

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 $[Q1 - (4 \times IQR)]$ or above $[Q3 + (4 \times IQR)]$ 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.