hinrich foundation
advancing sustainable global trade

IMD / World Competitiveness Center

Sustainable Trade Index 2025

Navigating sustainable trade:
From benchmarking to trade-offs

Foreword

At the Hinrich Foundation, we believe that global trade needs to be grounded in mutual benefit and sustainability to deliver shared prosperity and progress. Amidst rising levels of global trade uncertainty and protectionism, the Hinrich-IMD Sustainable Trade Index (STI) reminds us how essential trade is to the advancement of all economies.

The STI weaves together the economic, societal, and environmental factors that underpin sustainable trade, assisting decision-makers in setting priorities for inclusive, long-term growth.

This year's report centers on the strategic trade-offs in sustainable trade. Developing economies often face direct tension between economic priorities and environmental objectives. But progress in sustainable trade is not straightforward for advanced economies either, as they face increasing economic headwinds and domestic pressures pushing back against liberalization.

As consensus around multilateralism wavers and tariff and non-tariff trade barriers continue to rise, the STI spotlights how 30 economies at different levels of sustainable trade development are finding their unique way forward.

While there is no single model to achieve sustainable trade, economies must look beyond short-term economic gains to balance their competing priorities. This will require strategies to enable societies to bridge disparities in income and proactively manage environmental outcomes while pursuing new economic growth opportunities.

We are delighted to present the 2025 Hinrich-IMD Sustainable Trade Index (STI). Mirroring the profound transformation of the global trading system, this year's analysis reveals economies are operating in fundamentally different ways than just a few years ago. The path ahead is increasingly defined not by shared best practices, but by strategic choices that reflect each economy's unique circumstances and priorities.

At the IMD World Competitiveness Center (WCC), we focus on understanding how economies build and sustain long term competitiveness. In this, we echo our partners at the Hinrich Foundation in seeing trade as a vehicle for shared prosperity. The STI reflects this mission by examining not only performance but also the structural strengths, institutional qualities, and strategic choices that determine how economies respond to an increasingly fragmented trade environment.

This year's findings highlight three critical tensions reshaping global trade today: the balance between efficiency and strategic autonomy, the trade-off between short-term profitability and long-term social cohesion, and the challenge of reconciling climate ambition with development sovereignty. These new practical realities will increasingly define how policymakers and business leaders position themselves in a fragmented world.

What emerges from our analysis is not a hierarchy of performance, but rather a recognition that different contexts demand different strategies. The economies making meaningful progress are those that honestly assess their capabilities and constraints; to pursue approaches aligned with their circumstances rather than following universal prescriptions.

The STI 2025 therefore serves as more than a measurement tool; it functions as a strategic compass for navigating uncertainty. At a time when policy volatility outpaces traditional analysis, understanding structural readiness and strategic positioning becomes essential for sustainable trade practices.

We hope this report provides valuable insights for policymakers, business leaders, and researchers working to build more resilient and inclusive trading relationships in our rapidly evolving global economy.

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Executive summary

The Hinrich-IMD Sustainable Trade Index (STI) assesses how 30 economies manage the complex interplay between economic growth, social inclusion, and environmental stewardship in the global trade system. But 2025 marks a turning point where economies no longer align behind shared best practices like liberalization, openness, or multilateralism. Instead, they operate in a fragmented world shaped by strategic divergence, rather than consensus.

This year, therefore, the STI moves beyond performance benchmarking. It reframes the index as a strategic compass, a tool to help understand how economies navigate the three foundational trade-offs that shape global trade today:

- **Efficiency** vs. **strategic autonomy**
- **Profitability** vs. **social cohesion**
- **Climate ambition** vs. **development sovereignty**

These are not theoretical dilemmas. They are real, visible, and growing. And while they cannot be resolved through the production of rankings alone, the STI offers insights that support more informed, context-based policy choices by offering a new lens into how countries position themselves to respond to these tensions depending on their structural, institutional, and developmental stage.

The data tells us that sustainable trade is not a destination but a process of adaptation. Economies differ not only in performance but also in strategic orientation. We identify four strategies, broadly speaking:

- **Advanced economies** often act as institutional leaders with the capacity to set and maintain standards.
- **Dynamic, emerging markets** pursue selective modernization, leveraging trade for transformation.
- **Resource-dependent economies** remain structurally restricted, facing sharper trade-offs.
- **Crisis-affected economies** prioritize stabilization as a prerequisite for resilience.

Strategic trade-offs in focus

The fragmented and unpredictable global environment is reshaping how economies approach trade. Past strategies are no longer reliable guides. In this context, the STI moves beyond marking outcomes to examining how countries confront the real-world tensions embedded in three structural trade-offs:

1. **From resilience to realignment**

   Trade is no longer a binary choice between open and closed economies. It is a strategic calculus. As trade becomes more entangled with industrial policy, security, and geopolitical alignment, national strategies reflect different levels of autonomy, openness, and institutional depth. The STI does not rank these approaches. It illuminates them, offering insights into how economies pursue resilience and reassert control in a volatile world.

2. **Restoring trust in trade**

   Trade legitimacy is not automatic. It must be earned, maintained, and continually renewed. When economic gains are concentrated and social protection is weak, public trust is eroded. This creates fertile ground for protectionism and political backlash. The STI reveals which economies embed social standards into trade, and which defer inclusion in favor of speed or cost. In the long run, no trade strategy is sustainable unless it delivers visibly shared outcomes, not only for firms and investors, but for workers, communities, and future generations.

3. **Green trade, diverging paths**

   Environmental ambition is no longer a shared global aspiration. Some economies embed environmental standards into trade policy. Others resist citing development priorities and sovereignty. In between, hybrid models are emerging. This divergence fragments green trade norms and introduces new uncertainty for businesses. The STI provides clarity by mapping the underlying strategic tensions that shape each economy's environmental trade approach.

A compass for strategic readiness

Across all three trade-offs, what matters is not just performance but preparedness. How ready and able is an economy to make hard choices, remain resilient, and build legitimacy in a divided and fast-moving trade system? That is the new lens the STI offers and the compass it aims to be.

1.0 Introduction

The speed and volatility of these changes increasingly outpace traditional statistical tools, introducing significant noise into trade analysis and policymaking.

Uncertainty becomes the norm

When we launched the first edition of the Hinrich-IMD Sustainable Trade Index (STI) in 2022, the global economy was still navigating the twin shocks of the COVID-19 pandemic: a health crisis and economic disruption. These challenges were soon pushed aside by geopolitical tensions and a shift toward inward-looking policies as governments sought to reduce dependencies through greater self-sufficiency. At the time, many viewed these shocks as temporary. Economies were recovering at different paces, but optimism remained, partly augmented by technological breakthroughs including the rise of artificial intelligence, that they would converge.

By mid-2025, however, the world stopped asking when stability would return. Instead, it began preparing for a period in which unpredictability is the norm.

Several developments mark this shift. Following President Trump's return to office, the United States dramatically increased tariffs to reindustrialize its economy. Other economies responded by doubling down on domestic industrial policies already underway. China revived its Made in China strategy, now aligned with "dual circulation" and "high-quality development." Meanwhile, India pursued a strategic balancing act, seeking autonomy and recalibrating its relationship with China.

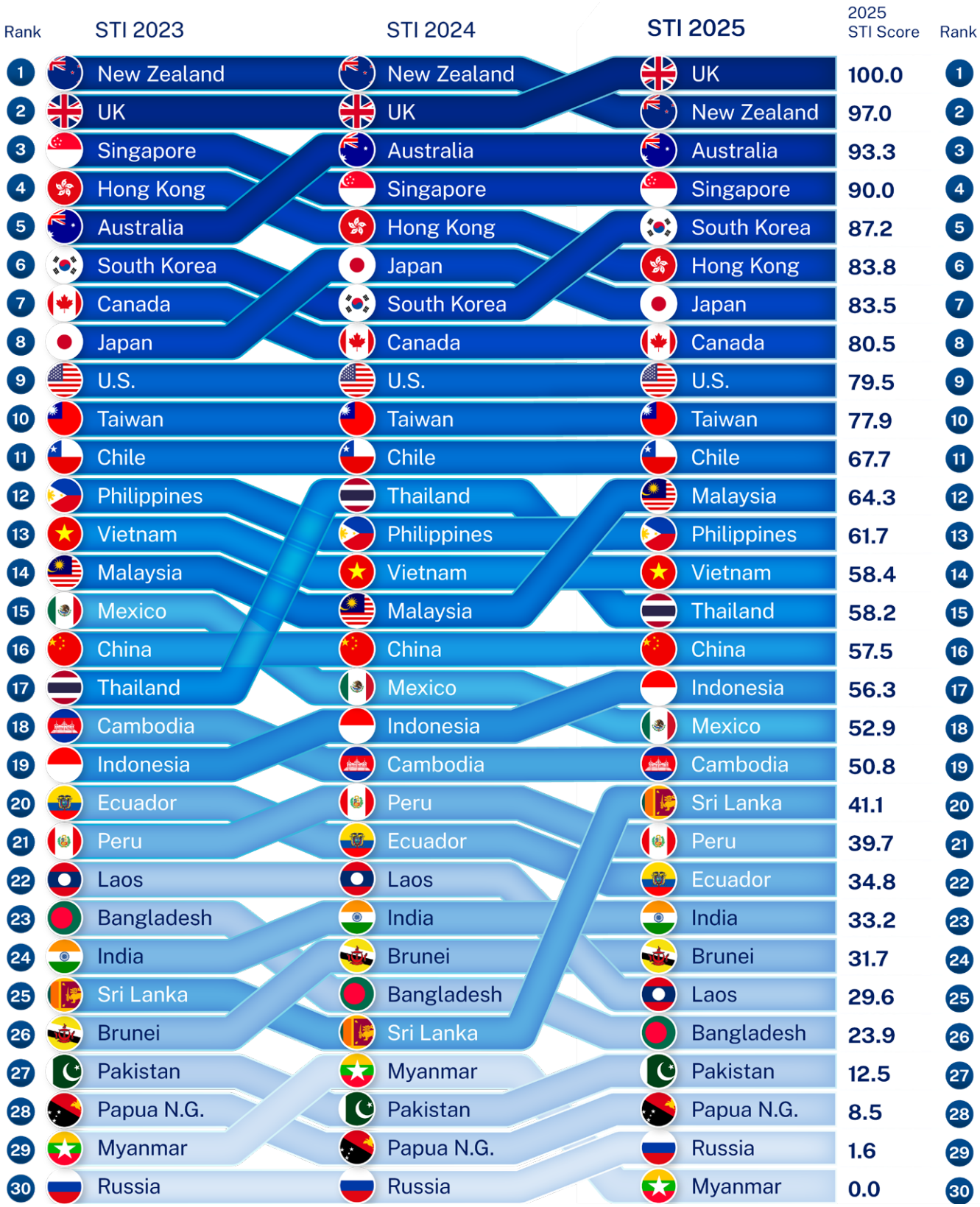
This shift to a landscape of permanent uncertainty has two significant implications. First, the longstanding consensus favoring liberalization and multilateralism is fraying. Second, we see a shift from a rules-based system to a landscape defined by fluid, often unilateral policy interventions. The speed and volatility of these changes increasingly outpace traditional statistical tools, introducing significant noise into trade analysis and policymaking.

