promoting sustainable global trade

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The Hinrich Foundation Sustainable Trade Index 2016

Produced and written by The Economist Intelligence Unit

Contents

Acknowledgements

The Hinrich Foundation Sustainable Trade Index was devised and constructed by an Economist Intelligence Unit (EIU) research team led by Christopher Clague, John Ferguson and Erik Tollefson. David Line, Jonathan Hopfner and Joseph Chaney wrote this report and Christopher Clague was the editor.

During research for the construction of the Index and in writing this report, the EIU interviewed executives and experts from across the world. Their time and insights are greatly appreciated. The EIU takes sole responsibility for the construction of the Index and the findings of this report.

Interviewees (arranged alphabetically by institution)

- Stephen Groff, vice president operations, **Asian Development Bank**
- Deborah Elms, Executive Director, **Asian Trade Centre**
- Aida Greenbury, managing director/chief of sustainability, **Asia Pulp and Paper Group**
- Simon Evenett, Professor of International Trade and Economic Development and University of St Gallen, Switzerland/Coordinator, **Global Trade Alert**
- David Dodwell, Executive Director, **Hong Kong-APEC Business Council**
- Ted van der Put, programme director, **The Sustainable Trade Initiative (IDH)**
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- Angel Li, manager, corporate social responsibility/Stephen Brown, group head of corporate affairs, **Noble Group**
- Stephen Ng, director of trades, **Orient Overseas Container Line**
- Jeff Schott, Senior Fellow, **Peterson Institute for International Economics**
- Soo Ha Baik, vice president and head of corporate sustainability management office, **Samsung Electronics**
- Lenni Montiel, assistant secretary general for economic development, **United Nations**

The EIU would also like to thank the panel of external expert reviewers who provided feedback on the index and white paper.

Expert panel (arranged alphabetically by institution)

- Jay Menon, Lead Economist, Office of Regional Integration, **Asian Development Bank**
- James Heimowitz, President, **China Institute**
- Clyde Prestowitz, President, **Economic Strategy Institute**
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Executive summary

International trade has become fundamental to economic growth and in doing so, has helped to lift hundreds of millions out of poverty. But it is not without costs and risks. The flow of goods and services across borders can disrupt labour markets, accelerate environmental degradation, and contribute to worsening inequality. With the right policies, these costs can be reduced, if not eliminated, and trade can become more sustainable.

The Hinrich Foundation Sustainable Trade Index was created for the purpose of stimulating meaningful discussion of the full range of considerations that policy makers, business executives, and civil society leaders must take into account when managing and advancing international trade. As a starting point, we define "trade sustainability", or "sustainable trade," as:

> "Participating in the international trading system in a manner that supports the long-term domestic and global goals of economic growth, environmental protection, and strengthening social capital."

This, the inaugural version of the index, measures nineteen countries in Asia and the US across the three recognized pillars of sustainability: economic ("profit"), social ("people"), and environmental ("planet"). The index's key findings include:

- **Singapore tops the overall ranking, followed closely by South Korea.** Trade has been central to Singapore's development and no other country can match the benefits it has delivered to its citizens over the past 50 years across all three pillars.

- **South and Southeast Asia's poorer countries, including Bangladesh, Myanmar and Pakistan, rank at the bottom.** Each of these countries has the potential to trade more sustainably, but are held back by a variety of factors, such as lack of export diversification or a failure to develop human capital. Myanmar, having only recently opened its economy, is in many respects a "blank slate" in this area and is perhaps in a position to learn the most from the index findings.

- **Sustainable trade tracks closely with wealth.** Unsurprisingly, rich countries top the index, middle income countries fall in the middle, and low income countries make up the bottom.

- **A number of countries do over- or underperform relative to income.** Three countries, South Korea (+4), Vietnam (+3), and Cambodia (+3), over-perform relative to where they rank in terms of per capita GDP. **China (-3) is the most notable underperformer**, scoring poorly on the environment, but also the sustainability of its labour force and in educational attainment.

- **The countries scoring best on the economic pillar of the index** trade in a manner that enables them to withstand internal and external shocks and that balance long-term resilience with short-term goals. They have low barriers to trade, a diversified export mix, open current accounts, and invest in technology, among other traits. The Asian Tigers—Singapore, Hong Kong, South Korea and Taiwan—

scored highest on the economic pillar. **Malaysia is the best performer from emerging Asia, tying with Japan for 6th in this category.**

- **The countries scoring best on the social pillar** have lower inequality, high levels of educational attainment, strong labour standards, and are politically stable. South Korea and the US rank at the top, while **the Philippines registers a significant underperformance as a result of its high inequality, poor education, and weak labour standards.**

- **The countries scoring best on the environmental pillar** avoid over-reliance on natural resource exports, limit pollution and have low carbon emissions in trade, and pursue high-environmental standards in international and regional agreements. Not surprisingly, **China and India are both in the bottom quartile** of this pillar, scoring poorly on water and air pollution, in particular.

The key message of the index is that while trade is an indispensable ingredient in economic development, it cannot be sustainably pursued without responsible environmental stewardship and a commitment to fully developing social capital. Countries which come up short on the environmental and social pillar will be unable to continue to trade successfully over the long term, less attractive destinations for critically needed foreign direct investment, and less able to secure funding and support from multilateral development agencies.

Although significant effort has been made on the part of the Hinrich Foundation and the Economist Intelligence Unit to ensure that the index captures all aspects of trade sustainability in a comprehensive and impartial manner, we welcome feedback to help improve future iterations.

Questions and comments can be sent to index@hinrichfoundation.com. The index workbook and white paper are available for download at hinrichfoundation.com/trade-research/sustainable-trade-index

Introduction: What is the Asia Sustainable Trade Index?

That international trade is fundamental to economic growth is well established. Since 1990, when the pace of globalisation began to accelerate, the number of people living in extreme poverty (on less than US$1.25 per day) has fallen by over one billion. As the WTO noted in a 2015 report, "Without the growing participation of developing countries in international trade, and sustained efforts to lower barriers to the integration of markets, it is hard to see how this reduction could have been achieved."[1]

As such, participating in the international trading system has long been a policy priority for national governments and private enterprises. But such participation has not always been pursued sustainably—for the countries themselves or the global economy. For instance, the prospect of earning foreign exchange income through promoting exports in a particular sector (or commodity) might be tempting, but a lack of diversification could increase the vulnerability of the economy to shocks, or might exclude many sectors of society, leading to extreme inequality. If it is pursued at the expense of investment in education, or without the proper safeguards for workers and their families, concentrating investment into export industries may undermine the broader development of human or social capital. It might also impose debilitating environmental costs on current and future generations.

Meanwhile, opening borders to international trade carries political risks: foreign competition might threaten domestic companies and jobs, meaning protectionist measures (in the form of tariff and non-tariff barriers) are always a temptation. Other vulnerabilities, including weak legal institutions or high levels of corruption, are liable to undermine a country's ability to continue to benefit from trade.

It is therefore important to measure whether a country is participating in the international trading system in a sustainable manner, and whether it will be able to continue doing so. This requires taking many more factors into account than simply whether trade has boosted gross domestic product (the limitations of which as a measure of prosperity have been debated with increasing intensity in recent years). To be sure, economic growth is crucial to sustainability, but, as the UN's Bruntland Commission noted in *Our Common Future*, its landmark 1987 report on sustainable development,[2] social equity and environmental protection must also be considered. Together, these three pillars—"profit, people and planet"—constitute the now broadly accepted triple bottom line for sustainability reporting.

Against this background, The Hinrich Foundation, a Hong Kong-based philanthropic institution, commissioned The Economist Intelligence Unit (EIU) to build an Index to measure the capacity of various countries to participate in the international trading system in a manner that supports the long-term domestic and global goals of economic growth, environmental protection, and strengthened social capital. The Index includes a number of indicators, grouped in these three pillars, that together measure whether a country is engaged in sustainable trade; i.e. trade that promotes inclusive growth for all—including future generations—within and beyond a country's borders.

This report discusses the findings of the first edition of the Index, which focuses on Asia (including

Greater China, the ten members of ASEAN, South Asia's four largest economies, and Japan and South Korea), using the US as a global benchmark. Asia seemed the best region to focus on for several reasons. One is its size; it includes the world's two most populous countries, and two of the world's top three economies. Another is that Asia has proved beyond a doubt the power of trade in raising people out of poverty—contributing far more than its fair share of the billion-plus people in the past generation whose incomes have risen above the poverty line.[3]

As such, the continued participation of Asia's economies in the global trading system will be crucial to achieve the Sustainable Development Goals (SDGs), set out by the UN in September 2015.[4] Realising these goals requires both the active support and participation of the private sector (which drives the bulk of global trading activity) and policy coherence at the national and international level.[5]

"While trade is an important means of implementation for the 2030 Agenda [for Sustainable Development], it needs to be harnessed effectively and complemented by appropriate supporting policies, infrastructure and education for workforces," says Lenni Montiel, UN Assistant Secretary General for Economic Development. "From both economic theory and experience, we have learned that opening up to trade generates winners and losers... It is therefore essential that policies are put in place to facilitate the adjustment of different groups to trade liberalisation. Such policies include strengthening social safety nets—for example unemployment benefit schemes—enhancing skills and human capital development through education, and training and the promotion of labour mobility."

Tracking the sustainability of countries' trade practices is an important means of helping benchmark this policy coherence—and the achievability of the SDGs. The aim in doing so is to assist governments, multilateral institutions and private-sector investors in their decision-making, helping them identify and promote sustainable trade practices that will contribute to inclusive economic growth across the region.

Index construction

Establishing which data points best reveal whether or not a country is trading sustainably is no simple task. The economic pillar ("profit") has an abundance of relevant data, so measuring issues such as the presence of tariff and non-tariff barriers, the diversity of a country's exports (and export markets), its openness to foreign investment, and the quality of its technology and infrastructure—all crucial to encouraging economic growth via international trade—is relatively straightforward. The social pillar ("people") is less data-rich but includes factors aligned to the concept of promoting human capital, such as levels of inequality and education, political stability, and labour standards. The environmental pillar ("planet") measures the externalities that arise from economic growth specific to participation in the global trading system, such as exports of scarce natural resources, pollution, and environmental standards and carbon emissions in trade.

In choosing data points for the Index, the EIU conducted an extensive review of academic literature and consulted numerous experts, selecting indicators on the principles of relevance and parsimony, and also whether they could be justifiably quantified.[6] Many are uncontroversial: reliance on exports of non-renewable natural resources, for instance, is plainly unsustainable. If a country hopes to continue trading in the global economic system, it must either think of a way to preserve its indigenous

resources, or develop other sectors and products to remain competitive. The inclusion of others, such as the impact of exchange rate volatility on trade (for which academic evidence is mixed) required the considered judgment of EIU economists.

