. Any widening gap could threaten market access for UK chemical products.

Conclusion

Environmental regulations are now a central feature of the global trading system, reshaping how firms compete, innovate, and access international markets. This Briefing Paper has examined the growing use of environmental TBTs, explored business perceptions of regulatory stringency, and evaluated how these dynamics affect UK

[31] CBA UK REACH SURVEY - Chemical Business Association

[32] https://www.gov.uk/government/collections/businesses-perception-of-regulation-in-the-uk

[33] See Jones, L. B., & Burns, C. J. 2024. REACHing for divergence? UK chemical regulation post-Brexit. Integrated Environmental Assessment and Management.

trade, particularly in the chemicals sector. Taken together, the findings point to a complex but increasingly important interaction between environmental ambition, regulatory design, and firm capabilities.

A key insight is that environmental TBTs do not operate uniformly across sectors or trading partners. While the literature frequently highlights the innovation-enhancing potential of environmental regulations, it also documents their uneven costs. Our empirical results reinforce this duality: at an aggregate level, environmental TBTs neither systematically boost nor restrict UK exports. Yet sector-level patterns tell a different story. In several industries, new regulations coincide with higher export volumes, suggesting that environmental requirements can create opportunities for technologically advanced producers. Conversely, other sectors experience contractionary effects, where additional measures reduce trade, indicating that compliance burdens can outweigh benefits when firms lack the capabilities to adapt.

These different effects closely mirror what UK businesses report in perception surveys. Firms increasingly express concern about regulatory complexity, unclear communication, and the administrative burden of compliance. Importantly, these perceptions may not always align with measurable trade outcomes. Instead, they seem to reflect uncertainty, transition costs, and limited guidance - factors that shape firm expectations even when export performance remains stable. The divergence between perceptions and observed effects highlights why understanding business sentiment is essential for designing effective environmental trade policy. Perceptions influence investment decisions, shape attitudes towards innovation, and determine whether firms choose to enter or retreat from foreign markets.

The UK's experience since Brexit further underscores the significance of regulatory alignment. In strategic sectors such as chemicals and machinery, UK regulatory practice continues to reflect EU norms, even as divergence gradually emerges. The chemicals sector illustrates this tension most clearly. The adoption of UK REACH, parallel to the EU's REACH system, has created a dual-compliance landscape that raises costs and generates persistent uncertainty. Although initial trade impacts were muted, partly due to retained alignment and convergence, industry concerns about data access, future divergence, and long-term competitiveness remain substantial. At the same time, econometric evidence suggests that UK chemical exporters continue to benefit from environmental regulations abroad, especially where those regulations resemble long-standing EU standards to which UK firms are already adapted. This indicates that a dynamic convergence, rather than deregulation, has been critical to sustaining export performance.

Looking forward, the challenge for policymakers is to balance the need for ambitious environmental protections with the realities of regulatory capacity and business adaptation. Three implications follow from this analysis.

- First, environmental regulations design requires greater attention to clarity, transparency, and transition support - much of the burden firms report stems not from the regulations themselves but from uncertainty about how to comply.
- Second, the UK will need to manage regulatory divergence strategically; while, selective differentiation may offer flexibility, excessive divergence, especially in chemicals, risks undermining market access and imposing significant costs on firms.
- Third, incorporating business perception data into regulatory assessments can help identify where administrative reforms, guidance, or international cooperation are most needed, without compromising environmental objectives.

Ultimately, environmental TBTs are here to stay, and their role in shaping global trade will only expand as countries pursue climate and sustainability goals. The UK's experience demonstrates that the trade effects of such measures depend not only on their stringency but also on firms' capabilities, the degree of regulatory alignment, and the quality of regulatory governance. By recognising these dynamics, policymakers can design environmental trade regulations that protect the environment while supporting competitiveness, innovation, and inclusive participation in global markets.

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