In this context, the STI provides more than a snapshot of performance. It serves as a lens to understand structural readiness and highlight underlying capabilities, institutional strengths, and strategic orientations that shape how economies respond to this new environment.

For 2025, the report pivots from comparing performance to understanding strategic positioning. This year's report does not simply track trends. It identifies three foundational trade-offs that reflect the diverging paths economies are taking. But before we explore these trade-offs, we offer a brief overview of the STI 2025 results. The data confirms that institutional resilience, policy consistency, and social and environmental commitment remain essential to sustainable trade readiness. These findings prompt a deeper reflection: What does sustainable trade mean in a world where the framework keeps shifting?

Figure 1

Changes in STI overall rankings, 2023–2025



2.0
STI 2025 in context: Performance and pathways

Figure 2

Economic pillar indicator list

	Indicator
1.01	Consumer price inflation
1.02	Real GDP Growth per capita, % GDP
1.03	Growth in labor force, %
1.04	Foreign direct investment, net inflows, % GDP
1.05	Gross fixed capital formation, % GDP
1.06	Tariff & non-tariff barriers
1.07	Trade liberalization
1.08	Exchange rate stability, parity change from national currency to SDR, 2024/2022
1.09	Domestic credit to private sector, % of GDP
1.10	Foreign trade and payments risk
1.11	Trade costs
1.12	Monetary policy intervention
1.13	Export concentration
1.14	Exports of goods and services
1.15	Technological innovation
1.16	Technological infrastructure

The 2025 Sustainable Trade Index reveals a global economy in transition, where mounting pressures across economic, societal, and environmental dimensions are reshaping traditional pathways to prosperity through trade. As economies worldwide grapple with fragmented markets, shifting geopolitical alignments, and urgent sustainability imperatives, their responses increasingly reflect not universal best practices, but contextual adaptations shaped by their unique development stages, institutional capacities, and strategic priorities. The interplay between economic capacity, societal foundations, and environmental stewardship sheds light on the distinct approaches to sustainable trade that different economies can take to navigate the fundamental trade tensions of our time.

2.1 Economic pillar

STI's economic pillar assesses an economy's capacity to foster and sustain growth through participation in international trade. It captures the quality of trade infrastructure, the ease of cross-border transactions, export diversification, and the strength of technological and innovation systems. These elements underpin the ability of economies to produce sophisticated and sustainable goods and services, which are critical drivers of long-term prosperity in a globalized trading system.

A comparison of the 30 economies in the economic pillar between 2024 and 2025 reveals both continuity and change. At the top, strong performers, such as Hong Kong, Singapore, and South Korea, retained their leading positions, reflecting the consistency one expects from trade-oriented, highly developed economies. Further down the rankings, however, shifts are more visible, with several countries improving their standing because of policy reforms and evolving economic conditions, highlighting the dynamic nature of competitiveness in a fragmented global economy.

The pillar reveals three distinct strategic pathways that reflect different stages of development and the market positioning of various actors. Advanced economies tend to pursue **consolidation strategies**, using their existing institutional strengths to weather global uncertainties while maintaining competitive advantages. Australia exemplifies this approach, having advanced its strong tenth position in 2024 by three additional spots through strengthened openness, institutional depth, and market stability. Its strengths in this year's index come from building on the solid economic foundations of a mature economy rather than pursuing dramatic structural shifts.

Emerging economies, on the other hand, embrace **transformation strategies**, using trade as a vehicle for industrial upgrading and economic sophistication. Malaysia's climb in the rankings reflects this dynamic, pushing into higher-value trade through rapid growth in high-technology exports while attracting steady foreign investment inflows. This approach requires balancing the risks of economic transition with the imperative

to remain competitive in global markets, demanding both technological leapfrogging and institutional evolution.

Lastly, crisis-affected economies seem to pursue **stabilization strategies**, focusing on restoring basic economic fundamentals before advancing toward more ambitious goals. Sri Lanka's dramatic rebound illustrates this pathway, with sharp reductions in inflation and restored investor confidence creating the foundation for renewed trade capacity. This approach acknowledges that sustainable trade requires economic stability as a prerequisite, even if it means temporarily sacrificing competitiveness for predictability.

Yet the economic pillar also reveals the fragility of competitive advantages in an unstable global environment. Japan's decline to 13th this year from 11th last year despite gains in tariff reduction and exchange rate stability demonstrates how broader macroeconomic challenges can undermine even sophisticated economies when global pressures intensify. India's slight decline, despite maintaining robust growth indicators, illustrates how capital flow pressures and trade regulation tensions can constrain even dynamic economies, suggesting that raw economic potential must be matched by institutional capacity and strategic coherence.

Figure 3

Economic pillar rankings

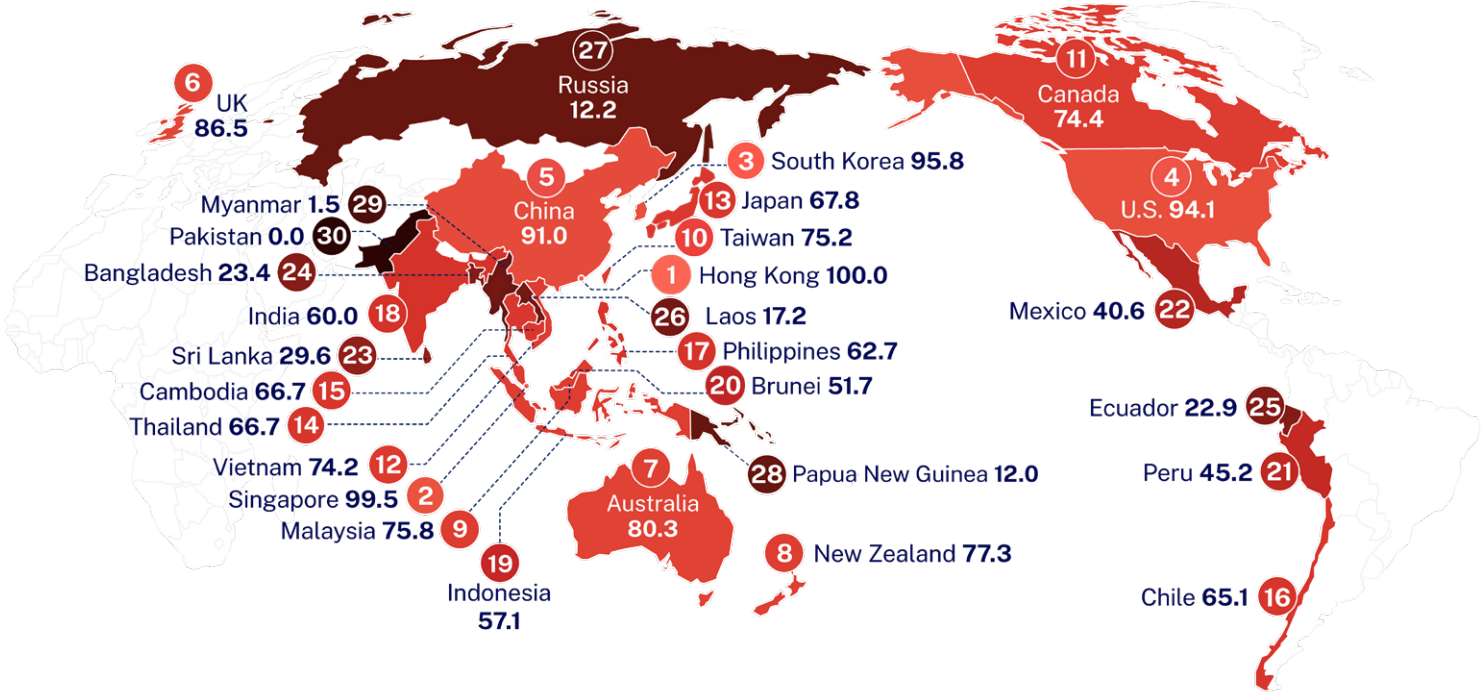


Figure 4

Societal pillar indicator list

	Indicator
2.01	Inequality (Gini coefficient)
2.02	Educational attainment
2.03	Labor standards
2.04	Political stability and absence of violence
2.05	Goods produced by forced labor or child labor
2.06	Government response to human trafficking
2.07	Trade in goods at risk of modern slavery
2.08	Social mobility, index
2.09	Life expectancy at birth
2.10	Uneven economic development
2.11	Universal Health Coverage Index

2.2 Societal pillar

The societal pillar captures the human dimensions that make trade sustainable over the long term, measuring how economies balance growth imperatives with the social structures that determine whether trade benefits society at large. The introduction of the Universal Health Coverage Index as a core metric in last year's STI reflects growing recognition that sustainable trade requires not just economic efficiency, but societal resilience and human development.

The story of the societal pillar in 2025 is one of longer-term resilience and predictable realities. Last year's top-performing economies in this aspect of trade remain at the forefront of societal performance in 2025, with New Zealand, Canada, and Australia continuing to set the benchmark for human capital, labor standards, and public trust in trade, while Papua New Guinea, Myanmar, and Pakistan remain at the lowest end of the scale. Beneath this apparent stability, however, lies a more nuanced picture.

Economies like Canada and New Zealand operate through **institutional leadership** strategies, using established legal frameworks and social systems to set global benchmarks for labor standards, human rights, and social protection. For instance, Australia, which claimed top spot this year in the societal pillar, continued its efforts to cut the share of its population in forced labor down to 0.16%, while also strengthening its legal framework against human trafficking. In essence, strong institutions enable comprehensive reforms that address the social foundations of trade relationships.

Emerging economies navigate through **selective social upgrading**, making targeted improvements in specific areas while managing the social tensions that accompany rapid economic transformation. India's progress in reducing inequality (its Gini coefficient significantly improved from 32.8 to 25.5) demonstrates this pathway, where rapid growth creates both opportunities for social progress and pressures that require careful management. These economies must balance the social disruption that often accompanies trade integration with investment in human capital and social protection.

Resource-dependent economies face **constrained social modernization**, where limited institutional capacity and economic dependence on primary sectors create persistent challenges in addressing labor exploitation and social inequality. The persistence of high child labor rates across multiple industries, even among economies making economic progress, such as Bangladesh and Pakistan, illustrates how deeply entrenched social challenges resist quick solutions when underlying economic structures remain unchanged.

The societal pillar reveals an interesting juxtaposition. While forced labor rates are declining in several economies, the diversification of exploitative practices into new sectors suggests that social challenges are evolving

rather than disappearing. China's experience, reducing forced labor prevalence while trading in more goods produced under such conditions, clearly illustrates how traditional metrics may miss the full scope of social transformation required for truly sustainable trade.