Crucially, allocating *weights* to each pillar also required judgment. Inevitably there is often a trade-off between short-term economic gains and potentially longer-term environmental or social costs, particularly at different levels of economic development. As discussions over global efforts to combat climate change have shown, poorer countries may feel that asking them to bear the same burden as rich countries in tackling environmental degradation is unfair and impractical: they argue that they must have the opportunity to grow richer before they can act to mitigate the potentially negative impacts of doing so.

Allocating weights on this basis needs to take country-specific political circumstances into account. Given the difficulty of doing so objectively, the lack of consensus in academic literature on the importance of one pillar over another, and for reasons of comparability, the EIU opted not to apply differential weightings for the base results discussed in this paper: "profit", "people" and "planet", therefore each have a weighting of 33.3% (although naturally, Index scores are analysed for groups of countries with comparable levels of per-capita income). However, in recognition of the policy trade-off facing poorer countries, the EIU also prepared an alternative set of weightings that allocate increasingly greater weight to the economic pillar, and correspondingly lesser weights to the social and environmental pillars, the less developed an economy is.[7]

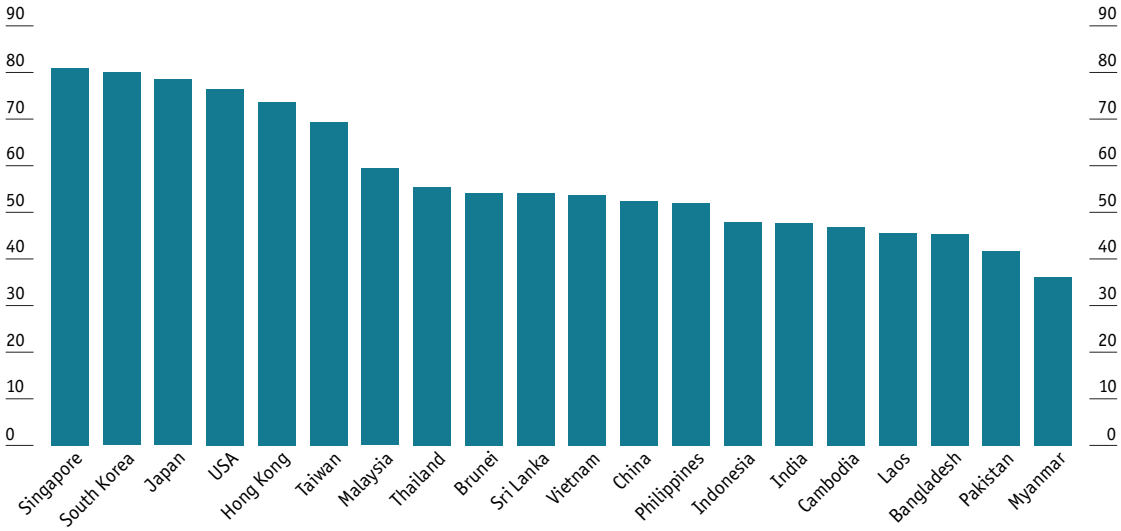
The overall results of the Hinrich Foundation Sustainable Trade Index according to these "neutral" and "adjusted" weight sets are discussed in the first chapter. Subsequent chapters then consider factors related to each of the three pillars that together reveal whether a country is participating in the international trading system in a sustainable manner.

Chapter 1: Overall results

Top performers

Asia's richest economies come at the top of the Hinrich Foundation Sustainable Trade Index. Singapore is first, followed by South Korea and Japan—all of which rank ahead of the US, which is included as a global benchmark and which comes in fourth place. Hong Kong and Taiwan round out the top six, a group that stands out as significantly ahead of those placed from 7th-20th (Figure 1.1)

Figure 1.1: Hinrich Sustainable Trade Index, overall scores



Source: The Economist Intelligence Unit.

Those countries in Asia that are most able to participate in the international trading system in a manner that supports the long-term domestic and global goals of economic growth, environmental protection, and strengthened social capital are also those that have proven the success of the trade-focused economic development model. In the latter decades of the twentieth century these countries stood out for their rapid industrialisation and the increase in wealth and living standards enjoyed by their populations. As they grew wealthier they also came to prioritise other aspects of sustainability, in particular higher labour standards and the need for better protection of the environment.

This is best exemplified by Singapore, which ranks first. Although it has some unique characteristics that make it predisposed to benefit from trade (in particular its size and geographic location), no other country can match it in terms of the benefits it has delivered in just 50 years through targeted economic policy and careful stewardship of its human and natural capital. Trade has been central to its development, exemplified by its history as an entrepôt and its participation in 20 separate free trade agreements (some under the auspices of ASEAN but many pursued independently).

To be sure, it does not score well on every indicator: rising levels of inequality have attracted

increasing criticism, and it ranks only seventh in terms of environmental standards in trade—an issue that is biting as its air quality suffers from actions taken by its neighbours and trading partners, Indonesia in particular. But its successful balancing of all three pillars of sustainability means it is likely to continue to be Asia's foremost example of trade-led economic development for many years to come.

South Korea also scores well, ranking just ahead of Japan, a key competitor in many sectors of merchandise trade. South Korea's recent economic history, in particular its experience during the Asian Financial Crisis of 1997-98, shows the potential vulnerability of the development model it pursued. It scores relatively poorly, even now, in terms of exchange rate volatility, while its comparatively undiversified export mix (in terms of products and markets) is another potential vulnerability. Nonetheless, its recovery from the crisis and the targeted development of key sectors, particularly heavy industry and consumer electronics, means it has continued to deliver almost unparalleled income gains for its population on a broadly equitable basis, and is likely to continue to be able to do so.

Malaysia, in seventh place, stands out for being the best-performing emerging economy in the Index, just ahead of Thailand. Thailand and Malaysia have experienced problems in recent months, not least due to political instability and as tighter monetary policy in the US has put developing-market currencies under pressure, but this does not change the comparative sustainability of their trading systems. Both have seen steady increases in incomes in recent decades as they have built out the infrastructure needed to support trade—particularly information technology, transport and logistics—and have participated in the liberalisation of merchandise trade across the region. This, together with improving tertiary education, has led to increases in productivity and a move "up the value chain"—from low-end intermediate and natural resources exports to value-added technology and services—that ASEAN's poorer economies are hoping to emulate.

Bottom of the Index

At the other end of the scale, South and South-East Asia's poorer economies are least able to participate sustainably in international trade. Bangladesh, Pakistan and Myanmar make up the bottom three countries in the Index. Their rankings do not necessarily impugn these countries' development policies or deny their comparative advantages, especially in certain sectors, but they do raise questions about whether—given current conditions—they can continue to contribute to the common goals of economic growth and strengthened human and natural capital.

Bangladesh is a good example: it has developed one of the largest textile industries in the world, with ready-made garments (RMG) worth nearly 80% of the county's merchandise exports. This is partly down to preferential trade policies accorded to it as a least-developed nation—Bangladesh is a case study in the "aid versus trade" debate.[8] But while the success of the sector has raised incomes, it has not (yet) led to a rapid advance up the export value chain, and the country faces problems in terms of the human-development and environmental aspects of sustainability (discussed in the relevant chapters below). Pakistan, meanwhile, faces similar problems but without the comparative advantages enjoyed by Bangladesh's RMG sector.

Myanmar's position at the foot of the Index is to be expected, given that its economy only opened up recently. While the scale of the challenge in all spheres of sustainability is immense, in one sense the "blank slate" nature of its development means it is in a good position to adopt best practices and emulate its wealthier neighbours in a bid to maximise the benefits from the international trading system. Myanmar's bid to develop sustainable trade policy is also examined in more detail in subsequent chapters.

Box: Level of development and adjusted weightings

The link between income and performance in the Index is unsurprising at one level: success breeds success, and the richer populations become, the more they will demand that the "softer" aspects of sustainability accompany economic growth. Investment, too, will gravitate towards more prosperous countries that have a track record of protecting investors' interests—including their reputations, which increasingly depend on robust sustainability criteria.

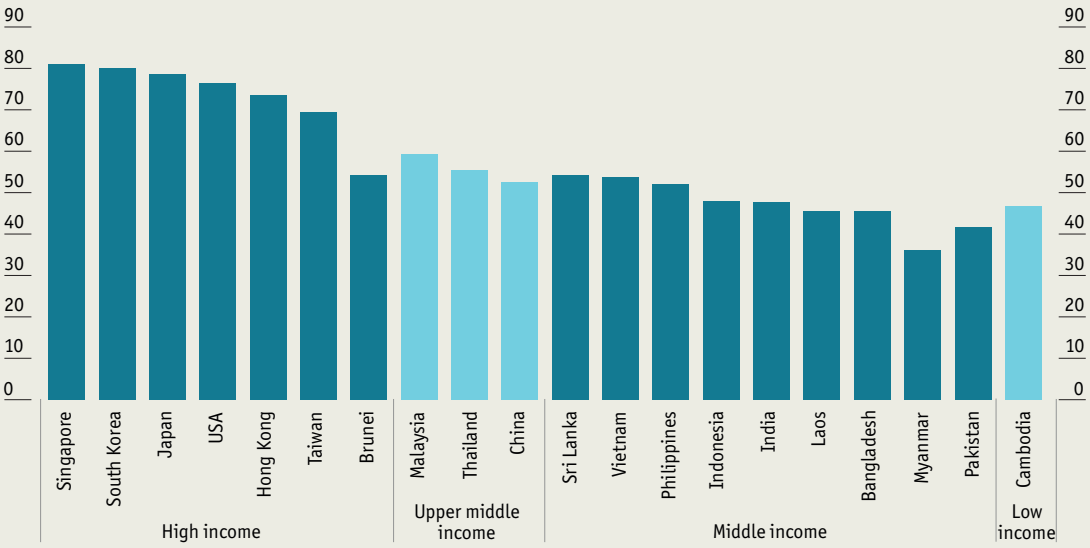
"If there's not an investment case for companies or for financial institutions in sustainable supply chains because there are risks in the social and/or regulatory framework, then those investments will not happen," says Ted van der Put, programme director at the Netherlands-based Sustainable Trade Initiative (IDH).

At the same time, it is to be expected that poorer countries' first foot on the ladder of trade-led development is to leverage either their abundant, cheap labour or their natural resources, or both. While neither of these strategies are sustainable in the long-term without attendant human and environmental safeguards, trading countries cannot run before they can walk, and it is unrealistic to hold least developed countries to the same standards as their richer neighbours.

