The Global Trade-Sustainability Nexus: The Evolution of Sustainable Trade Index in the Period 2022-2024

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Abstract

Since its beginnings, trade has constituted an important economic activity, serving as a strong engine of change all over the world. Today's scale of global trade is unprecedented in economic history. As more and more countries, low-, middle-income and rich, have designed and implemented ambitious policies to promote sustainability in accordance with the United Nations Sustainable Development Goals, global trade should find solutions to these imbalances and adapt to these policies. The paper aims to briefly define the concept of sustainable trade and to expose the relationship between global trade and sustainability through the analysis of the evolution of the Sustainable Trade Index in the period 2022-2024. In order to accomplish the objectives of the paper, the author employed a qualitative scientific research method. The study enlarges the scientific literature related to the global trade-sustainability complex nexus and shows the increasing importance of sustainable trade at a global level.

Key words: global trade, trade, sustainability, Sustainable Trade Index, Sustainable Development Goals
J.E.L. classification: F1, F19

1. Introduction

Since its beginnings, trade has constituted an important economic activity, serving as a strong engine of change all over the world (Smith, 2008). During its long history, the trade of goods and services bridged not only human beings but also companies, countries and continents. The age of globalization that took shape in the 1990s (Cornescu *et al*, 2004) after the collapse of the communist regime was clearly associated with several important socio-economic achievements such as higher standards of living, trade liberalization and economic growth (Toma, 2005). The global trade contributes to worldwide prosperity because "it increases productivity by expanding the international division of labor... it enables export-led economic growth by providing access to foreign markets... it bolsters economic security by giving firms and households valuable outside options when negative shocks hit" (Georgieva *et al*, 2023, p.10).

Global trade is expected to reach almost US$ 32 trillion (United Nations Conference on Trade and Development, 2024), a higher value than US$ 30.5 trillion in 2023 (World Trade Organization, 2024). In 2023, China was, by far, the leading export country in the world, followed by the United States and Germany (Dywik, 2024) whereas the United States were the leading import country in the world, followed by China and Germany (O'Neill, 2024).

Thus, today's scale of global trade is unprecedented in economic history. It is stated that "trade in goods and services could be boosted, inter alia, by an increased uptake of digital services – including those related to artificial intelligence" (Attinasi *et al*, 2024, p.41) in the current Fourth Industrial Revolution (Toma *et al*, 2018). However, global trade brings both benefits and disadvantages. On the one hand, it allows countries to obtain economic gains through the exploitation of their comparative advantages. On the other hand, global trade leads to the relocation of industries to lower income countries and, therefore, to increasing environmental impacts (Wang *et al*, 2025). As more and more countries, low-, middle-income and rich, have designed and implemented ambitious policies to promote sustainability in accordance with the United Nations

(UN) Sustainable Development Goals (United Nations, 2015), global trade should find solutions to these imbalances and adapt to these policies.

The paper aims to briefly define the concept of sustainable trade and to expose the relationship between global trade and sustainability through the analysis of the evolution of the Sustainable Trade Index (STI) in the period 2022-2024. The remainder of this paper is structured as follows: Section 2 describes the theoretical background. The research methodology is illustrated in Section 3. Section 4 presents the findings. The conclusions are displayed at the end of the paper.

2. Theoretical background

Since the Fall of the Berlin Wall, the spread of the globalization process (Toma, 2013) has led to the rapid expansion of trade at a global level. Global trade, also known as international trade, represents:

- "the purchase and sale of goods and services by companies in different countries" (Heakal, 2024, p.1).
- "economic transactions that are made between countries" (Allais et al, 2024, p.1).
- "an exchange involving a good or service conducted between at least two different countries" (Corporate Finance Institute, 2024, p.1).
- "trade in products, services, etc. between different countries" (Cambridge Dictionary, 2024, p.1).

These definitions emphasize that global trade involves the deployment of economic transactions related to the purchase and/or sale of goods and/or services between countries.

On its turn, the concept of sustainability originated in the Brundtland Report (World Commission on Environment and Development, 1987). Starting from the idea that "a sustainable system is one which survives or persists" (Costanza *et al*, 1995, p.193), sustainability is interpreted in terms of three key dimensions, "which must be in harmony: social, economic and environmental" (Kuhlman *et al*, 2010, p.3438). It is defined as "the persistence over an apparently indefinite future of certain necessary and desired characteristics of both the ecosystem and the human subsystem within" (Hodge, 1997, p.9) or "a dynamic equilibrium in the process of interaction between a population and the carrying capacity of its environment such that the population develops to express its full potential without producing irreversible adverse effects on the carrying capacity of the environment upon which it depends" (Ben-Eli, 2018, p.1340).