What this underscores is that the societal foundations of trade, which are education, equity, security, and labor rights, are not easily reshaped by short-term policy shifts. Economies can improve specific areas, but breaking out of entrenched positions in the societal pillar requires systemic reforms that address the root causes of inequality and exploitation. Just as with the economic pillar, the lesson is adaptation. Countries that wish to make their trade truly sustainable cannot rely only on openness or investment. They must also strengthen the human and social structures that allow trade to benefit society at large.

Figure 5

Societal pillar rankings

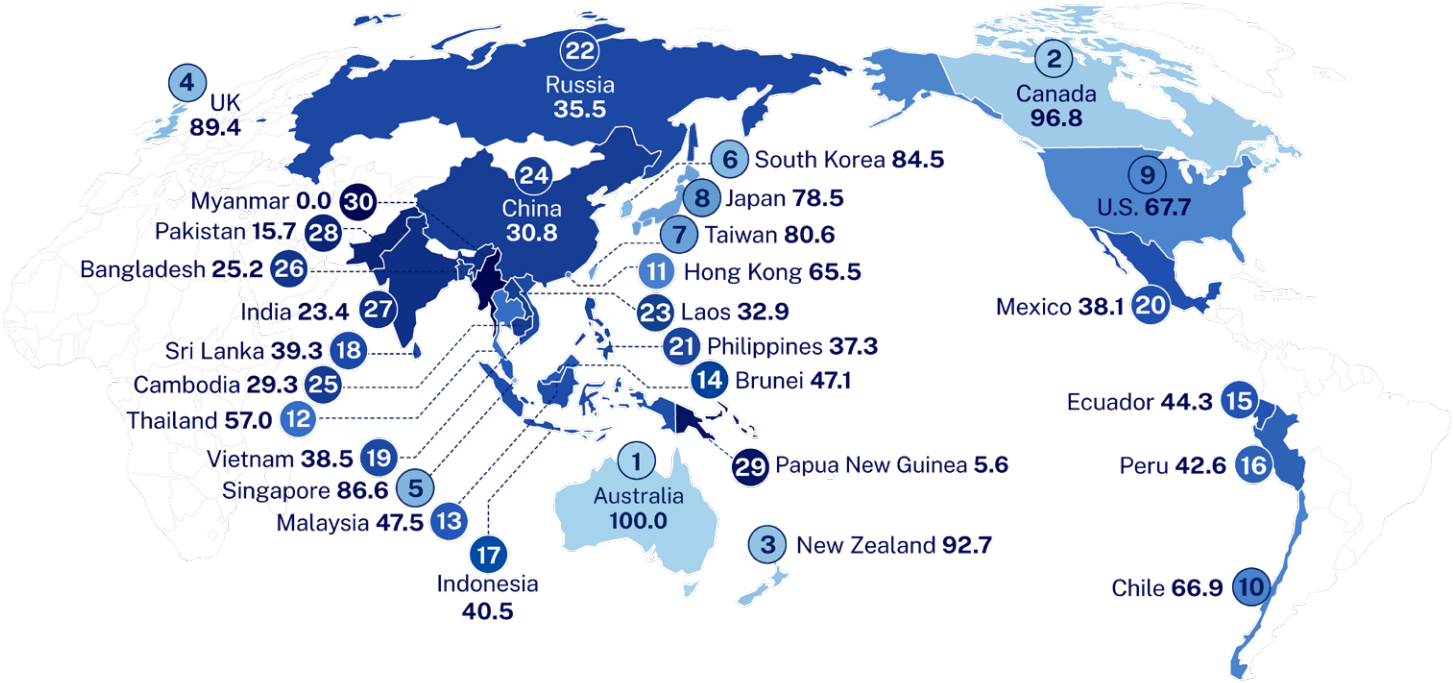


Figure 6

Environmental pillar indicator list

	Indicator
3.01	Air pollution, PM2.5 micrograms per cubic metre
3.02	Deforestation, index
3.03	% of wastewater treated
3.04	Energy intensity, energy consumed for each 1000 US$ of GDP in TOE
3.05	Ecological footprint
3.06	Renewable energy, %
3.07	Environmental standards in trade, count
3.08	Transfer emissions, million tonnes carbon
3.09	Share of natural resources in trade, %
3.10	Carbon

2.3 Environmental pillar

The environmental pillar of the 2025 Sustainable Trade Index reveals the most complex and contradictory landscape of the three pillars, capturing economies at vastly different stages of reconciling trade-driven growth with environmental stewardship. Unlike the economic and societal pillars where improvement pathways tend to follow predictable patterns, the environmental dimension exposes the fundamental tensions that define modern trade policy: the persistent competition between immediate development needs and long-term resource sustainability.

What emerges from the data is that a country's development stage strongly conditions its approach to environmental sustainability, shaping both its priorities and capacity for action. Advanced economies are pursuing what might be called **decoupling strategies**, where the modus operandi is maintaining or expanding trade volumes while reducing environmental intensity. Japan exemplifies this path, achieving near-universal wastewater treatment while simultaneously cutting per capita carbon dioxide emissions from 8.61 to 7.54 metric tons. Similarly, both the United States and the United Kingdom have significantly reduced their reliance on natural resource exports, with the latter also lowering its per capita emissions, suggesting steps toward a successful transition to higher-value, less resource-intensive trade profiles for developed economies.

Emerging economies, by contrast, are navigating what could be termed **selective modernization**, where targeted environmental improvements are achieved while maintaining development trajectories that remain carbon and resource-intensive. China demonstrates this approach most clearly, dramatically reducing its natural resource trade dependence from 13.3% to 5.6% and improving wastewater treatment, yet continuing to grapple with the broader environmental implications of its manufacturing-heavy export economy. India follows a similar pattern, substantially decreasing both wastewater discharge and resource export dependence. By substantially decreasing its share of trade in natural resources, India sends a strong signal to global actors that its export composition is growing in sophistication. These economies appear to be betting that technological leapfrogging and industrial upgrading can eventually deliver the desired environmental gains without sacrificing growth.

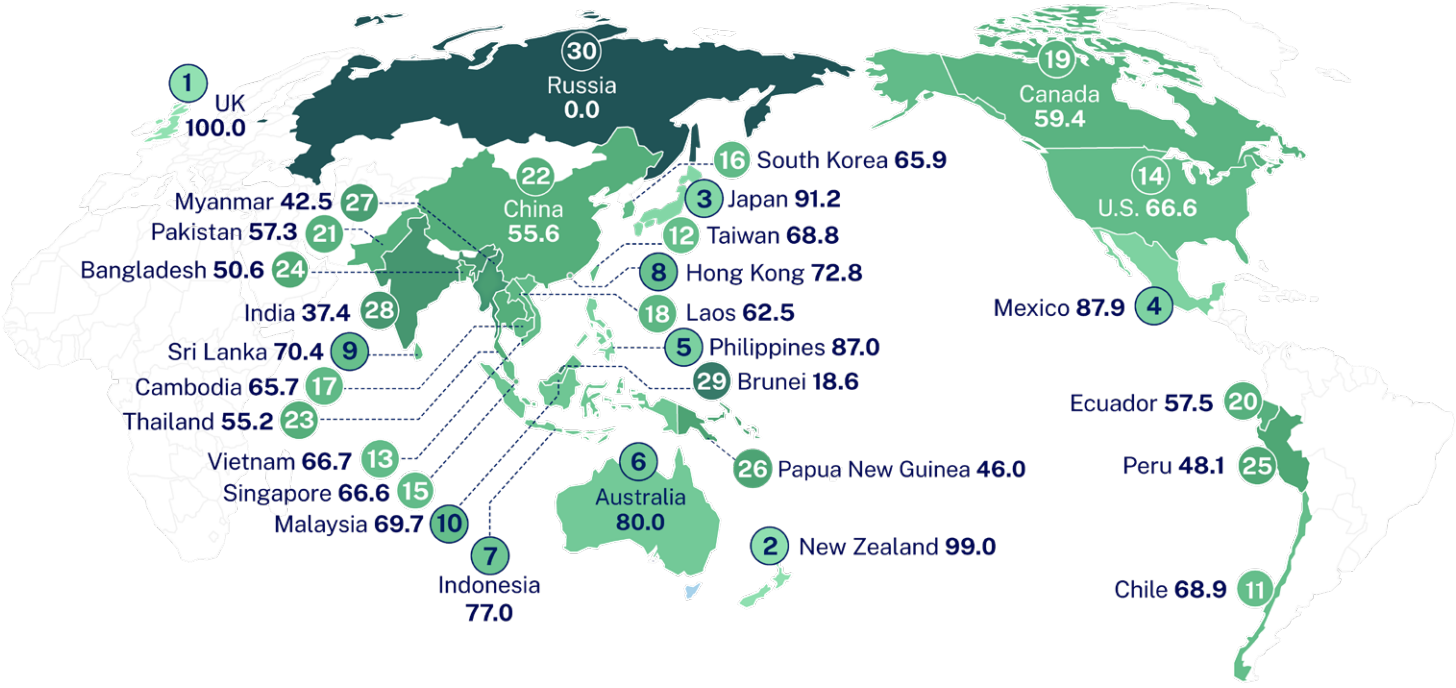
Lastly, developing and resource-dependent economies face stark **environmental trade-offs**, often finding environmental and development imperatives in direct conflict. Papua New Guinea's surge in natural resource export dependence and per capita emissions reflect the harsh reality that immediate development needs often trump longer-term environmental considerations when alternatives are limited and resources scarce. This may not necessarily imply policy failure, but rather the structural constraint of development pathways that remain heavily dependent on natural resource extraction.

Perhaps most troubling are the environmental reversals among economies with presumed resources and technology to perform better. Singapore's dramatically increased ecological footprint and Hong Kong's rising share of natural resources in trade suggest that even wealthy, technologically advanced economies can struggle to balance environmental management against intensifying economic pressures, highlighting how environmental commitments remain vulnerable when they conflict with immediate trade interests.

These contrasting trajectories highlight a central tension in sustainable trade: environmental protection remains largely optional when it conflicts with economic imperatives, regardless of an economy's development level. Advanced economies may have more tools for decoupling growth from environmental impact, but they also face the challenge of maintaining competitiveness while shouldering higher environmental standards. Emerging economies must balance rapid development against mounting pressure for environmental responsibility, often without the benefits of access to clean technologies that could facilitate the transition process.

Figure 7

Environmental pillar rankings



Developing economies, meanwhile, confront the reality that environmental stewardship can seem like a luxury when basic development needs remain unmet.

2.4 What the patterns reveal

The three-pillar analysis reveals that sustainable trade is not a destination but a **dynamic process of adaptation**, where economies continuously navigate tensions between competing priorities based on their development stage, institutional capacity, and strategic circumstances. Four distinct archetypes emerge from this analysis, each representing different approaches to managing the fundamental trade-offs between economic growth, social development, and environmental stewardship.