ASEAN, for instance, "recognises that the low-income members need more time than the upper-middle income members to open up to the ASEAN Economic Community 2015," notes Stephen Groff, vice president for operations at the Asian Development Bank. "But the issue is with any liberalisation is that there will be winners and losers. In ASEAN, our estimation is that everyone benefits at the end of the day, but some sectors will inevitably lose out a bit. So without support for a transition in those sectors you can have unanticipated economic shocks and social stability challenges that might emerge."

Consequently, it makes sense to compare countries in the Index in groups according to level of development (defined using World Bank definitions based on per-capita GDP, as in Figure 1.2), and also by ascertaining whether or not countries over- or underperform relative to their income (Figure 1.3).

Figure 1.2: Overall results by level of development



Source: The Economist Intelligence Unit.

Figure 1.3: Performance vs income

Country	Per-capita GDP 2014 (nominal US$)	A: GDP rank	B: Index rank	Over/under-performance (A-B)
Singapore	56,287	1	1	0
South Korea	28,166	6	2	4
Japan	36,326	5	3	2
USA	54,412	2	4	-2
Hong Kong	40,240	4	5	-1
Taiwan	22,605	7	6	1
Malaysia	11,307	8	7	1
Thailand	6,020	10	8	2
Brunei	40,724	3	9	-6
Sri Lanka	3,675	11	9	2
Vietnam	2,010	14	11	3
China	7,690	9	12	-3
Philippines	2,873	13	13	0
Indonesia	3,508	12	14	-2
India	1,634	16	15	1
Cambodia	1,084	19	16	3
Laos	1,709	15	17	-2
Bangladesh	1,095	18	18	0
Pakistan	1,320	17	19	-2
Myanmar	811	20	20	0

Source: The Economist Intelligence Unit.

On this basis, only four countries actually perform as their levels of income predict—Singapore, the Philippines, Bangladesh and Myanmar. South Korea is the most prominent overachiever, four places above the level suggested by its wealth. Vietnam and Cambodia are also notable for doing better than their incomes would suggest. While both score only modestly in terms of the openness of their economy to trade (as poorer members of ASEAN, they benefit from the bloc's market liberalisation but enjoy longer schedules to implement tariff reduction), they score better than their peers in terms of export diversity and the comparatively high environmental standards they have managed to maintain in pursuit of growth.

In terms of trade infrastructure, Vietnam has also benefited from investment from Asia's richer countries—South Korea and Japan in particular—and is now a crucial part of the increasingly complex manufacturing supply chains their biggest firms operate.

"The Vietnamese were not afraid [of foreign investment]. They were very open; they saw what happened in China," says Steve Parker, an economist at Nathan Associates now based in Yangon, who previously advised Vietnam on trade policy. As soon as the US normalised trade relations with Vietnam in 2001, "except for the IT sector, in between one and five or six years they had opened up all other sectors—including insurance and banking, bringing in [international] standards. Vietnam is a poster child for an Asian country with a large labour force; it had a population bubble—two million people coming into the workforce every year; jobs were needed for social and economic stability. Vietnamese people took advantage of that."

Relative to income, Brunei is the worst underperformer: as a rich, oil-producing microstate in which

wealth accumulation has not driven the same progress in human development indicators seen in Asia's other advanced economies, it is an anomaly. But the second-worst underachiever is China. This is significant because of its preponderant power in the global economy and its position as the world's biggest trading power. China scores poorly in the economic pillar in terms of trade costs (which are high due to corruption and a weak legal system) and the labour force (which will shrink as the population ages); in the social pillar in terms of educational attainment; and in the environmental pillar in terms of air and water pollution and carbon emissions in trade.

This is not to deny the incredible wealth-creation and poverty-reduction success of China's investment-led, manufacturing-for-export model. But it does raise questions about the ongoing sustainability of this model—something that China's leaders have openly acknowledged as they have sought to rebalance the economy from investment-led- to consumption-led growth. They have also begun to prioritise fixing the environmental problems that have accompanied its rapid growth. The 13th Five-Year Plan, an outline of which was released in November 2015, includes goals to develop "green" finance, control commercial logging and water use and create a real-time online system for monitoring the environment.[9]

Adjusted weightings

Less-developed countries are justified in prioritising economic growth ahead of environmental protection or building social capital if this ultimately promotes long-term sustainable development (and if, having reached higher levels of development, the importance of these issues is reconsidered). International agreements—such as at the WTO, or to combat climate change—routinely acknowledge this.[10] Similarly, for policymakers, there is an inherent tension between short-term realities and sustainability benefits that may take years to materialise.

"All too often political tenures are short in nature and these more sustainable approaches require a longer term perspective. In the case of longer-term investments today that might enhance the sustainability of a policy, the incumbent governments don't necessarily reap the benefits and may very well bear the costs," notes Mr Groff. "Decisions around using coal are a prime example. In some cases there aren't many alternatives; where there are, they can be more costly in the immediate term. The benefits of cleaner alternatives may not be felt for a generation or so. Political leaders will often make decisions without factoring in the long-term costs of greenhouse gas emissions."

Regardless of whether politicians can be persuaded to act in the interests of future generations, it is important to recognise the realities of policymaking at different levels of economic development. To take these trade-offs into account, another way to interpret the Index is to adjust weightings for each pillar

Figure 1.4: Neutral and adjusted weightings (%)

Neutral weightings (default)			
Income level	**Economic pillar**	**Social pillar**	**Environmental pillar**
All countries	33.3	33.3	33.3
Adjusted weightings			
Income level	**Economic pillar**	**Social pillar**	**Environmental pillar**
LDCs	60.0	26.7	13.3
Low income	50.0	33.3	16.7
Lower middle income	40.0	40.0	20.0
Upper income	33.3	33.3	33.3

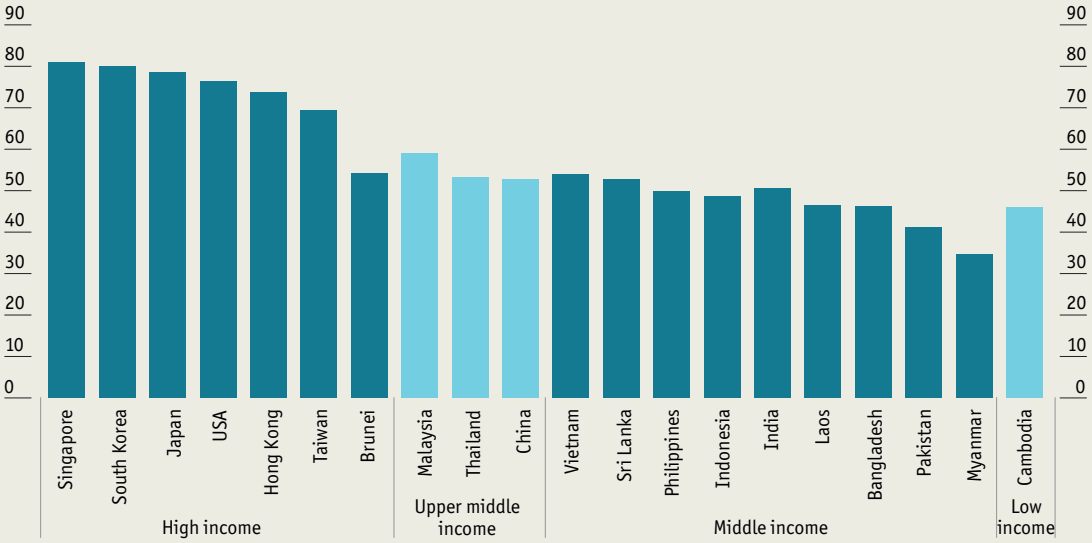
Source: The Economist Intelligence Unit.

Figure 1.5: Changes in rank

Country	Neutral rank	Adjusted rank	Movement in rank
Singapore	1	1	
South Korea	2	2	
Japan	3	3	
USA	4	4	
Hong Kong	5	5	
Taiwan	6	6	
Malaysia	7	7	
Thailand	8	10	-2
Brunei	9	8	1
Sri Lanka	9	11	-2
Vietnam	11	9	2
China	12	12	
Philippines	13	14	-1
Indonesia	14	15	-1
India	15	13	2
Cambodia	16	18	-2
Laos	17	16	1
Bangladesh	18	17	1
Pakistan	19	19	
Myanmar	20	20	

Source: The Economist Intelligence Unit.

Figure 1.6: Overall results with adjusted weightings grouped by income band



Source: The Economist Intelligence Unit.

according to a country's per-capita GDP (Figures 1.4-1.6). These results may be interpreted as a more forward-looking analysis of sustainable trade, particularly since any success poorer countries record in future years in generating economic growth through trade, will enable them to move up the Index faster than richer countries that achieve similar results.

Analysis of the results using adjusted-weightings shows that there is little change at the top and bottom of the Index. This is to be expected in that for rich countries, all three pillars are still accorded the same weights; their success in incorporating environmental and social development factors of sustainability are duly recognised. (Brunei moves upwards but only because countries around it have moved, not because of a change in its scoring). And for Pakistan and Myanmar, their relative poverty and lack of economic development penalises them under the adjusted weightings, given they have (so far) little to show on that score from trade-related policy and investment, and remain vulnerable to exogenous shocks—not surprising in Myanmar's case; and more worryingly for Pakistan.

Upward movement among the other middle- and low-income countries reflects their progress in promoting economic growth through trade: Vietnam and India are the two largest success stories in this regard. The former, as mentioned above, is well-positioned on the technology manufacturing supply chain. The latter would like to be: a prime goal of Prime Minister Narendra Modi's is to raise the share of manufacturing in the economy from the current 15% to 25-30%. Much of this would be for export: the limitations of the protected-market, import-substitution model were exposed by sputtering economic growth even after the supposed "big bang" market reforms of the early 1990s.

India, like many other of the poorest countries in Asia, wants to tap into the considerable benefits on offer from sustainable trade. To do so, it will have to balance the potential economic gains with longer-term social and environmental development goals. The following chapters consider each of these elements of sustainability, how they are incorporated into the Index, and which countries have been most and least adept so far in promoting them.

The index workbook is available at hinrichfoundation.com/trade-research/sustainable-trade-index

Chapter 2: Economic pillar

It goes without saying that trade is sustainable only when it enriches a country and its inhabitants, and when policies and institutions are in place that enable people to be enriched through trade. But it also requires that an economy is able to withstand internal and external shocks, and that policy balances long-term resilience with short-term gains. Consequently, this pillar includes indicators that both reflect the ability to trade, such as current account openness, infrastructure, tariffs and technology, and also factors that indicate resilience, such as exchange rate stability and whether or not a country's export mix is suitably diversified—both in terms of markets and products.