As sustainability covers all aspects of human life (e.g., planet, people) it is increasingly applied in any domains, such as agriculture and trade. Last decades witnessed the emergence of a plethora of studies related to the close relationship between global trade and sustainability (Røpke, 1994; Gammage *et al*, 2019; Bertram, 2023; Gilson, 2023; Methmini *et al*, 2024). Global trade cannot "realize its full potential without commitment to environmental stewardship and social development" (Hinrich Foundation, 2024a, p.1). Implementing the sustainability concept in the global trade imposes companies which trade all over the world sound strategies (Toma *et al*, 2013; Toma *et al*, 2015; Toma *et al*, 2016a) based on strategic thinking and planning (Toma *et al*, 2016b; Toma *et al*, 2016c), and competitive and sustainable business models (Tohănean *et al*, 2018; Toma *et al*, 2018: Toma *et al*, 2019) based on lean (Naruo *et al*, 2007; Marinescu *et al*, 2008) and agile management (Toma, 2023), quality management (Toma, 2006; Toma *et al*, 2009), social responsibility (Toma *et al*, 2011; Imbrișcă *et al*, 2020) and corporate citizenship (Toma, 2008a; Marinescu *et al*, 2010), Six Sigma (Toma, 2008b), balanced scorecard (Toma *et al*, 2010) and marketing mix (Catană *et al*, 2021).

At a global level, sustainable trade appears when "the international exchange of goods and services yields positive social, economic and environmental benefits, reflecting the four core criteria of sustainable development:

1. It generates economic value.
2. It reduces poverty and inequality.
3. It regenerates the environmental resource base.
4. It is carried out within an open and accountable system of governance." (Vorley et al, 2002, p.5). In other words, sustainable trade represents „the import, export, or trade of goods and services which actively support the achievement of one or more UN Sustainable Development Goals

(SDGs) without infringing on the achievement of any other SDGs" (International Chamber of Commerce, 2021, p.6). In order to measure this concept, the Hinrich Foundation created the STI in 2016. The index encompasses 72 indicators which are classified into three main pillars, as follows:

- economic (Table no. 1),
- societal (Table no. 2),
- environmental (Table no. 3).

Table no. 1. Economic pillar indicator list

No.	Indicator
1	Consumer price inflation
2	Real gross domestic product (GDP) Growth per capita, % GDP
3	Growth in labor force, %
4	Foreign direct investment, net inflows, % GDP
5	Gross fixed capital formation, % GDP
6	Tariff & non-tariff barriers
7	Trade liberalization
8	Exchange rate stability, parity change from national currency to special drawing rights, 2023/2021
9	Domestic credit to private sector, % of GDP
10	Foreign trade and payments risk
11	Trade costs
12	Monetary policy intervention
13	Export concentration
14	Exports of goods and services
15	Technological innovation
16	Technological infrastructure

Source: (Hinrich Foundation-IMD, 2024b)

Table no. 2. Societal pillar indicator list

No.	Indicator
1	Inequality (Gini coefficient)
2	Educational attainment
3	Labor standards
4	Political stability and absence of violence
5	Goods produced by forced labor or child labor
6	Government response to human trafficking
7	Trade in goods at risk of modern slavery
8	Social mobility, index
9	Life expectancy at birth
10	Uneven economic development
11	Universal Health Coverage Index

Source: (Hinrich Foundation-IMD, 2024b)

Table no. 3. Environmental pillar indicator list

No.	Indicator
1	Air pollution, PM2.5 micrograms per cubic meter
2	Deforestation, index
3	% of wastewater treated
4	Energy intensity, energy consumed for each US$1,000 of GDP in tone of oil equivalent
5	Ecological footprint
6	Renewable energy, %
7	Environmental standards in trade, count
8	Transfer emissions, million tones carbon
9	Share of natural resources in trade, %
10	Carbon

Source: (Hinrich Foundation-IMD, 2024b)

In sum, the relationship between global trade and sustainability represents a topic of interest for both practitioners and researchers, especially due to the fact that achieving UN SDGs have become a major concern for countries, governments, and companies worldwide. Taking into account this important issue, the paper analyses the evolution of the STI in the period 2020-2024 in its fourth part.