Advanced economies operate as **institutional leaders**, using established systems and technological capacity to pursue comprehensive sustainability approaches. They can afford to prioritize environmental decoupling and social benchmarks because their basic development needs are met. However, they remain vulnerable to competitive pressures that can undermine long-term commitments when short-term interests are at stake.

Dynamic emerging economies function as **selective modernizers**, making strategic investments in specific areas while managing the social and environmental tensions that accompany rapid development. Their success hinges on striking a delicate balance between transformation and stability, leveraging trade to upgrade their economic and social structures without triggering destabilizing disruptions.

Resource-dependent economies remain **structurally constrained**, facing the sharpest trade-offs between immediate development needs and longer-term sustainability goals. Their capacity for comprehensive reform is limited by economic dependence on primary sectors and weak institutional frameworks, requiring targeted interventions that address specific vulnerabilities while building foundations for future transformation.

Crisis-affected economies operate in **stabilization mode**, prioritizing the restoration of basic economic and social functions over ambitious sustainability goals. Their pathway to sustainable trade requires sequential progress — first achieving stability, then building capacity, and finally pursuing broader sustainability objectives.

What emerges is not a hierarchy of performance but a recognition that sustainable trade requires fundamentally different strategies depending on context. The economies making the most meaningful progress are those that honestly assess their capabilities and constraints, then pursue approaches that align with their circumstances rather than mimicking others' strategies. In an era of global fragmentation and mounting sustainability pressures, this adaptive realism may be the most sustainable approach of all.

Figure 8

STI 2025 rankings and scores

1-year rank +/-	STI 2025 rank	Economy	Overall STI score	1. Economic pillar	2. Societal pillar	3. Environmental pillar
▲ 1	1	United Kingdom	100.00	86.45	89.42	100.00
▼ 1	2	New Zealand	97.01	77.26	92.72	98.95
— 0	3	Australia	93.26	80.26	100	79.97
— 0	4	Singapore	90.01	99.51	86.63	66.56
▲ 1	5	South Korea	87.22	95.84	84.47	65.93
▲ 1	6	Hong Kong, SAR	83.79	100.00	65.49	72.78
▼ 2	7	Japan	83.48	67.81	78.54	91.21
— 0	8	Canada	80.45	74.40	96.75	59.38
▲ 1	9	United States	79.54	94.07	67.71	66.64
▼ 1	10	Taiwan	77.90	75.23	80.55	68.84
— 0	11	Chile	67.66	65.08	66.90	68.91
▲ 3	12	Malaysia	64.25	75.75	47.53	69.70
— 0	13	Philippines	61.68	62.68	37.34	86.99
— 0	14	Vietnam	58.43	74.24	38.49	66.74
▼ 3	15	Thailand	58.17	66.65	56.99	55.23
— 0	16	China	57.51	90.95	30.82	55.57
▲ 1	17	Indonesia	56.32	57.09	40.52	76.97
▼ 1	18	Mexico	52.90	40.62	38.13	87.90
— 0	19	Cambodia	50.75	66.65	29.29	65.74
▲ 6	20	Sri Lanka	41.09	29.64	39.25	70.37
▼ 1	21	Peru	39.65	45.20	42.63	48.09
▼ 1	22	Ecuador	34.80	22.89	44.33	57.45
— 0	23	India	33.15	60.04	23.44	37.38
— 0	24	Brunei	31.65	51.69	47.08	18.61
▼ 3	25	Laos	29.61	17.22	32.91	62.50
▼ 1	26	Bangladesh	23.85	23.44	25.21	50.64
▲ 1	27	Pakistan	12.53	0.00	15.71	57.33
▲ 1	28	Papua New Guinea	8.50	12.00	5.64	46.04
▲ 1	29	Russia	1.61	12.19	35.53	0.00
▼ 3	30	Myanmar	0.00	1.49	0.00	42.49

3.0
Beyond the scoreboard: Measuring what matters now

When the global trade framework was built on more stable assumptions and norms around openness, efficiency, and rules-based cooperation, comparative rankings were valuable in a different context.

In the current environment where uncertainty has become the norm, interpreting the data has become as crucial as collecting it. Rapid policy shifts, occurring often by the day, now overtake long-term structural patterns. The result is a new form of complexity that challenges traditional modes of measurement.

The STI was never designed to deliver a final verdict on trade performance. But when the global trade framework was built on more stable assumptions and norms around openness, efficiency, and rules-based cooperation, comparative rankings were valuable in a different context. They revealed where economies were gaining or losing, and why. The story they told is no longer as straightforward as before.

By mid-2025, trade policies are changing too fast for historical data to track. Industrial strategies are introduced preemptively or as a defensive reaction to decisions made by others, almost always in breach of agreed terms of trade partnership. Strategic alliances are no longer reliable but evolve from one month to the next. In this context, the STI cannot function merely as a scoreboard of past performance. Instead, it becomes a strategic compass: a way to understand how economies are structurally positioning themselves to respond to increasing trade tensions.

This reframing is not a rejection of measurement. On the contrary, it is a call to move beyond the headline rankings and delve deeper into how economies are navigating the foundational tensions shaping trade today. These are not new issues. But they are becoming more visible, more consequential, and more divergent. And while not always easy to quantify, they sit at the core of how countries make trade-offs, set strategies, and define resilience.

4.0
The strategic trade-offs shaping sustainable trade

Trade today is no longer governed by convergence on best practices. Instead, it is shaped by how economies navigate the tensions that force governments to make difficult policy choices about what to prioritize and what to forgo.

Trade today is no longer governed by convergence on best practices. Instead, it is shaped by how economies navigate the tensions that force governments to make difficult policy choices about what to prioritize and what to forgo.

We identify three foundational trade-offs that now define the landscape:

- **Efficiency** vs. **strategic autonomy**
- **Short-term profitability** vs. **long-term social cohesion**
- **Climate ambition** vs. **development sovereignty**

These tensions are not binary or abstract. They are real, and they shape the strategic position of every economy.

4.1 From resilience to realignment

Between 2022 and 2024, resilience emerged as the dominant strategy in global trade. The COVID-19 pandemic exposed critical vulnerabilities in supply chains and brought to the forefront the weaknesses of the just-in-time production models. In response, governments launched industrial policies aiming to reduce external dependencies, reshore critical inputs, and reassert national control over production. This period marked the rise of friendshoring, reshoring, and selective openness.

By mid-2025, however, the consensus has moved beyond resilience. Trade liberalization has been eroded and is being replaced by a wave of unilateral trade actions – especially tariff escalations – between longstanding partners.

These shifts mark the beginning of a broader realignment; that is, a strategic restructuring of global trade relationships and policy priorities in response to geopolitical dynamics, emerging technologies, and evolving national security doctrines. What used to be a consensus around liberalization and multilateralism is now replaced by a more fragmented and transactional trade environment.

At the core of this transformation lies a strategic trade-off: **efficiency** vs. **strategic autonomy**. Efficiency is the longstanding cornerstone of global trade. It relies on openness, specialization, and tightly integrated value chains. However, in a world where geopolitical risks and policy volatility are increasing and constantly shifting, autonomy has gained traction. Economies are reconsidering what they trade, with whom, and under what conditions.

Using the STI's indicators on trade liberalization and tariff barriers, we can visualize this trade-off in a 2x2 matrix. By plotting economies based on their scores in both dimensions, four distinct strategies emerge.

Efficiency is the longstanding cornerstone of global trade. It relies on openness, specialization, and tightly integrated value chains. However, in a world where geopolitical risks and policy volatility are increasing and shifting constantly, autonomy has gained traction.

The quadrant marked by high liberalization and low tariffs represents economies that have fully embraced trade as a growth strategy. We call this model **Open Market Leaders**, and in our sample, it includes economies like Chile, New Zealand, and Peru. These countries use both low barriers and strong institutions to maximize their integration in global value chains.

Economies that are characterized by high liberalization and high tariffs are **Progressive but Protected**, and this group includes the United States and Australia. This quadrant shows how advanced economies can maintain liberal trade institutions while selectively protecting key sectors, using their negotiating power to shape trade rules in their favor.

The intersection of low liberalization and high tariffs defines the **Protectionist Pathways**. Countries like Bangladesh, China, and India, for instance, demonstrate how such economies use trade as part of industrial policy, maintaining control over their pace of integration to support domestic development goals.

Finally, at the intersection of low liberalization and low tariffs sit **Selective Openness** economies, such as Russia and Sri Lanka. This model illustrates economies that may have resource-driven openness or transitional trade structures, where low formal barriers to trade do not necessarily translate into comprehensive trade liberalization.

This analysis reveals an important insight: Trade alignment today is not a binary choice between open or closed economies. It is a strategic calculus. The positioning of each economy reflects not just trade philosophy. It reflects a broader national response to geoeconomic uncertainty, strategic goals, and institutional capacity. The STI does not rank these models. Instead, it illuminates them. It provides policymakers, business leaders, and the academic community with a way to understand the diverse pathways through which economies pursue resilience, leverage trade, and reassert state control.