Economic pillar results

Singapore tops this pillar (as it does the overall Index), followed by Hong Kong in second place. It is perhaps not surprising that these two—competitors as Asia's pre-eminent entrepôts—are the most economically sustainable trading economies in the region. Singapore's total trade in 2014 was over three times the country's GDP; for Hong Kong it was more than four times GDP.[11] The ports of each compete to be the world's biggest; each boasts state-of-the-art infrastructure and logistics. Each also has a world-class legal system, low corruption and a deep, stable financial sector.

Figure 2.1: Economic pillar results

Rank	Country	Score/100
1	Singapore	76.5
2	Hong Kong	70.9
3	South Korea	68.3
4	Taiwan	67.2
5	USA	66.1
=6	Malaysia	64.8
=6	Japan	64.8
8	China	64.2
9	Philippines	57.1
10	Vietnam	56.4
11	India	56.0
12	Thailand	55.0
13	Sri Lanka	54.5
14	Indonesia	53.7
15	Bangladesh	50.4
16	Laos	49.7
17	Cambodia	48.2
18	Pakistan	42.4
19	Brunei	38.5
20	Myanmar	35.1

Source: The Economist Intelligence Unit.

The nature of the economies of Singapore and Hong Kong and the pre-eminence of trade in their raisons d'être—Hong Kong's as a gateway to China; Singapore's as a hub on a vital maritime trading route between continents—make both outliers to some degree. Yet, other economies near the top of this pillar illustrate the historical success of the East Asian trade-focused development model. South Korea and Taiwan, in third and fourth position in this pillar, are both former "tiger" economies for which carefully directed economic policy, supporting export industries in targeted sectors, led to increasing wealth. In this they historically followed Japan, which is in joint sixth place in this pillar of the Index.

It is not surprising that rich economies come top. (The only high-income country outside the top six is Brunei which, in 19th, is an outlier microstate for which oil and minerals constitute over 92%

of exports). Not only have they built successful economies on the back of their ability to trade, but the sustainability of trade also correlates closely to wealth, since the richer countries are, the more they tend to import. Of course, imports enrich a country's trade partners rather than the domestic economy, but since the Index in part measures the contribution of each country to the sustainability of global trade, it includes a measure capturing per-capita income growth.

The markets leading the economic pillar have also successfully scaled the trade value chain. While manufacturing still accounts for around a quarter of Singapore's economy, the government is focused on moving beyond it by fostering research and development in emerging industries like biotechnology and mobile applications, says Deborah Elms, executive director of the Singapore-based Asian Trade Centre and a senior fellow in the Singapore Ministry of Trade and Industry's Trade Academy. "[The government] is willing to spend huge amounts of money and involve special agencies to figure out how to attract new companies that might create innovative products… There's a lot of focus on developing an ecosystem that they consider to be the new economy."

Asia's least-developed economies (such as Myanmar, Pakistan, Cambodia and Laos) may be among the fastest-growing in terms of income, but in other respects their ranking in this pillar reflects their lower level of economic development. Myanmar is bottom, which may be expected given its very recent decision to open its economy—and the bottom-up task it faces in building out its infrastructure. India is the only least-developed economy not clustered at the bottom of this pillar, in 11th place, illustrating its advantages in terms of recent capital investment, its youthful demographics and the diversity of its export markets.

Mr van der Put of the IDH notes developing economies are typically contending with weak foundations, especially in rural areas. "Rural development without clarity on land tenure for instance, is a real stumbling block. How can anyone invest in a more professional production system in agriculture if it's unclear who owns the land and what will happen with the land? So the basics for green growth from a government perspective are to make sure that the land title is arranged and that some of the basics of spatial planning are in place to reduce the investment risks."

Modern portfolio theory proves that diversifying reduces risk, and this is true for trade as much as investing. Research by the UNDP in 2011 into the aftermath of the global financial crisis showed the impact of the shock depended on a country's export concentration. Collectively, Asia, with a panoply of trading partners, lost 18% of trading revenues in the year after the crisis; while Africa, which has a much more limited range of trade partners, lost 32%. Separate research cited by the UNDP suggests that export diversification in terms of products also raises productivity—which in turn benefits economic growth.[12]

In the Index, both concepts are captured: India has the region's most diversified markets (where the average proportion of exports to its top four trade partners is just 8% of the total) and Brunei the least. Brunei is also most vulnerable owing to the concentration of products in its exports, while Vietnam has the most diversified portfolio on this score. Cautionary tales regarding overdependence on a single export product abound in the region; Pakistan, for example, has seen much of its textile industry migrate to Bangladesh in recent years as companies moved to take advantage of the latter's cheaper labour and tax-free access to more global markets.

Tariffs and trade costs

The sustainability of trade depends on a country building an enabling environment for it to flourish. Costs and impediments to trade come in many forms, of which the most obvious—tariffs—have been steadily cut through bilateral and regional trade agreements. But plenty of less obvious barriers to trade still exist and, according to WTO/OECD research, are a major factor behind why some developing countries grow faster than others.[13] The most important such costs include transport and network infrastructure, border procedures, non-tariff barriers and the availability of trade finance.

Given the importance of tariff and non-tariff barriers to, these are captured separately in the Index from other trade costs, in the form of a business environment ranking calculated by the EIU. Scored on a scale of 1-5, this captures issues such as formal levies on imports as well as oblique barriers to trade such as quotas, licensing and import inspection. Only two countries in Asia—Singapore and Hong Kong—receive the top score of 5. South Asia—specifically Bangladesh, India and Pakistan—fares poorly, scoring 2 out of 5 (Sri Lanka scores 3).

Trade barriers tend to be concentrated in developing markets still largely dependent on labour-intensive industries like agriculture and apparel—and in some cases, the reluctance to dismantle them is understandable, says Simon Evenett, professor of international trade and economic development at the University of St Gallen, Switzerland, and co-director for the Centre for Economic Policy Research. "Especially [in industries] with less-skilled workers, you can imagine some people arguing that you should go slower on liberalising those type of sectors to give the employees the chance to adjust, or at least prepare for the increased import competition."

However, often the maintenance of hurdles to trade has as much to do with vested interests than concerns about workers' wellbeing, says IDH's Mr van der Put. "In many developing countries the private sector elite is much stronger, much more powerful and has much more resources than the government. So often local government can be hesitant with regulation that can harm their local sector players."

As efforts to establish a global agreement on tariff reduction faltered, Asian countries moved with alacrity to seal bilateral and regional deals that have done much to lower formal tariff barriers between signatories. Though the quality and significance of some of these has sometimes been questioned, the cumulative effect has been to cement Asia's position as central to global trade and supply chains, in tandem with China's rise as a manufacturing and exporting superpower.

ASEAN members in particular have benefited from the bloc's internal commitment to free trade, and the completion of trade deals with the region's three largest economies (China, Japan and South Korea). From December 2015 the establishment of the ASEAN Economic Community (AEC), an ambitious plan to form a common market and eliminate barriers to internal trade in goods and services, as well as investment and labour flows, should further bolster their advantage in this area.

Several ASEAN countries score better in the economic pillar of the Index than their incomes indicate. Malaysia, for example, is in equal sixth place with Japan and is the highest-placed middle-income country. This may come as a surprise given the troubles it has faced in recent months—as its currency has weakened and as the government has faced various scandals. But such factors

don't change the underlying economic sustainability of its trading environment. It scores well on a number of indicators, including the extent it has cut tariff and non-tariff barriers, its technological infrastructure and—perhaps counter-intuitively—its export concentration. Though petroleum exports are important, fuels and mining products contributed just 25% of its merchandise exports in 2014, compared to 61% for manufactured goods.

In Indonesia, by comparison, which is the bottom-ranked low-income country in the economic pillar (at 14th), fuels and mining products comprised 34% of exports in 2014 and manufactured goods 40%. Indonesia also suffers in comparison in terms of FDI and technological innovation (discussed below). This could be a result of the uncertainty over the investment environment after the government's decision in 2014 to ban the export of unprocessed minerals. Though this may have been a step taken with one eye on the long-term sustainability of the country's higher-value-added processing industry, it came at the expense of investment (and hence trade receipts) in a key sector for the economy.

In general, though, ASEAN nations have done much to reduce trade costs as well as explicit tariffs. Indeed, trade within East Asia and the Pacific is notably more efficient than other regions, particularly for manufacturing. The UNESCAP-World Bank trade costs database shows such costs were just 84% of average trade costs in 2010—compared to 120% for manufacturing trade within Sub-Saharan Africa, and 94% in even Europe and Central Asia. South Asia, though, fares much more poorly, with such costs 117% of the average—and 116% for trade between that region and East Asia, suggesting South Asia was much less able to benefit from rising intra-Asian trade.[14] The reduction of such costs is vital for South Asian countries to become more sustainable traders (as noted by Narendra Modi, India's prime minister, who is seeking to emulate China's success by bolstering India's manufacturing-for-export capacity).

In the Index, trade costs (other than tariffs and non-tariff barriers) are captured in a composite indicator that measures the performance of infrastructure and logistics, and also levels of corruption and quality of the legal system (Figure 2.2). The importance of the quality of national institutions—i.e. those bodies that lay down the rules for conducting business, as well as the procedures and guidelines for economic transactions—to sustainable trade has been the subject of increasing research in recent years. Problems with these have the potential to greatly disrupt economic activity generated through trade, especially as supply chains grow

Figure 2.2: Trade costs

Rank	Country	Score/100
1	Singapore	86.3
2	USA	79.3
3	Hong Kong	74.0
4	Japan	71.9
5	South Korea	69.0
6	Taiwan	66.7
7	Malaysia	59.9
8	Sri Lanka	44.8
9	Thailand	43.3
10	India	40.1
11	China	34.0
12	Vietnam	33.1
13	Indonesia	33.0
14	Philippines	32.9
15	Pakistan	30.9
16	Bangladesh	29.5
17	Cambodia	20.7
18	Brunei	19.5
19	Laos	15.8
20	Myanmar	13.8

Source: EIU Business Environment Rankings composite score

more complex. For instance, research in 2007 found that countries with a high degree of contract enforcement had a comparative advantage in complicated goods and services, which require many more detailed contracts between intermediaries and suppliers to produce and trade.[15] Higher levels of corruption also have a negative correlation with the import and export share of GDP.[16]

Corruption again is often rooted in the imbalance of power between government and corporate interests, particularly in developing markets, says Mr van der Put of IDH. "Often local government… can be part of the informal and illegal economy because corruption is part of it. The system is maintained by ruling elites, who are not always fully on board with sustainability issues. As long as that stays the case and governments don't focus on international trade, only the local, powerful private sector players, there is a threat that they won't act in the right way."