3. Research methodology

In order to accomplish the objectives of the paper, the author employed a qualitative scientific research method. In the beginning, he gathered the information from different secondary data sources, such as articles, books, and reports. Then, the author carried on the literature review and analyzed the information. At the end of the research process, he synthesized the information and designed the paper.

4. Findings

The sustainability of trade is measured by the STI which allows the benchmarking of the following 30 economies around the world within the global trade system: New Zealand, United Kingdom, Australia, Singapore, Japan, South Korea, Hong Kong SAR, Canada, Taiwan, United States, Chile, Thailand, Philippines, Vietnam, Malaysia, China, Mexico, Indonesia, Cambodia, Peru, Ecuador, Laos, India, Brunei, Bangladesh, Sri Lanka, Myanmar, Pakistan, Papua New Guinea, Russia. In 2022, the hierarchy was dominated by New Zealand (score 100), a country which vigorously performed in all three dimensions (Table no. 1): first in both societal and environmental pillars, and seventh in the economic pillar (Hinrich Foundation-IMD, 2022). It was followed by United Kingdom (score 94.4) and Hong Kong SAR (score 87.9).

Table no. 1. Top 10 economies in the STI 2022

Country	Overall	Economic pillar	Societal pillar	Environmental pillar
New Zealand	1	7	1	1
United Kingdom	2	5	4	2
Hong Kong SAR	3	1	10	8
Japan	4	9	5	4
Singapore	5	2	9	10
Australia	6	11	3	14
Canada	7	10	2	23
South Korea	8	3	8	16
United States	9	4	7	19
Taiwan	10	6	6	27

Source: (Hinrich Foundation-IMD, 2022)

In 2023, New Zealand (score 100) remained at the top of the ranking, a country which robustly performed in all three dimensions (Table no. 2): first in the environmental pillar, second in the societal pillar, and eighth in the economic pillar (Hinrich Foundation-IMD, 2023). It was followed by United Kingdom (score 96.5) and Singapore (score 94.1).

Table no. 2. Top 10 economies in the STI 2023

Country	Overall	Economic pillar	Societal pillar	Environmental pillar
New Zealand	1	8	2	1
United Kingdom	2	5	4	2
Singapore	3	1	8	5
Hong Kong SAR	4	3	10	7
Australia	5	12	3	10
South Korea	6	2	7	17
Canada	7	9	1	19
Japan	8	10	5	12
United States	9	4	9	15
Taiwan	10	6	6	27

Source: (Hinrich Foundation-IMD, 2023)

In 2023, New Zealand (score 100) kept the first place at the top, a country which performed very well in all three dimensions (Table no. 3): first in both societal and environmental pillars, and seventh in the economic pillar (Hinrich Foundation-IMD, 2024). It was followed by United Kingdom (score 97.7) and Australia (score 87.4).

Table no. 3. Top 10 economies in the STI 2024

Country	Overall	Economic pillar	Societal pillar	Environmental pillar
New Zealand	1	7	1	1
United Kingdom	2	6	4	2
Australia	3	10	3	6
Singapore	4	2	6	10
Japan	5	11	8	4
South Korea	6	3	7	15
Hong Kong SAR	7	1	10	7
Canada	8	8	2	18
Taiwan	9	9	5	17
United States	10	4	9	16

Source: (Hinrich Foundation-IMD, 2024b)

Therefore, the analysis of the evolution of the STI in the period 2022-2024 reveals the absolute domination of New Zealand, followed by United Kingdom. In spite of a lower performance in the economic pillar, New Zealand robustly performed in both societal and environmental pillars.

5. Conclusions

Since the beginnings of the 21st century, sustainability has become a growing concern not only for countries and governments but also for various organizations all over the world. This is why all economic activities, including global trade, have to take into account this important issue.

The study enlarges the scientific literature related to the global trade-sustainability complex relationship. It illustrates the concept of sustainable trade and analyses the evolution of the STI in the period 2022-2024, an index that measures the sustainability of trade by taking into account the UN SDGs. Further studies may expand this research by revealing other features of sustainability and global trade.

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