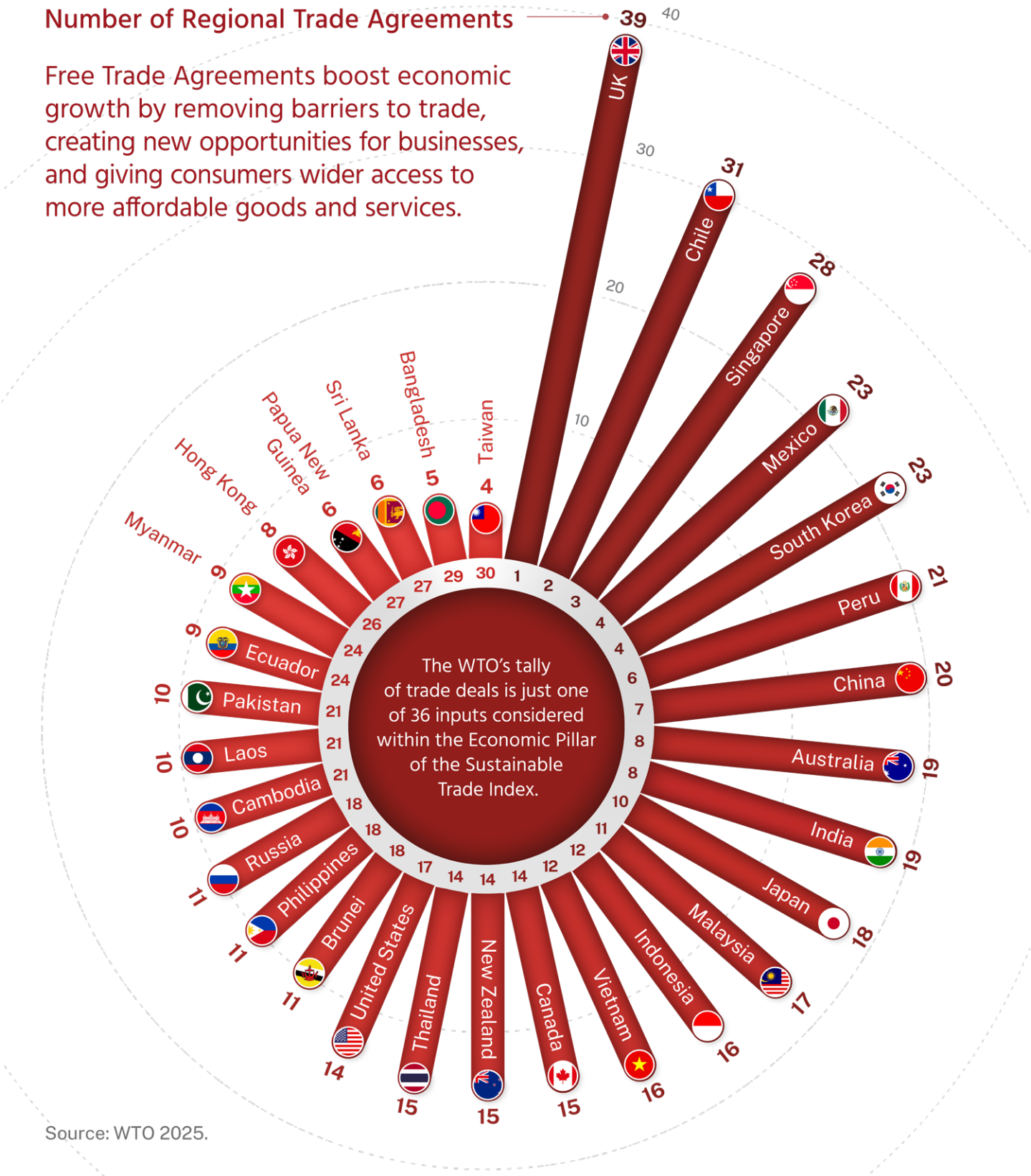
Figure 9

Trade realignment matrix: Four models of strategic positioning

	High tariffs (Autonomy)	Low tariffs (Efficiency)
High Liberalization	**Progressive but protected** US & Australia	**Open market leaders** Peru, New Zealand & Chile
Low Liberalization	**Progressive pathways** India, China & Bangladesh	**Selective openness** Russia & Sri Lanka

Figure 10

Number of trade agreements across STI economies



Source: WTO 2025.

As trade becomes more entangled with industrial policy, security, and geopolitical alignment, these strategic differences will become increasingly important. Realignment, then, is not a trend. It is the new trade framework.

4.2 Restoring trust in trade

Beneath the ongoing backlash against globalization lies a persistent question: Who really benefits from trade?

Over the past decade, this question has become harder to answer with confidence. Economic openness without social inclusion does create a gap in which trade is increasingly not a pathway to shared prosperity but a source of inequality, labor exploitation, and political instability.

At the heart of this trend lies an important trade-off: **short-term profitability** vs. **long-term social cohesion**.

Some economies continue to prioritize rapid economic growth and export competitiveness. Others, however, are investing in social foundations to ensure that trade delivers benefits broadly and fairly. Many struggle to reconcile both goals, caught between ambition and capacity.

Using STI data on GDP growth per capita as a proxy of profitability and the Social Mobility Index as a proxy for inclusion, we mapped the 30 economies we study against a 2x2 matrix (Figure 11). This reveals four distinct models of how economies navigate the trade-off between profitability and social cohesion.

Figure 11

Trade legitimacy matrix: Strategic models of inclusion

	High social cohesion	Low social cohesion
High profitability	**Balanced growth** Singapore, US & Korea	**Growth-first** India, Philippines & Bangladesh
Low profitability	**Mature developed** Australia, Japan & New Zealand	**Struggling economies** Pakistan, Mexico & Ecuador

Balanced growth model. This includes economies like Singapore and South Korea that show profitability and inclusion are not mutually exclusive. Strong institutions and progressive taxation help to spread trade benefits more widely. Nevertheless, other dimensions of social cohesion not captured in the Social Mobility Index can begin to erode public trust in trade despite strong aggregate prosperity and social mobility. Rising income inequality trends, particularly relevant for economies like the United States, illustrate this risk.

Growth-first models incorporate countries like Bangladesh and India that pursue export-led development while their social protection mechanisms lag behind. Cost advantages in high-profit sectors often come at the expense of union rights and wage protections. Yet, in some cases, external pressure has driven positive change, such as Bangladesh's agreement with global unions and apparel makers to an international accord to improve safety in its garment factories.

Mature and developed economies, such as Australia, Japan, and New Zealand, exhibit high social cohesion with slower growth. These economies maintain robust social safety nets and public trust in trade, but their long-term challenge lies in revitalizing economic dynamism without eroding inclusive structures.

Finally, the **Struggling economies model**. Countries like Ecuador, Mexico, and Pakistan face the most challenges: low growth and limited inclusion. Without meaningful social investment or sustained trade competitiveness, these economies risk being locked in a negative cycle of exclusion and stagnation.

The broader message is clear: Trade legitimacy is not automatic. It must be earned, maintained, and continually renewed.

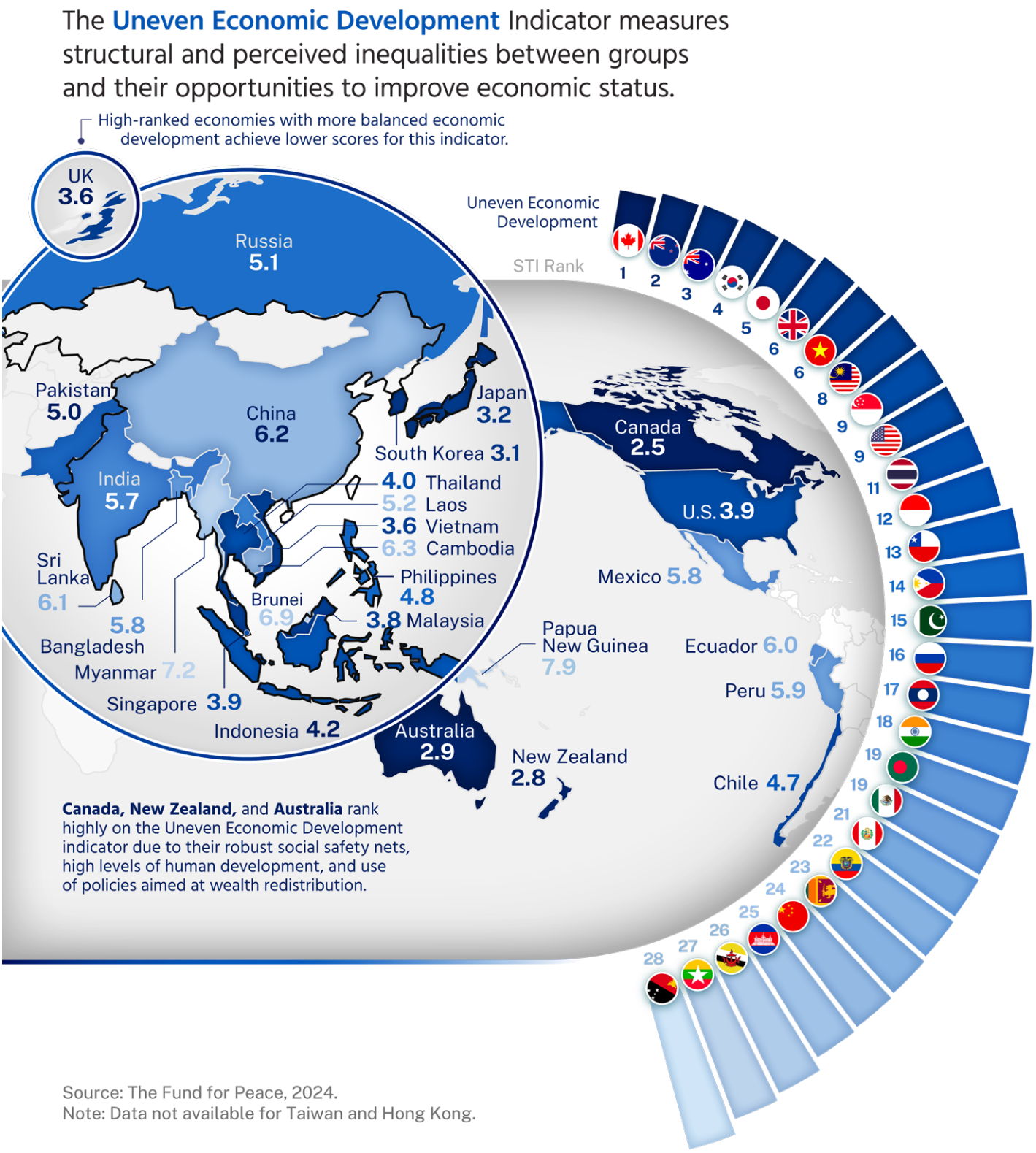
When the benefits of openness are concentrated, and social protection is weak, public trust is eroded. This creates fertile ground for protectionism and political backlash. As the World Trade Organization (WTO) and International Monetary Fund (IMF) have repeatedly warned, growing inequality could unravel decades of progress if trade becomes politically untenable.

Some governments and institutions are working to rebuild trust. The United Kingdom's Ethical Trading Initiative and Europe's Fair Wear Foundation offer models for embedding labor standards and ethical sourcing into trade frameworks. Yet these remain exceptions, not the rule.

Restoring trust in trade requires moving beyond GDP as the sole measure of success. In the long run, no trade strategy is sustainable unless it delivers visibly shared outcomes, not only for firms and investors, but for workers, communities, and future generations.

Figure 12

Uneven economic development rankings across STI economies



Source: The Fund for Peace, 2024.
Note: Data not available for Taiwan and Hong Kong.

4.3 Green trade, diverging paths

In the aftermath of the Paris Agreement in 2015, most economies endorsed the principles of sustainable trade. Yet, by 2025, the pathways to achieving it have sharply diverged. While environmental ambition continues to grow in some economies, it is increasingly filtered through the lens of national sovereignty, development priorities, and trade competitiveness.

At the center of this shift lies the third fundamental trade-off: **climate ambition** vs. **development sovereignty**.

Wealthier economies have moved from voluntary commitments to binding regulations. Carbon Border Adjustment Mechanisms (CBAMs), sustainable sourcing rules, and environmental due diligence laws are transforming how trade intersects with climate action. For emerging and developing economies, these shifts are often seen not as climate leadership but as green protectionism, measures that restrict market access or impose compliance burdens without accounting for local conditions or development needs.

To understand how economies are navigating this space, the STI cross-analyzes ecological footprint and renewable energy adoption, two meaningful proxies for environmental alignment and transition readiness. The resulting 2x2 framework shows four models.