Currency regimes and policy choices

The sustainability of trade requires that policies taken by one country do not impoverish another. Especially when times are tough, competing exporters may be tempted into "beggar thy neighbour" currency devaluations to improve their competitiveness. The issue is particularly heated for Asia, given China's prominence as the world's largest manufacturer and the perception among some of its trade partners—notably the US—that its success is due in part to official efforts to prevent currency appreciation. Competition between Japan and Korea over export share has also often boiled over into accusations that either side has used monetary policy to weaken their currency.[17]

This raises the question of which type of currency regime, and economic policy choices more generally, promote sustainable trade. The concept of "fair value" of a currency is virtually impossible to quantify and accusations of manipulation are too politically charged to enforce, as negotiators to ambitious trade agreements like the recently signed Trans Pacific Partnership (TPP) have found.[18] Even from the point of view of exporters, a weaker currency may boost earnings from overseas but—as Japanese companies found in recent years after aggressive monetary policy greatly weakened the value of the yen—make imports much more expensive.[19] Although a country can choose a nominal exchange rate to fix at, it cannot control its real exchange rate. In economic theory, it is the real, or price-adjusted, exchange rate that matters for trade.

Whether a fixed, managed or floating exchange rate (examples of which are found in various countries in the Index) promotes economic growth through trade is also unclear. Research by the IMF into exchange rate regimes found that pegs might help drive trade between two countries with connected currencies, but this ignores the fact that trade might be diverted from other countries outside the arrangement. In addition, pegged regimes are more susceptible to currency and financial crises—when, at the risk of a potentially damaging devaluation or loss of credibility, authorities are obliged to defend the peg.[20]

That said, other research has shown that the volatility of exchange rates is negatively correlated with trade—albeit with many conditions.[21] One condition is whether or not hedging instruments are available, the use of which by firms with foreign currency exposure mitigates the impact of exchange rate fluctuations.[22] Consequently, while it does not consider "manipulation" or specific currency regime, the economic pillar of the Index includes measures of both exchange rate volatility and

financial sector depth (using a proxy indicator of private sector credit as a percentage of GDP). On the latter point, the richer economies—Hong Kong, Japan, and the US—fare the best, while Asia's developing markets remain vulnerable to external financial shocks. These shocks can be particularly devastating for private enterprises. The Malaysian ringgit's plunge against the dollar in 2015 hit companies with high exposure to foreign borrowings, and was blamed by the likes of low-cost carrier AirAsia and hospital operator IHH for pushing earnings into the red.

The issue of such vulnerability, and what steps countries might take to best protect themselves against it, is also acute in Asia, mostly owing to the debilitating financial crisis that struck the region in 1997-98. The orthodoxy at the time was that controls on a country's capital account were detrimental to attracting foreign direct investment (more on which below) and economic development in general. Yet, large foreign-currency debts rapidly became unserviceable when, with the prospect of rising interest rates in Western markets and greater global economic headwinds, foreign capital flight caused rapid currency devaluations in many developing Asian economies.

With scarce foreign exchange reserves, some countries resorted to desperate measures—South Korean housewives queued up to donate jewellery in a campaign to bolster national gold reserves, for instance[23]—while others, such as Malaysia, imposed capital controls. The most severely affected (Indonesia, South Korea and Thailand) were bailed out by the International Monetary Fund, which came under increasing criticism for the severity and inflexibility of its conditional support.

The link between open capital accounts and economic resilience has far less support now than it did at the time of the crisis: the IMF later admitted that Malaysia's controls, which at the time it termed "a step back", were instead a "stability anchor".[24] Moreover, the rise of China as the world's biggest trader—a feat achieved while keeping close control over flows of capital into and out of its borders—belies arguments that open capital accounts are necessary for sustainable trade and economic growth. Academic research generally supports this view.[25] Hence, the economic pillar of the Index does not consider capital account openness (although naturally it does include a measure of current account openness, since that captures a country's trade in goods and services).

The importance of foreign and technology investment

China's example also proves, anecdotally, the importance of foreign direct investment in promoting sustainable economic growth through trade. The relationship between the two is not necessarily straightforward: some research suggests that investment in one country by another boosts trade from the source country to the FDI recipient, and hence bolsters imports by the recipient—and only boosts its exports in the longer term.[26] Similar research focusing on China showed the complementarity of FDI and trade in terms of boosting export value and volume, but only in certain industries.[27] While these complexities cannot be captured in a single data series, the proven impact of FDI in contributing to sustained economic growth in trade means a measure of FDI as a percentage of GDP is included in the economic pillar.

Encouragingly on this score, three of South-East Asia's poorer economies—Cambodia, Vietnam and Myanmar—are in the top five in terms of inward FDI as a proportion of GDP. This is partly because their economies are relatively small, but this also means smaller absolute commitments can have a

greater impact. Vietnam, in particular, has done much to promote inwards FDI by positioning itself as an alternative to China, and as an important location in the increasingly complex intra-Asian supply chain. Investments by Samsung group companies in the country, for example, are estimated to be worth over US$13bn. Samsung Display in August 2015 said it would boost investment in the country by an additional US$3bn in the next five years, while Samsung Electronics also has plans to spend US$3bn on a second smartphone factory in northern Vietnam.[28]

Foreign investment from richer East Asian nations, principally Japan and South Korea, has played an important role in developing infrastructure in South-East Asia (which is captured in the Index in a proxy indicator measuring gross fixed capital formation). As noted above, poor transport infrastructure and logistics are a major trade cost, so overall investment in roads, railways and ports is always going to increase the economic benefits available through trade. But perhaps the most dramatic multiplier effect on economic growth in general, and consequently trade, comes through investment in technology.

Several mechanisms may influence how technology increases trade volumes. First, adequate technological infrastructure helps to reduce the costs of trade, making it more sustainable over the long-run. Academic research has also shown how ICT development and adoption may lead countries to engage in unilateral trade liberalisation to seize trade opportunities, and that improved technology improves the tradability of services across borders, in part by bringing previously untradeable industries into tradability.[29]

Figure 2.3: Technological innovation

Rank	Country	Score/100
1	South Korea	100.0
2	Japan	77.1
3	Taiwan	72.5
4	USA	63.4
5	Singapore	49.7
6	China	45.1
7	Malaysia	24.5
=8	Hong Kong	17.6
=8	India	17.6
10	Bangladesh	8.5
11	Pakistan	6.9
12	Thailand	6.2
=13	Myanmar	3.9
=13	Sri Lanka	3.9
=13	Vietnam	3.9
16	Philippines	1.8
17	Indonesia	1.1
18	Cambodia	0.5
19	Laos	0.2
20	Brunei	0.0

Source: EIU calculation from UNESCO/World Bank data

The Index therefore includes a measure of a country's technological infrastructure—i.e. its use of telecommunications and computers. As expected, this broadly correlates to income level, with Myanmar—as in many other indicators—at rock bottom. Yet, the potential for technology to help boost sustainable growth and trade in Myanmar (which, outside North Korea, is one of the only "blank slates" in terms of modern ICT infrastructure) is clear.

"What's exciting about Myanmar is it's the first genuinely mobile-first market that's ever existed," says Chris Nolan, director at Myanmar Capital Advisors, a Yangon corporate advisory firm. "[Penetration has] gone from 5% to 50% in three years and we'll be at 150-160% in the next four or five years. It's incredibly exciting. A large number of people in rural areas who'd never seen a mobile phone three years ago are now using Facebook for daily interactions. Many people in the country think that Facebook is the internet—that's probably never happened in another market. The impact on economic growth is marginal, but the capacity is there, if you look at healthcare, mobile banking [and] what mobile can do to improve farmer yield and productivity."

Technological innovation, which is correlated to increased growth and trade via improved productivity, is another mechanism through which technology can contribute to sustainable growth—and is included in the

Index through a UNESCO score (Figure 2.3). The direction of causality with regard to trade is not clear: countries that invest more in research and development may have higher productivity and may trade more as a result, but trade liberalisation (and ensuing competition) also incentivises firms to spend more on R&D.

Either way, this aspect of Asia's sustainable growth story will become increasingly important as trade in IT and services accelerates. Increasingly, trade deals at the regional and multilateral level are focusing more on the provisions related to cross-border trade in technology and data. Countries that do well in terms of encouraging technological innovation will have a head start in ensuring economic growth through trade in the 21st century will truly be as successful—and sustainable—as it was in the latter part of the 20th.

Focus point: TPP—the sustainable free trade agreement?

The Trans-Pacific Partnership (TPP), a "super-regional" trade agreement concluded in October 2015 after years of negotiations, is notable both for its scope—it includes 12 major Pacific Rim economies, including the US, Japan, Australia, Mexico and much of South-East Asia—and for its focus on environmental and labour issues, which some trade experts see as largely unprecedented.

Jeffrey Schott, senior fellow at the Peterson Institute for International Economics, notes that while the labour and environmental sections of trade pacts to date have been limited to reaffirming signatories' duty to enforce domestic rules and regulations, with the TPP, signatories commit to "fully implementing and enforcing multilateral environmental agreements and labour accords", including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the 1998 International Labour Organisation (ILO) Declaration.

Deborah Elms, executive director of the Asian Trade Centre in Singapore, says while the sustainability aspects of the TPP are "relatively modest", and may not satisfy environmentalists, they do provide a potential means for concerned groups to advocate for reforms in member countries—and could have a significant impact on trade policy henceforth. "TPP commitments could in theory provide a roadmap for using trade commitments to force environmental changes," she says.

The real test, as with previous agreements, will be in implementation. Mr Schott says that while in some cases complying with TPP commitments will involve only relatively straightforward tweaks to existing laws, in others it will mean far more comprehensive reforms—particularly for developing members. Vietnam is one example. It currently has no private labour unions, but signatories to the TPP must in theory develop a domestic law and administrative system to allow for and oversee them.

"It may be necessary to implement entirely new systems of labour and environmental laws—and to do that, a country needs resources, as well as people with the necessary expertise to design the new systems, as well as monitor and enforce them," Mr Schott says. "A large amount of capacity-building will be necessary, and it will take a transition period of years."

Chapter 3: Social pillar

The "people" aspect of sustainable trade is perhaps the most important in the long term but the hardest to define. While numerous data points exist to indicate the institutions and policies that promote economic growth through trade, identifying factors that ensure trade can strengthen human capital and do not ultimately undermine social cohesion or resilience is less straightforward. This is partly because anecdotal examples exist of freer trade leading to people losing their jobs, rising political discontent or workers being exploited—despite broad agreement in theory that trade contributes to economic growth at the macro level.