Figure 13

Green Trade Matrix: Navigating the Environmental trade-off

	High ecological footprint	Low ecological footprint
High Renewables	**Green-Industrial transition** New Zealand & Chile	**Sustainable starters** Laos, Cambodia, Pakistan & Papua New Guinea
Low Renewables	**High-impact economies** US, Japan & Malaysia	**Undervalued potential** Ecuador

Figure 13 provides a telling taxonomy. We have countries like New Zealand and Chile that can be categorized under a **green industrial transition**. These economies combine strong renewable energy integration with moderate to high ecological impact, reflecting their advanced consumption patterns and trade exposure. Their challenge is not just cleaning their energy mix, but aligning resource use, land practices, and consumption with long-term climate targets.

At the intersection of high renewables and low ecological footprint, we have **Sustainable Starters**. Countries such as Laos, Cambodia, Papua New Guinea, and Pakistan. These countries appear environmentally sustainable, with low emissions and high renewable reliance. However, this is largely due to lower industrial activity and economic complexity. Their development pathway must avoid replicating fossil fuel-heavy growth models but build institutional capacity for green transformation.

High-impact economies, such as Japan, Malaysia, and the United States, are industrialized but have high ecological pressure and low renewable penetration. While technologically advanced, they lag in transforming their energy systems into greener alternatives. The challenge here is decarbonization at scale – the ability to accelerate clean energy transition without undermining industrial competitiveness.

Ecuador stands out as an economy with both a small ecological footprint and low renewable integration, suggesting **untapped potential** for green growth models that builds environmental leadership into the country's development trajectory. Its footprint may reflect a relatively light industrial base, but the opportunity lies in proactively embedding renewables into future trade and infrastructure strategies before high-impact patterns emerge.

This divergence reveals a deeper concern. Sustainability has moved from a shared aspiration to a fragmented playing field.

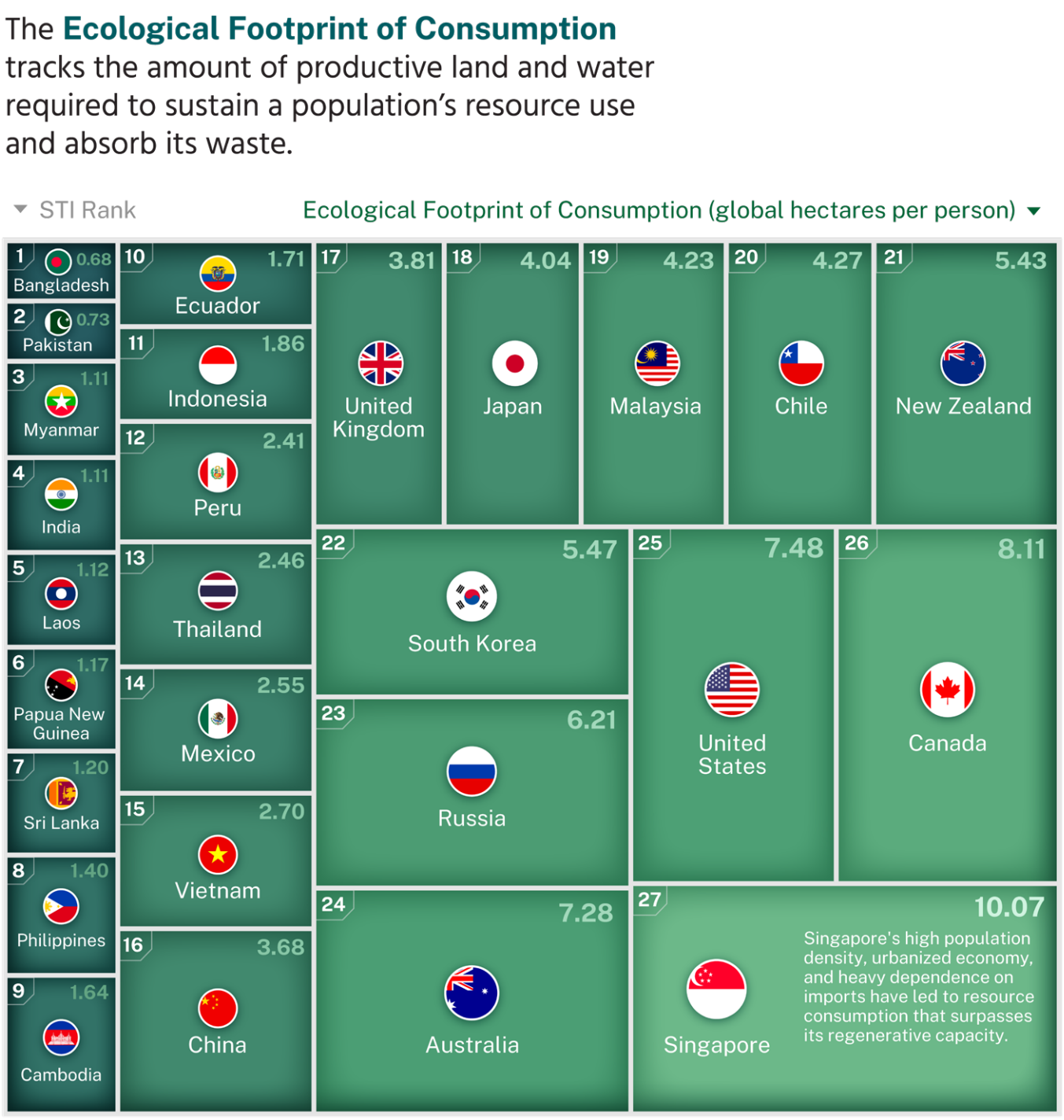
Some economies embed environmental commitments into trade regimes. Others view those same policies as asymmetric barriers. In between, hybrid models are emerging. Malaysia and Vietnam, for example, blend green investment with export competitiveness, pursuing transitional strategies without abandoning trade advantages.

But these divergent paths come at a cost. Businesses face a patchwork of standards, and international accountability weakens when common benchmarks give way to overlapping, often conflicting national rules.

The STI does not simply rank these approaches. Instead, it highlights how each reflects a trade-off between climate urgency and national development. In a global system still lacking coordinated environmental governance, the strategic choices economies make today will define the future of legitimacy and resilience of green trade.

Figure 14

Ecological footprint of consumption across STI economies



Note: Data not available for Brunei, Taiwan, and Hong Kong.

Source: Global Footprint Network, 2024.

5.0 Conclusion

A new lens on sustainable trade

2025 has become a turning point for international trade. Volatility is no longer a temporary disruption. It is the baseline. This suggests a strategic dilemma: how should economies respond when the landscape is constantly shifting?

For the STI, this implies rethinking its role. The index was always more than just a scoreboard. And in today's world especially, rankings alone are not enough. Economies are no longer converging on shared best practices or global standards. Instead, they are diverging based on the choices they make, the restrictions they face, and the objectives they pursue.

This year's report introduces a new framing. In addition to exploring what the data analysis reveals about sustainable trade, it pivots toward understanding and highlighting how economies navigate three foundational trade-offs:

- Efficiency vs. strategic autonomy
- Profitability vs. social cohesion
- Climate ambition vs. development sovereignty

These are not hypothetical dilemmas. They are real, visible, and growing. And while they cannot be resolved through rankings alone, the STI provides a strategic lens necessary for choosing the path an economy takes for a given objective. It reveals how economies are positioned structurally, institutionally, and developmentally to respond to these pressures.

The data confirms what these trade-offs imply: sustainable trade is not a destination. It is a process of adaptation.

- Advanced economies often act as institutional leaders.
- Dynamic emerging markets pursue selective modernization.
- Resource-dependent economies remain structurally restricted.
- Crisis-affected economies prioritize stabilization as a prerequisite for resilience, and eventually for sustainability.

In all cases, what matters is not just performance. It is preparedness. How ready and able is an economy to make hard choices, remain resilient, and build legitimacy in a divided trade system? That is the burning question that arises from the 2025 STI.

6.0 Methodology

A. Definitions

The Hinrich-IMD Sustainable Trade Index

The Hinrich-IMD Sustainable Trade Index measures 30 economies' readiness and capacity to participate in the global trading system in a manner that supports the long-term goals of economic growth, environmental protection, and societal development.

It covers major trade blocs and trading economies in the Asia Pacific region, including members of the Asia-Pacific Economic Cooperation (APEC), Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), and Regional Comprehensive Economic Partnership (RCEP).

The economic pillar

The economic pillar measures an economy's ability to ensure and promote economic growth through international trade. In this category, economies receive scores for indicators that demonstrate a link between the trading system and economic growth.

Some indicators capture the quality of trade infrastructure, while others measure the ease of conducting international trade, such as current account balance, exchange rate stability, and trade costs.

We measure export diversification by evaluating an economy's trade destinations and how heavily its exports are concentrated by sector – because economies with diversified export markets and products are better equipped to absorb external economic shocks.

We consider the technological infrastructure and innovation capabilities of an economy by assessing its emphasis on research and development investment and digital technologies, which are key drivers for the production of sophisticated and sustainable goods and services.

The societal pillar

Social factors matter in an economy's capacity to trade internationally over the long term. Economies are evaluated on the encouragement and support of the development of human capital, such as the extent of education, healthcare, and labor standards.

This pillar also captures factors that influence public support for trade expansion. These include income inequality, political stability, goods produced by forced and child labor, and the government response to human trafficking.

The environmental pillar

The environmental pillar measures the extent to which an economy's trade supports sustainable resources. The factors include measurements of non-renewable natural resources in trade and the management of externalities that arise from economic growth and participation in the global trading system.

While an economy's capacity to participate in the global trading system is dependent on economic development, achieving sustainable trade requires prudent stewardship of natural resources and acknowledgment of the externalities to promote its overall environmental capital. The indicators chosen in this section measure an economy's environmental capital and include measures for air and water pollution. In terms of future impact, we measure national environmental standards, carbon emissions, and share of natural resources in exports.

B. Data preparation

We establish a reference year for each indicator or sub-indicator. Generally, it is the previous full year, but it may be earlier for some data.

For the reference year:

1.0 We first check if data is available for the reference year, if this is the case the data will be considered for calculation.

2.0 If data for the reference year is unavailable, we generally check the previous four years before the reference year. We choose the closest year to the reference year or we categorize that particular indicator as not available, and the data field is left empty.

3.0 An economy showing an empty data field for a certain indicator will therefore not be listed and ranked for that specific indicator.

C. Data processing

In this document, 'values' denote the raw data of indicators in their original measurement units. 'Scores' represent these values rescaled between 0-100, as derived in the third step of our data processing procedure. For all indicators, pillars, and the overall STI, a higher score indicates superior performance in that specific category, while a lower score suggests subpar performance. Lastly, 'rankings' are determined by arranging the scores of each indicator in descending order, from highest to lowest.

1.0 We check each indicator for outliers:

1.1 Outliers are identified using the Interquartile Range (IQR) method. This is calculated by taking the first (Q1) and third (Q3) quartiles for each indicator, with the IQR being the difference between these two values (IQR = Q3-Q1). Data points falling below [Q1 – (4×IQR)] or above [Q3 + (4×IQR)] are classified as outliers.

1.2 The identified outliers are then winsorized. This process involves capping the extreme values to reduce the effect of possibly spurious outliers.