Consequently, this pillar of the Index takes into account factors that strengthen human capital while a country is engaged in trade. Although numerous potential measures could be included, for reasons of data availability and parsimony, the EIU included only the four most important factors in this context: inequality, educational attainment, labour standards and political stability. Again, the rankings in this pillar correlate broadly with income levels, with upper income countries taking the top seven positions and the least developed clustered at the bottom (with some outliers, discussed below).

Inequality

Economic growth in the past 20 years in Asia has been accompanied by a rising degree of income inequality, especially among developing nations. A 2012 Asian Development Bank (ADB) report on the issue posited that the main causes were technological change, globalisation and market reforms, all of which tend to boost returns to capital over labour.[30] Academic literature is divided on whether trade (the prime manifestation of globalisation) contributes to inequality.[31] The mechanisms by which it may do so—such as differing levels of productivity and employment between domestic and exporting firms, higher wage premiums for skilled workers in exporting industries, or disparities in bargaining power between workers and employers along supply chains—are also a key focus of ongoing research.

What is nevertheless widely accepted is that higher levels of inequality may have deleterious effects on society, including greater

Figure 3.1: Social pillar results

Rank	Country	Score/100
1	South Korea	88.9
2	USA	88.1
3	Japan	85.7
4	Taiwan	81.6
5	Singapore	74.2
6	Brunei	68.2
7	Hong Kong	56.4
8	Malaysia	52.2
9	Vietnam	48.1
10	Thailand	45.2
11	Sri Lanka	44.9
12	China	41.1
13	Indonesia	40.0
14	India	39.8
15	Laos	38.7
16	Cambodia	35.5
17	Pakistan	35.0
18	Bangladesh	33.5
19	Philippines	28.0
20	Myanmar	27.3

Source: The Economist Intelligence Unit

health disparities and mortality rates between populations within countries, higher crime rates and potentially even higher suicide rates.[32] Widening inequality also hampers the ability of economic growth to further reduce poverty, may hollow out a country's middle class, and might ultimately lead to political unrest.[33]

Countries around Asia have therefore taken steps to mitigate rising inequality, while recognising that the forces that may be behind it "should not be obstructed, because they are the engines of productivity and income growth", as the ADB put it. The key is to ensure equality of opportunity; in particular to enable people to maximise returns from education (discussed below). Whether or not these policies succeed, and hence whether a country can continue in the long term to trade successfully, should ultimately be reflected in broad measures of inequality such as the Gini coefficient, which is why it is included in the Index.

On this score it is the higher-income countries that are more notable (since, although lower-income countries tend to be more equal, their inhabitants are generally equally poor). South Korea, Japan and Taiwan, with the second-, fifth- and seventh-lowest Gini coefficients among the countries in the Index, demonstrate the success of the export-oriented "growth with equity" model that other Asian nations have tried to emulate. But, as the ADB noted, their success in the 1960s and 1970s was not replicable in subsequent decades, and rising inequality has become a problem in poorer countries in South-East Asia. It explains in part why the Philippines scores relatively poorly in this pillar of the Index, with the 4th-highest Gini coefficient.

The Philippines is also somewhat unique in its relative lack of a manufacturing sector, the mainstay of most Asian economies climbing up the development ladder.

"The traditional profile [of economic development] is from agriculture-based [employment] to manufacturing to services," notes Mr Groff of the ADB. "The Philippines skipped the manufacturing step, which means there's still a lot of low-productivity agriculture and a lot of poverty; there's no manufacturing sector that would be drawing low-skilled employment away and then transitioning to services. The service sector is productive, but as a percent of total employment it's low. There are not a lot of options in rural areas—they can't work in [business process outsourcing] or anything like that."

China and Malaysia (5th and 3rd) have also vowed in recent economic plans to tackle rising inequality that has accompanied otherwise enviable economic growth rates.

Education

What policies might help tackle inequality and ensure its inhabitants can get the most out of the opportunities provided by trade? As well as more general measures to encourage employment and prevent regional (specifically urban/rural) income disparities from widening, multilateral institutions such as the ADB frequently point to the importance of targeted fiscal policy that includes spending on human capital such as healthcare and—the single most important factor in inequality—education.[34]

Academic studies have established a correlation between education and higher value trade,[35] but the causality is not always clear: countries with higher educational levels tend to export higher-value goods, but participation in trade also provides incentives in the form of a potentially higher return on

education. Nonetheless, in the bid for countries to move up the value chain and diversify their exports, the need for higher-skilled workforces is incontestable. As developed and developing countries face increased competition in the global trading system, countries that invest in human capital will promote sustainability over the long-term compared with countries that fail to do so and, as a result, find themselves stuck at the bottom of the value chain.

Consequently, the Index includes a measure of educational attainment—specifically the percentage of school enrolment at the tertiary level (Figure 3.2). This correlates fairly closely to income level, with South Korea (96.6%) standing out at the top, some six percentage points ahead of Singapore in second place. Brunei, a country whose income level is not reflected in several indicators of human capital, is a rich outlier, at just 25%. Several other ASEAN countries outperform, notably Thailand, with a tertiary school enrolment ratio of over 50%. In terms of primary and secondary education, Thailand has made progress in improving educational opportunities for girls—an issue of inequality that is still acute in many poorer countries in the region, particularly in South Asia.[36] And for higher education, Thailand already serves as a hub for South-East Asia: since 1993 it has hosted the inter-governmental Regional Institute of Higher Education and Development as well as the ASEAN University Network.

Figure 3.2: Educational attainment indicator

Rank	Country	Score/100	Data (%)
1	South Korea	100.0	96.6
2	Singapore	92.4	90.0
3	USA	91.4	89.1
4	Taiwan	85.4	83.9
5	Hong Kong	65.7	66.8
6	Japan	59.5	61.5
7	Thailand	47.7	51.2
8	Malaysia	31.6	37.2
9	Philippines	27.7	33.8
10	Indonesia	25.0	31.5
11	China	22.9	29.7
12	Brunei	17.9	25.4
13	India	17.1	24.7
14	Vietnam	17.0	24.6
15	Sri Lanka	10.3	18.8
16	Laos	9.1	17.7
17	Cambodia	6.9	15.8
18	Myanmar	4.1	13.4
19	Bangladesh	3.9	13.2
20	Pakistan	0.0	9.8

Source: EIU score based on UNESCO/World Bank data

The private sector has also become increasingly involved in the promotion of education and training, not least as companies are keen to ensure the local workforce will meet their future needs. Hong Kong-listed resources trader Noble Group, for example, directly funds school infrastructure and teacher training in some of the less developed communities in which it operates. South Korea's Samsung Electronics is also "committed to reducing regional educational gaps and supporting the nurturing of creative talent through offering a smart educational environment driven by the latest IT technology," says Soo Ha Baik, vice president and head of corporate sustainability management. In 2014, the company invested over US$60m in its "Smart School" program, which provided vocational training and job placement opportunities to around 250,000 students in over 1,000 institutions worldwide.

Labour standards

Labour standards have become increasingly crucial to sustainable trade as awareness has grown among consumers in developed markets about conditions for workers along the globalised supply chain. The issue is now central to corporate social responsibility (CSR) reporting, not least owing to the reputational risks of being seen to profit from the exploitation of workers in poorer countries. Several scandals over labour conditions among "arm's length" suppliers—most famously involving Nike in the 1990s,[37] and Apple more recently[38]—have prompted companies to do more than pay lip service to ensuring the welfare of all employees involved in the manufacture of their products.

Companies recognise that abiding by codes of conduct such as the Ethical Trading Initiative and the Sustainable Trade Initiative (IDH), and monitoring conditions among suppliers—which might otherwise take short cuts in terms of worker protection, to protect tiny margins—is now a sine qua non for outsourcing. Independent audits of conditions in supplier factories by non-profit organisations like the Fair Labor Association are more common, and product certification is also playing a more prominent role in international supply networks (see the box at the end of this chapter). For suppliers, research suggests that protecting the interests of their workers is also beneficial for their bottom lines,[39] giving them an incentive to trade sustainably.

Yet, incidents such as the collapse in Dhaka in 2013 of the Rana Plaza, a building housing thousands of garment makers working for Western brands, are evidence that the situation demands constant vigilance—and accountability at the corporate and governmental level. The incident was the deadliest garment factory accident in history, causing over 1,100 deaths.

As they typically have the most to lose in terms of reputation, the drive for supply chain transparency generally starts with international brands, though it is by no means exclusively their responsibility, says IDH's Mr van der Put. "It's not that all the costs of fixing those sustainability issues should go to the branded companies that are most exposed to reputational risk—but branded companies do have a responsibility to send the right signals to their supply chains on the values and the norms of sustainable production they want their supply to adhere to, and to be firm on them. Then the supply chain needs to start working on getting to grips with those issues."

The potential fallout from a scandal or safety lapse means most firms now subject their supply chains to regular scrutiny. Noble Group, for example, which sources raw materials from sometimes sensitive regions, has adopted a conflict minerals policy under which it only deals with suppliers that are registered by the likes of the International Tin Supply Chain Initiative (iTSCi), and the origin of potential conflict minerals must be documented. It is in areas like these that the importance of certification and standards comes into play, since most companies cannot hope to have an on-site presence for every transaction, notes Noble Group's manager for CSR, Angel Li. "It's very important to be able to tell people you follow standards that are credible, being used globally and that come from an area people respect… otherwise it will lead to a lot of questions from investors."

The issue of labour protection potentially covers thousands of issues, from hours worked, wages paid and the provision of healthcare, to the enforcement of building regulations and municipal codes. Responsibility falls upon the ultimate brand owner, the direct employer, and the government. At the

national level, the likelihood of enforcement of regulations is covered in the Index to some degree by the quality of institutions in a given country and the level of corruption, factors included in the Economic pillar. But one of the clearest indicators of national labour standards is the prevalence of child labour.

It is easy to see why child labour, even if not in hazardous or distressing conditions, is unsustainable given the tremendous opportunity cost of education foregone. Its prevalence is tied closely to wage levels and household income. While there has been some debate about the impact of trade on both, the consensus is that liberalisation does not lead to a "race to the bottom" in terms of wages, nor does the imposition of high labour standards affect developing countries' export performance.[40] Consequently, there is every incentive for governments to discourage and police child labour; if they do not, the costs for future generations—and for the sustainability of trade in general—are considerable.