1.3 To address the variance among outliers, a logarithmic transformation is then applied to the winsorized data. This transformation helps to stabilize the variance and make the data more normally distributed.

2.0 For those indicators that contain sub-indicators (or sub-sub indicators):

2.1 At the sub-indicator level, values are rescaled between 0 and 100. The optimal value receives a score of 100, while the least favorable gets 0. If a higher value for an indicator signifies a better outcome, the economy with the highest value scores 100, and the one with the lowest scores 0. Conversely, if a lower value indicates a better outcome, the economy with the lowest value scores 100, and the highest scores 0. For specifics on what determines the best or worst outcome for each indicator, refer to the Notes and Sources section.

2.2 Sub-indicator values are then averaged to form the primary indicator.

2.3 For indicators comprising sub-sub-indicators, we first construct the sub-indicator as per step 2.2. Once the sub-indicators are established, the same process is applied to derive the sub-sub-indicator.

3.0 All indicators are rescaled between 0 and 100, with the best value scoring 100 and the worst 0. This rescaling facilitates indicator comparisons.

4.0 Within each pillar all indicators are averaged to construct the pillar.

5.0 All pillars undergo rescaling between 0 and 100. This step minimizes the influence of uneven indicator distribution within pillars, ensuring comparability.

6.0 The three pillars are averaged to determine the overall score, presented as a value between 0 and 100. This consistent scoring range, from sub-sub-indicators to the overall score, ensures uniformity across all analysis levels.

D. Updated indicators

We have updated some components to further refine the index from prior iterations.

1.0 Under the Economic Pillar, for the indicators 1.06.01 b New tariff barriers and 1.06.02 b New non-tariff barriers, the year has been updated from 2023 (in STI 2024), to 2024 for STI 2025.

2.0 Under the Economic Pillar, for the indicator 1.08 Exchange rate stability, parity change from national currency to SDR, the year is updated from 2023/2021 to 2024/2022.

3.0 Under the Economic Pillar, the indicator 1.15.02 Researchers in R&D, per, capita, has now been changed to Researchers in R&D, per 1,000 inhabitants.

Notes and sources

[H] High value promotes global trade

[L] Low value promotes global trade

[Sum] Indicator has sub-indicators

Background data	Source	Definition
Population	IMF WEO	Population in millions (estimates for 2024)
GDP per capita	IMF WEO	The total value at current prices of final goods and services produced within a country (in USD) during a specified time period divided by the average population for the same one year.

	Indicator	Source	Definition
1.01	Consumer price inflation	WEO	Harmonized inflation rates, year average. [L]
1.02	Real GDP Growth per capita, % GDP	WEO, Taiwan: DGBAS	GDP is expressed in current US dollars per person. Data is derived by first converting GDP in national currency to US dollars and then dividing it by total population. [H]
1.03	Growth in labor force, %	WEO, Taiwan: DGBAS	People aged 15+, who are currently employed and people who are unemployed but seeking work as well as first-time jobseekers. Unpaid workers, family workers, and students are often omitted, and some countries do not count members of the armed forces. [H]
1.04	Foreign direct investment, net inflows, % GDP	World Bank, Taiwan: Central Bank, Balance of Payments Quarterly	Net inflows of foreign investment to acquire a lasting management interest (10%+ of voting stock) in an enterprise. Sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. [H]
1.05	Gross fixed capital formation, % GDP	World Bank, Taiwan: DGBAS	Includes land improvements; plant, machinery, and equipment purchases; construction of roads, railways, schools, offices, hospitals, private residences, and commercial & industrial buildings. Net acquisitions of valuables are considered capital formation. [H]
1.06	Tariff & non-tariff barriers	Global Trade Alert	Six indicators measuring tariff and non-tariff barriers. [sum]
1.06.01	Tariff barriers	Global Trade Alert	Three indicators measuring tariff barriers. [sum]
1.06.01.a	Tariff barriers in force	Global Trade Alert	Count of 'harmful' tariff measures currently in force. [L]
1.06.01.b	New tariff barriers 2024	Global Trade Alert	Count of new (2024) 'harmful' tariff measures currently in force. [L]
1.06.01.c	Net percentage of imports affected by new tariff barriers (2023)	Global Trade Alert	Estimates of the import shares potentially affected by 'harmful' tariff measures currently in force. [L]
1.06.02	Non-tariff barriers	Global Trade Alert	Three indicators measuring non-tariff barriers. [sum]
1.06.02.a	Non-tariff barriers in force	Global Trade Alert	Count of 'harmful' non-tariff measures currently in force. [L]

	Indicator	Source	Definition
1.06.02.b	New non-tariff barriers 2024	Global Trade Alert	Count of new (2024) 'harmful' non-tariff measures currently in force. [L]
1.06.02.c	Net percentage of imports affected by new non-tariff barriers (2023)	Global Trade Alert	Estimates of the import shares potentially affected by 'harmful' non-tariff measures currently in force. [L]
1.07	Trade liberalization	WTO, KAOPEN, Freedom House	Three indicators measuring trade liberalization. [sum]
1.07.01	Regional Trade Agreements, number in force	WTO	Any reciprocal trade agreement between two or more partners, not necessarily belonging to the same region. [H]
1.07.02	Capital account liberalization, Index	KAOPEN	The Chinn-Ito index (KAOPEN) is an index measuring a country's degree of capital account openness. The index was initially introduced by Chinn and Ito *(Journal of Development Economics*, 2006). KAOPEN is based on the binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). [H]
1.07.03	Investment Freedom, Index	Heritage Foundation	Investment freedom evaluates a variety of regulatory restrictions that typically are imposed on investment. Points are deducted from the ideal score of 100 for each of the restrictions found in a country's investment regime. [H]
1.08	Exchange rate stability, parity change from national currency to SDR, 2024/2022	IFS	Parity changes are in absolute values. Period average for all countries. [L]
1.09	Domestic credit to private sector, % of GDP	IMF (via World Bank)	Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries, these claims include credit to public enterprises. The financial corporations include monetary authorities and deposit money banks, as well as other financial corporations where data is available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies. [H]
1.10	Foreign trade and payments risk	IMF, SP, Moody's, Fitch	Two indicators measuring foreign trade and payment risk. [sum]
1.10.01	Country credit rating	SP, Moody's, Fitch	IMD WCC created an Index of three country credit ratings (Fitch, Moody's, S&P). Each, including the outlook, is converted to a numerical score, and averaged for each country, with a possible range of 0-60. [H]
1.10.02	Gross debt, % GDP	WEO	Private nonguaranteed external debt comprises long-term external obligations of private debtors that are not guaranteed for repayment by a public entity. Data is in current US dollars. [L]

	Indicator	Source	Definition
1.11	Trade costs	Transparency International, World Bank	Three indicators measuring country-specific external, indirect costs on trade (rule of law, corruption, logistics) [sum]
1.11.01	Logistics performance, index	World Bank	LPI ranks countries on six dimensions of trade, including customs performance, infrastructure quality, and timeliness of shipments. The data used in the ranking comes from a survey of logistics professionals. [H]
1.11.02	Corruption perceptions, index	Transparency International	The CPI is calculated using 13 different data sources from 12 different institutions that capture perceptions of corruption within the past two years. The data sources are standardized to a scale of 0-100 where 0 equals the highest level of perceived corruption and 100 equals the lowest level of perceived corruption. [H]
1.11.03	Rule of law, index	World Bank	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. [H]
1.12	Monetary policy intervention	IMF	Two indicators measuring an economy's potential capacity to intervene in and influence exchange rates. [sum]
1.12.01	Current account balance, % GDP	IMF	Current account balance is the sum of net exports of goods and services, net primary income, and net secondary income. [L]
1.12.02	Change (1-year) in total reserves (includes gold), % GDP	IMF	Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31) London prices. Data is in current US dollars. [L]
1.13	Export concentration	UNCTAD	Two indicators measuring the export concentration in markets and products. [sum]
1.13.01	Export market concentration, Top 5 as % total	UNCTAD	The top five named export countries as a percentage of total exports. [L]
1.13.02	Export product concentration, Top 5 as % total	UNCTAD	The top five named export products, as a percentage of total exports, using the UNCTAD product data based on the SITC commodity classification, Revision 3, at the two-digit level: giving 65 product categories. [L]
1.14	Exports of goods and services	WTO	Two indicators measuring merchandise and commercial services exports. [sum]
1.14.01	Merchandise exports, US$ millions	WTO	Compiled from national data sources, WTO, IMF International Financial Statistics, and the Trade Data Monitor online database. If data from national sources are not available at the time of release, estimates are produced based on partner trade statistics. [H]
1.14.02	Commercial services exports, US$ millions	WTO	Commercial services include transport, travel, and other private services (communication; construction; insurance; financial; computer and information (including news), royalties and license fees; other business services (legal, accounting, consulting, public relations, advertising, market research, architectural, engineering, and other technical services) [H]
1.15	Technological innovation	UNESCO, WIPO, COMTRADE, NSF	Five indicators measuring research and development. [sum]

	Indicator	Source	Definition
1.15.01	R&D expenditure, % GDP	UNESCO, Taiwan: OECD MSTI	The sum of financial resources (national and foreign) used for the execution of research and experimental development (R&D) works on the national territory by the public sector and by the business enterprise sector. It includes current expenditure (annual wages and salaries of R&D personnel and operating expenses) and capital expenditure (purchases of equipment required for R&D). [H]
1.15.02	Researchers in R&D, per 1,000 inhabitants	UNESCO, Taiwan: OECD MSTI & WEO, Peru: National Council for Science, Technology and Technological Innovation	Researchers in R&D are professionals engaged in the conception or creation of new knowledge. Products, processes, methods, or systems and in the management of the projects concerned. [H]
1.15.03	Patent applications, per million inhabitants	WIPO, WEO, Taiwan: TIPO	Total patent applications (Direct and PCT national phase entries per million inhabitants. [H]
1.15.04	High-technology exports, % of manufactured exports	COMTRADE	High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. [H]
1.15.05	Scientific articles, per million people	NSF National Science & Engineering Indicators Hong Kong, SAR: University Grants Committee	Article counts are from a selection of journals, books, and conference proceedings in S&E from Scopus. [H]
1.16	Technological infrastructure	ITU (via World Bank), Ookla, M-Labs, The Bandwidth Place	Four indicators measuring the technological infrastructure, internet quality and penetration, and mobile penetration. [sum]
1.16.01	Fixed internet speed, Mbps	Ookla, M-Labs/ cable.co.uk, The Bandwidth Place	Average connection speed in Mbps: data transfer rates for Internet access by end users. The values presented are a weighted average of three internet speed tests Ookla, M-Lab, SpeedTestNet.io. [H]
1.16.02	Internet users, % population	ITU via World Bank, Taiwan: National Communications Commission	Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV, etc. [H]
1.16.03	Fixed broadband subscriptions (per 100 people)	ITU via World Bank, Taiwan: National Communications Commission	Fixed broadband subscriptions refer to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fiber-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband, and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations. [H]

	Indicator	Source	Definition
1.16.04	Mobile subscriptions (per 100 people)	ITU via World Bank, Taiwan: National Communications Commission	Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provides access to the PSTN using cellular technology. The indicator includes (and is split into) the number of post-paid subscriptions, and the number of active prepaid accounts (i.e., that have been used during the last three months). The indicator applies to all mobile cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging, and telemetry services. [H]
2.01	Inequality (Gini coefficient)	World Bank, Taiwan: Report on the Survey of Family Income and Expenditure, R.O.C., 2020, Hong Kong, SAR: Census and Statistics Department, New Zealand, Canada, Japan: OECD	The Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus, a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. [L]
2.02	Educational attainment	HDR, THES, World Bank	Three indicators measuring the attainment and quality of education. [sum]
2.02.01	Mean years of schooling	UN HDR, Taiwan: Directorate-General of Budget, Accounting, and Statistics, Taiwan (ROC)	The average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level. [H]
2.02.02	University education Index	THES	IMD constructed index to capture the quality of universities. Measures the (1) number, (2) score, (3) score per capita, of the universities in THES 1'000. [H]
2.02.03	Tertiary enrollment	World Bank, Taiwan: Ministry of Education	Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Tertiary education, whether to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level. [H]
2.03	Labor standards	World Bank, Global State of Democracy Indices	Two indicators measuring employee rights, including gender equality and collective bargaining. [sum]
2.03.01	Gender non-discrimination in hiring	World Bank Women, Business and the Law	Two indicators measuring employee rights, including gender equality and collective bargaining. [sum]
2.03.02	Freedom of association and assembly	Global State of Democracy Indices	Existence and enforcement of laws that allow citizens the right to assemble freely and associate into groups such as political parties and trade unions among others. [H]

	Indicator	Source	Definition
2.04	Political stability and absence of violence	World Bank Political Stability and Absence of Violence	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. [H]
2.05	Goods produced by forced labor or child labor	US Bureau of International Labor Affairs (ILAB), Global Slavery Index	Three indicators measuring the extent of forced labor or child labor. [sum]
2.05.01	Goods produced by forced labor	US Bureau of International Labor Affairs (ILAB), Global Slavery Index	Two indicators measuring the extent of forced labor. [sum]
2.05.01.a	Goods produced by forced labor, number of goods categories	US Bureau of International Labor Affairs (ILAB), Global Slavery Index	Matrix of goods and their source countries which ILAB has reason to believe are produced by child labor or forced labor in violation of international standards, as required under the Trafficking Victims Protection Reauthorization Act (TVPRA). [L]
2.05.01.b	% population in forced labor	Global Slavery Index	% population in forced labor. [L]
2.05.02	Goods produced by child labor, number of goods categories	US Bureau of International Labor Affairs (ILAB), Global Slavery Index	Matrix of goods and their source countries which ILAB has reason to believe are produced by child labor or forced labor in violation of international standards, as required under the Trafficking Victims Protection Reauthorization Act (TVPRA). [L]
2.06	Government response to human trafficking	US Department of State, Global Slavery Index	Three indicators measuring the government response to human trafficking. [sum]
2.06.01	Government response to human trafficking, Criminalization	US Department of State	Number of conventions Ratified or Accession. [H]
2.06.02	Government response to human trafficking, Strategy	Global Slavery Index	Government response score. [H]
2.06.03	Government response to human trafficking, Action	US Department of State	The country's tier ranking is based on the government's efforts to combat trafficking as measured against the TVPA minimum standards and compared to its efforts in the preceding year. Score 1-4 corresponding to countries Tier. [L]
2.07	Trade in goods at risk of modern slavery	Comtrade + Global Slavery Index	Two indicators measuring the extent to which imports and exports adhere to international labor standards. [sum]
2.07.01	Imports of goods at risk of modern slavery, US$ millions	Comtrade + Global Slavery Index, Taiwan: Comtrade recorded as 'Other Asia, nes'	Value of imports in goods and country combinations identified as at risk of modern slavery. [L]

	Indicator	Source	Definition
2.07.02	Exports of goods at risk of modern slavery, US$ millions	Comtrade + Global Slavery Index, Taiwan: Comtrade recorded as 'Other Asia, nes'	Value of exports in goods and country combinations identified as at risk of modern slavery. [L]
2.08	Social mobility, Index	World Economic Forum	The Index measures the intergenerational social mobility in different countries in relation to socioeconomic outcomes. [H]
2.09	Life expectancy at birth	UN HDR	Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. [H]
2.10	Uneven Economic Development	The Fund for Peace - Fragile States Index	The Uneven Economic Development Indicator considers inequality within the economy, irrespective of the actual performance of an economy. It considers perceptions of inequality as well as the opportunities for groups to improve their economic status.
2.11	Universal Health Coverage Index;	The Global Health Observatory, WHO	Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn, and child health, infectious diseases, non-communicable diseases, and service capacity and access, among the general and the most disadvantaged population). The indicator is an index reported on a unitless scale of 0 to 100, which is computed as the geometric mean of 14 tracer indicators of health service coverage. The tracer indicators are organized by four components of service coverage: 1. Reproductive, maternal, newborn, and child health 2. Infectious diseases 3. Noncommunicable diseases 4. Service capacity and access
3.01	Air pollution	OECD, Taiwan: EPA, Hong Kong, SAR: Environmental Protection Department, South Korea: World Bank	Levels of particulate matter 2.5 (PM 2.5), to capture the air pollution in a country. [L]
3.02	Deforestation	Yale Environmental Performance Index	Index of the change in a country's forest cover. (NOTE: index, not the value of change). [H]
3.03	% of wastewater treated	UN SDG Indicators Database, Taiwan: The Statistical Yearbook of Construction and Planning Agency, Ministry of the Interior	% of wastewater treated. [H]
3.04	Energy intensity, energy consumed for each US$1,000 of GDP in TOE	IEA	Refers to the Total Primary Energy Supply (TPES) per US$1,000 of Gross Domestic Product. Represents the amount of energy consumed (production + imports - exports - bunkers - stock changes) per output, expressed in tons of oil equivalent per US$1,000 of GDP.

	Indicator	Source	Definition
3.05	Ecological footprint, global hectares per person	Global Footprint Network	The Ecological Footprint adds up all the productive areas for which a population, a person or a product competes. It measures the ecological assets that a given population or product requires to produce the natural resources it consumes (including plant-based food and fiber products, livestock and fish products, timber and other forest products, space for urban infrastructure) and to absorb its waste, especially carbon emissions. [L]
3.06	Renewable energy	IEA	Share of renewables in total energy requirements, %. [H]
3.07	Environmental standards in trade	UN Treaty Collection, Taiwan: Management Regulations for the Import and Export of Industrial Waste	Count of whether seven conventions are ratified, implemented, or not. [sum]
3.07.01	Convention: Hazardous Wastes	UN Treaty Collection, Taiwan: Management Regulations for the Import and Export of Industrial Waste	Count of whether the convention is (1) ratified, (2) implemented, or (0) not. [H]
3.07.02	Convention: Prevention of Marine Pollution	UN Treaty Collection, Taiwan: Marine Pollution Control Act	Count of whether the convention is (1) ratified, (2) implemented, or (0) not. [H]
3.07.03	Convention: Protection of the Ozone Layer (Vienna)	UN Treaty Collection, Taiwan: Air Pollution Control Act	Count of whether the convention is (1) ratified, (2) implemented, or (0) not. [H]
3.07.04	Convention on Climate Change (Kyoto)	UN Treaty Collection	Count of whether the convention is (1) ratified, (2) implemented, or (0) not. [H]
3.07.05	The International Timber Agreement	UN Treaty Collection, Taiwan: Regulations for Management of Protection Forest	Count of whether the convention is (1) ratified, (2) implemented, or (0) not. [H]
3.07.06	Convention: International Trade in Endangered Species	UN Treaty Collection, Taiwan: Regulations on Import and Export of Endangered Species of Wild Fauna, Flora and Related Products	Count of whether the convention is (1) ratified, (2) implemented, or (0) not. [H]

	Indicator	Source	Definition
3.07.07	Convention: Prior Informed Consent - Hazardous Chemicals (Rotterdam)	UN Treaty Collection	Count of whether the convention is (1) ratified, (2) implemented or (0) not. [H]
3.08	Transfer emissions, million tonnes carbon	Global Carbon Project	Transfer emissions, in million tonnes carbon. Countries with dirty export industries contribute to an unsustainable model for global trade. [L]
3.09	Share of natural resources in trade, %	UNCTAD	Natural resources (ores and metals, mineral fuels, lubricants, and related materials) as a percentage of a country's total trade. [L]
3.10	Carbon	World Bank, EDGAR	Two indicators measuring the extent of CO^2 emissions, and accounting for the externalities. [sum]
3.10.1	Carbon pricing	World Bank Carbon Pricing Dash Board	Count of whether the (2) Carbon pricing is currently in effect at the national level, (1) Carbon pricing is scheduled for implementation but is not currently in effect, or (0) Carbon pricing is neither scheduled for implementation nor currently in effect. [H]
3.10.2	CO^2 emissions per capita, tonnes per person	EDGAR - Emissions Database for Global Atmospheric Research	CO^2 emissions by country/region name and include all human activities leading to climate-relevant emissions, except biomass/ biofuel combustion (short cycle carbon). [L]

About us

Global trade has helped lift hundreds of millions of people around the world out of poverty. It is a powerful driver of economic growth and a key source of job opportunities. However, downsides may include labor disruptions, negative environmental impacts, and income inequalities. Therefore, sound public policy and responsible business leadership are essential for properly harnessing the full benefits of global trade.

The Hinrich Foundation and the IMD World Competitiveness Center have combined their expertise to build the Hinrich-IMD Sustainable Trade Index, a framework for policy makers, business executives, and civil society leaders to understand and advance sustainable global trade.

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advancing sustainable global trade

The Hinrich Foundation is an Asia-based philanthropic organization dedicated to advancing mutually beneficial and sustainable global trade. We believe that global trade – when mutually beneficial and sustainable – is a powerful force for shared prosperity, technological progress, sustainability and peaceful international cooperation. Our work is grounded in independent, fact-based research and the development of innovative trade education programs.

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IMD is an independent academic institution with close ties to business and a strong focus on impact. Challenging what is and inspiring what could be, it develops leaders who transform organizations for a more prosperous, sustainable, and inclusive world. Through its Executive Education, MBA, Executive MBA, and advisory work IMD helps leaders and policymakers navigate complexity and change. The IMD World Competitiveness Center is dedicated to the advancement of knowledge on world competitiveness and offers benchmarking services for countries and companies using the latest data. The Center has pioneered research onhow nations and enterprises compete to lay the foundations for future prosperity.

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The Hinrich-IMD Sustainable Trade Index (STI) measures how effectively 30 major trading economies are prepared for long-term economic growth, environmental protection, and societal development across 72 indicators. The STI 2025 is the index's seventh edition.

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