The Index therefore includes an indicator measuring the prevalence of child labour, using an EIU qualitative score based on data from sources such as International Labour Organisation surveys, World Bank analysis and research by NGOs. On this basis, eight of the 20 countries in the Index receive the lowest score—Bangladesh, Cambodia, India, Indonesia, Laos, Myanmar, Pakistan and the Philippines. For these countries to rise up the Sustainable Trade Index, tackling child labour will be an important policy step.

In Myanmar, "child labour is incredibly prevalent in labour intensive sectors; there's no debating that," says Mr Nolan of Myanmar Capital Advisors. But any efforts to stamp it out will have to "address the underlying issue: a very poor education system that is not educating [youth] beyond primary school. It's a chicken and egg problem. Fourteen- and fifteen-year-olds don't have any other viable option."

Increased engagement with the outside world—in trade and other terms—is also likely to have a positive impact on labour practices in Myanmar. "The country is very cognisant of the perception of foreign investors," says Mr Nolan. "The government is taking several steps to improve labour regulations with an eye to improving its investment competitiveness, if you look at issues like forced labour and signing ILO compacts on child labour. There's an increased sense that Myanmar needs to address its obligations to the international community."

Political stability

The potential disruption political instability can cause to trade and the economic growth opportunities it provides, is obvious. To be sure, a negative feedback loop exists in which poor economic growth can in turn exacerbate political instability, but exogenous or institutional factors amplify the risk. The final indicator in the Social pillar of the Index measures this with an EIU Business Environment Ranking score. This covers issues such as the risk of armed conflict and significant social unrest, the presence of constitutional mechanisms that allow the orderly transfer of power from one government to another, and the likelihood of disruption from terrorism.[41]

It is no surprise to see several of Asia's poorer countries score poorly on this front: Bangladesh, Cambodia, Myanmar, Pakistan, the Philippines and Sri Lanka have all perennially struggled with one or other of these threats to political stability. The impact on economic growth of such issues

is represented best by Thailand, however, which although richer and more industrialised than its counterparts in this group, has suffered from a period of protracted political uncertainty culminating in a military coup in May 2014. GDP growth fell to just 0.9% in 2014 and exports were completely flat. True, other factors including the strength of the currency and the weakness of external markets played a part, but the country's uncertain political future played a large role in discouraging spending and investment.[42]

Focus point: Certification

Particularly in the trade of commodities and natural resources, certification schemes have seen significant proliferation in recent years as more brands and consumers seek the comfort of knowing products are derived from sustainable sources. Some certification programmes are limited to individual commodities (such as the Kimberley Process, which verifies that diamonds come from conflict-free zones), but others are more ambitious (like the Fairtrade Initiative, which covers labour standards for everything from coffee to cotton and spices).

While few would dispute certification has had a positive impact overall, the efficacy of various schemes has been called into question. Fairtrade, for example, has been criticised at times for inconsistent enforcement and costing farmers more than whatever they can recoup through certification.

Ted van der Put, programme director at IDH, which is involved in several certification initiatives, says certification is "extremely useful" in the early years of the development of a commodity or industry, when Western brands are most in need of reassurance. "Often certification requires clarity of land title, and chains of custody and transparency, so there's a number of embedded values in certification that connects production to the consumer in a very clear way."

Particularly as development progresses, however, certification "tends to benefit those that are already doing well… that are geared up for export and that understand how to comply with international standards of production," leaving much of the local industry effectively untouched. Certification is also unlikely to lead to long-term change, or wide-reaching policy reforms, when it is effectively imposed from outside—in Mr van der Put's words, some schemes have a "whiff of neo-colonialism" that can make it difficult to obtain full buy-in from exporters or the authorities in the origin market.

Aaron Cosbey, an environmental economist at the International Institute for Sustainable Development, cites the Malaysia-based Roundtable on Sustainable Palm Oil as an example of a successful, "ground-up" certification scheme. "It's created all these fantastic smallholder trading facilities to help them come up to the standard—that they created, actually. It's quite different—it's an initiative of the exporters themselves, banding together to try to preserve their market share."

Chapter 4: Environmental pillar

The "planet" aspects of sustainable trade can be easier to grasp than the social factors, given the obvious and sometimes fatal consequences of environmentally unsustainable trade policies and practices, including smoke-filled skies, deforestation, contaminated water and climate change. Yet, it is often easy for countries in the developed world to characterise the environmental problems faced by emerging economies as largely self-created and easy to fix—if only their governments and populations fully grasped the problem and mustered the will to change.

In truth, many of Asia's developing countries face a far more complex struggle with the consequences of rapid industrialisation as they climb up the proverbial value chain, much as their counterparts in the developed world did during their own growth journeys decades ago. A clear focus on environmentally sustainable trade is in many ways a luxury only available to those countries that have already attained wealth. Everyone else is focused on making money first.

That being said, there are concrete ways in which developed and developing countries alike can ensure they are growing in a manner that addresses environmental issues, whether through accepted standards of corporate behaviour or effective policymaking. This pillar therefore evaluates factors that can result in environmentally unstable trade, such as an overreliance on natural resources, various forms of pollution and carbon emissions, as well as the approach to environmental standards.

Environmental pillar results

Wealthy and services-focused Singapore once again ranks near the top in second place, while its main regional competitor—Hong Kong—claims the crown in this pillar of the Index. Those who live in Hong Kong may be puzzled at its ranking, particularly given its poor air quality due to smog from neighbouring China and local traffic congestion. While this pillar of the Index acknowledges this, it focuses mainly on indicators relevant to environmental standards in trade. As an entrepôt with few natural resources of its own (and hence few indigenous exports of carbon-intensive products), a good record on reforestation and acceptable standards of water pollution, Hong Kong does many things right

Figure 4.1: Environmental pillar results

Rank	Country	Score/100
1	Hong Kong	93.4
2	Singapore	92.2
3	Japan	85.0
4	South Korea	83.0
5	USA	74.9
6	Philippines	71.0
7	Thailand	66.2
8	Sri Lanka	63.1
9	Malaysia	61.1
10	Taiwan	59.3
11	Vietnam	57.0
12	Cambodia	56.8
13	Brunei	56.1
14	Bangladesh	52.3
15	China	52.0
16	Indonesia	50.0
17	Laos	48.2
18	Pakistan	47.8
19	India	47.2
20	Myanmar	45.9

Source: The Economist Intelligence Unit

and does not export environmentally unsound practices. Its smaller size also counts in its favour in this Index, since it does not suffer from the extremes in environmental performance seen within Asia's larger countries.

Mainland China itself, though, ranks near the bottom, in 15th place, which is unsurprising given the well-documented battle of the world's second largest economy to clean up its polluted skies, and shift from infrastructure and manufacturing-led growth to a less pollution-intensive model. The "China problem" is a result of the explicit decision to prioritise growth over environmental concerns over the last two decades, says Mr Schott of the Peterson Institute for International Economics. "But it has built up such environmental costs that the Chinese are now finding themselves having to shift gears."

Still, the "China problem" is a bargain many developing countries have been prepared to strike, at least to some degree. The rankings in this pillar correlate broadly with an economy's dependence on pollution-generating industries. Most of the poorer countries landed near the bottom, once again highlighting that environmental sustainability becomes easier once countries evolve into wealthier service and knowledge-driven economies.

"Dealing with environmental challenges is deeply linked with the service component in manufacturing; that is, increasing the value, using fewer resources, wasting less and providing more efficiency in each product," says David Dodwell, executive director of the Hong Kong-APEC Business Advisory Council.

Among the least-developed nations in the Index, India—second-last only to Myanmar—is notable for its lack of progress, despite its attempts to bolster the knowledge and IT service sectors of its economy and the generally diverse nature of its merchandise export regime, which spans everything from textiles to oil. It faces a raft of environmental challenges, from sewage-infested water to rural use of fuel wood. Myanmar, on the other hand, finishes last in part to its heavy reliance on natural resources exports.[43] Digging into never-to-be-replenished pits of jade or gold and selling them to the highest bidder is clearly unsustainable over the long term.

Trade in natural resources

Copper, coal, oil, timber, rubber and precious stones are just a few of the natural resources that Asian countries are enthusiastically extracting in exchange for GDP growth. Asia is certainly resource-rich, and China, the region's economic powerhouse, is responsible for much of the demand as it tries to fuel its unprecedented development trajectory. It is only natural that economically disadvantaged markets with energy or mineral deposits move to cash in on China's voracious appetite. But this development comes with a price. Once mined and consumed, these resources are often irreplaceable. And as China's recent slowdown has illustrated, even sustained demand cannot be taken for granted. Resource extraction processes are also in many cases associated with pollution.

The importance of natural resources to environmentally sustainable trade led the World Bank and the United Nations to jointly develop a natural resources accounting system to help countries keep track of extraction activities. The EIU has also included in this pillar an indicator based on UNCTAD data assessing natural resources as a percentage of a country's total trade (Figure 4.2). Boiled down to its essence, the premise is straightforward: if a country hopes to continue trading in the global economic

system for the long term, it must either think of a way to preserve its indigenous resources, or develop other sectors and products to remain competitive. The impact development on a country's environment must be factored into the formulation of economic policies, especially those concerning non-renewable resources.[44]

Interestingly, China tops the list of countries with the lowest concentration of natural resources in exports. This is because the world's number two economy struggles to meet its own needs, and is a net importer of many resources—especially oil. Although China faces severe air and water pollution problems, its economy has to some extent evolved to encompass a diverse array of manufacturing and service-based industries. A similar pattern exists in another resource-poor and diverse—albeit more advanced—economy, Japan (at 2nd place).

Scoring at the bottom in the natural resources indicator is the tiny sultanate of Brunei, where oil and gas revenues account for over 60% of GDP and over 90% of total exports.[45] Myanmar, meanwhile, is rapidly transforming on the back of recent political liberalisation, yet oil, gas and gems still dominate its export trade.

Figure 4.2: Concentration of natural resources in trade

Rank	Country	Score/100
1	China	100.0
2	Japan	99.9
3	Bangladesh	99.0
4	Hong Kong	97.1
5	Taiwan	95.7
6	Cambodia	94.8
7	South Korea	94.7
8	Singapore	87.9
9	Philippines	87.8
10	USA	86.1
11	Pakistan	82.6
12	Thailand	77.4
13	Malaysia	73.3
14	Sri Lanka	72.7
15	India	70.5
16	Vietnam	62.8
17	Indonesia	34.3
18	Laos	18.0
19	Myanmar	6.0
20	Brunei	0.0

Source: EIU score based on UNCTAD Concentration Index

In the years ahead less developed, resource-intensive Asian economies will need to diversify their exports to avoid environmental consequences and an excessive focus on raw materials that hinders the development of other industries. If not, they risk being trapped at the lower end of the value chain. This is especially true as production grows more fragmented; that is, raw materials are sourced in one country but processing those materials for use—typically a greater contributor to employment and the local economy—takes place elsewhere. Indonesia's recent bid to move the local mining industry into higher-value processing by banning unprocessed mineral exports was rooted in this fear.

"The growing fragmentation of production across borders has massive implications for the design of trade policy, at the national, regional and global level," says the UN's Mr Montiel. "We have to address the risk that countries might be permanently locked in the low value segment of the global value chain, associated with low productivity and low wages."

Pollution and carbon emissions

In many ways pollution is the easiest environmentally sustainable trade factor to characterise; smoggy skies, contaminated water, and a high prevalence of pollution-linked health ailments in a country's

population provide clear evidence that something needs to change. At the same time, the overall costs of pollution can be difficult to quantify, especially when the pollution is a direct result of a country trying to sustain a growing population and to attain a level of development at which it can afford to prioritise sustainable wealth creation. In these cases, some policymakers argue, the ends may justify the means.

Pollution externalities play a large role in a country's ability to sustain economic growth and trade, as do citizens' views of policies related to environmental sustainability. The Index therefore includes two general pollution indicators: air pollution (PM 2.5 level) and water pollution (general pollution levels), as well as deforestation (change in forestation levels). These indicators were chosen because they have a direct impact on the daily life of citizens, meaning that they can be readily measured and may also lead to greater pressure on the authorities to preserve the environment.

One conceptual tool to help understand the potential trade-offs between pollution and development is the Kuznets curve. Named after the economist Simon Kuznets, it utilises panel data from 42 countries with variables of air pollution concentration, finding a similar hump-shaped pattern: pollution levels rise through the initial stages of an increase in per-capita income. Yet, once a country reaches a certain per-capita income point, the overall level of pollution starts to fall.[46]

Thus, China ranks at the very bottom of the Index for air quality. However, to their credit, Chinese policymakers have acknowledged the problem and are now committed to shifting away from raw industrial and infrastructure-led growth in favour of domestic consumption, services, and technological innovation, all areas that should help to reduce pollution significantly.

There are a number of explanations for why pollution levels may rise up to a certain point and then fall with economic development. First, as countries develop, production processes gradually move away from more polluting to cleaner technologies and less resource intensive production. Second, demographic factors may play a role, with population-emissions elasticity increasing at higher population levels[47]—thus densely-packed Hong Kong's poor air quality, relative to its economic prowess.

Perhaps of most importance, however, is that countries at higher income levels are likely to face greater pressure from their citizens to curb pollution levels. The more wealth and influence citizens have, the higher their expectations regarding quality of life. Therefore increases in per-capita income, as well as civil and political

Figure 4.3: Air pollution

Rank	Country	Score/100
1	Singapore	100.0
2	Philippines	96.5
3	USA	94.6
=4	Sri Lanka	90.6
=4	Brunei	90.6
6	Indonesia	90.5
7	Cambodia	89.7
8	Malaysia	87.2
9	Japan	84.8
10	Myanmar	79.1
=11	Taiwan	78.0
=11	Thailand	78.0
13	Hong Kong	76.2
14	Vietnam	70.3
15	South Korea	65.6
16	Laos	62.7
17	Pakistan	43.5
18	Bangladesh	42.9
19	India	37.4
20	China	0.0

Source: EIU score based on Yale EPI

freedoms, are likely to lead to lower air and water pollution,[48] indicators which were chosen due to the their close connection to human health.

"You'll find greater demand for environmental quality in higher income countries—that's a given," says Aaron Cosbey, an environmental economist at the International Institute of Sustainable Development (IISD). "When you get more GDP per-capita, people demand greater environmental stringency to regulations."

Asian countries also grapple with the more complex challenge of climate change and carbon emissions—one of the few manifestations of pollution that fail to conform to the environmental Kuznets curve.[49] One orthodox interpretation of this phenomenon is that while local pollutants are more likely to follow the curve as the costs are internalised, carbon emissions are less likely to adhere to the relationship as the effects are released globally.[50]

Evidence therefore suggests that carbon emissions and climate change may pose special challenges to the global governance system, and by extension, the sustainability of global trade. Numerous issues central to the carbon emissions debate are also fundamental to trade networks, including manufacturing, fossil fuel consumption and international shipping (see the box at the end of this chapter). Due to problems at the global level in agreeing on a course of action, however, many regions such as Europe have already unilaterally adopted regulations for producers on carbon emissions.

Governments are also increasingly tackling these issues at the local level—Hong Kong, for instance, recently became the first Asian city to legally require ships to use less polluting fuel while berthed there, a move that was welcomed by many large industry players. The move has "created a level playing field so everyone contributes to the cost of improving the environment, rather than putting those who voluntarily use clean fuel at a competitive disadvantage," says Stephen Ng, Director of Trades at Hong Kong-based shipping line OOCL. "[It's] an important first step forward to improving the air quality in Hong Kong as well as setting an excellent example for everyone in the region."

However, the proliferation of single-jurisdiction policies creates divergence that poses a problem to the sustainability of the current trading framework, and may lead to the imposition of trade-related sanctions on countries that choose not to regulate carbon.[51]

Heavily polluted countries such as China (at

Figure 4.4: Carbon emissions in trade

Rank	Country	Score/100
1	Singapore	100.0
2	Hong Kong	99.3
3	Laos	91.1
4	Cambodia	89.6
5	Brunei	86.7
6	Taiwan	84.7
7	Malaysia	84.3
8	South Korea	84.0
9	Sri Lanka	79.2
10	Thailand	78.3
11	Myanmar	76.9
12	Japan	76.1
13	Philippines	73.1
14	Vietnam	69.2
15	Bangladesh	59.9
16	USA	52.6
17	Indonesia	49.6
18	China	13.3
19	India	11.0
20	Pakistan	0.0

Source: EIU score based on OECD, WTO, and academic research

18th place) and India (19th) fall near the bottom of this indicator, as does the US (16th), which has the highest carbon footprint per individual in the world. Pakistan claims last place—yet the South Asian country is aiming to cut emissions by 30% by 2025, by boosting renewable energy use and promoting more efficient water use, among other measures.[52] Meanwhile, highly advanced service economies such as Singapore and Hong Kong registered very low carbon emissions, as did Laos, a country with little development or external trade.

Environmental standards in trade

Any effort to combat pollution and reduce emissions must inevitably begin with a consistent approach to environmental standards and regulations—an area in which many countries still fall short. In addition to working out which standards will effectively influence behaviour when it comes to trade, countries must confront the even thornier challenge of enforcement. Should regulations be adopted, and compliance policed, via international forums such as the WTO, in regional pacts, or at the national level?

In truth, no clear relationship exists between a country's level of trade activity and a corresponding lowering of environmental standards. Little evidence exists to support the "race to the bottom" theory that countries will adopt ever-lower standards to attract production and foreign investment, although data for some countries is limited. The "pollution haven" hypothesis—which states that firms invest in countries with lower environmental standards as a means to lower production costs—has also not been borne out by studies.[53]

In fact, many investors actively seek out, and seek to advance, environmental and other standards, not least because they are conscious of their relationships with local communities and the scrutiny they face from shareholders. "There's a willingness on the part of the companies, but we can't adopt 10 or 12 different standards… there's got to be a real movement for consistency, for some kind of common voice," says Stephen Brown, Noble Group's group head of corporate affairs. "That way every company faces the same cost structure."

"We believe in the implementation of common sustainability standards through regulation," agrees Aida Greenbury, managing director and chief of sustainability at Asia Pulp and Paper (APP), based in Indonesia. "That is why we have supported the SVLK [Sistem Verifikasi Legalitas Kayu, an Indonesian timber certification standard] and the Voluntary Partnership Agreement process between the EU and Indonesia, which seeks to ensure that timber licensing systems in Indonesia match the standards set by the European market."

Environmental standards will likely continue to be a key issue for countries in the international trading system. The EIU therefore devised an indicator measuring environmental standard adherence, which reflects whether or not a country is signatory to international environmental compacts dedicated to general environmental conservation, including those specifically looking at the intersection between environmental conservation and trade (Figure 4.5).[54] Only China has signed all the relevant treaties and agreements, which is why it tops this indicator (Hong Kong, which cannot independently sign international treaties, receives China's scoring in this indicator, while Taiwan, for similar reasons, receives no score).

Of course, signing treaties and ensuring adherence to them are not the same thing, but—as COP21 talks in Paris, being conducted at the time of writing, demonstrate—international agreements are vital first steps in getting governments to address what Mr Groff of the ADB calls the "temporal disconnect" between short-term political considerations and long-term environmental challenges. "That's why people are gathered in Paris now: everyone has to make decisions today that go far beyond the lifespan of any of the politicians there."

The complexity of the issue goes beyond broad international compacts. The type of regulation that is necessary—and how much—can also be contentious. Some arguments suggest environmental and labour standards become increasingly important in a world of falling tariffs, leaving countries with higher standards at a comparative disadvantage to those that adopt less stringent ones. At the same time, compelling developing countries to adhere to the standards adopted by their wealthier counterparts is not necessarily the answer, given the associated costs and restraints on growth.[55]

Figure 4.5: Environmental standards in trade

Rank	Country	Score/100	Data
=1	China	100.0	7
=1	Hong Kong	100.0	7
=3	Japan	83.3	6
=3	Philippines	83.3	6
=3	South Korea	83.3	6
=3	USA	83.3	6
=7	Cambodia	66.7	5
=7	India	66.7	5
=7	Indonesia	66.7	5
=7	Malaysia	66.7	5
=7	Pakistan	66.7	5
=7	Singapore	66.7	5
=7	Thailand	66.7	5
=7	Vietnam	66.7	5
=15	Laos	50.0	4
=15	Sri Lanka	50.0	4
=17	Bangladesh	33.3	3
=17	Brunei	33.3	3
=17	Myanmar	33.3	3
20	Taiwan	0.0	1

* NB: This includes: 1) Membership of the WTO's Green Goods group; 2) The Convention on the Prevention of Marine Pollution by dumping of wastes or other matter 3) The Convention on the Protection of the Ozone Layer 4) The Kyoto Protocol to the United Nations Framework Convention on Climate Change 5) The International Timber Agreement; 6) The Convention on International Trade in Endangered Species of Wild Flora and Fauna; 7) The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Source: EIU score based on membership or ratification of international environmental compacts*

The IISD's Mr Cosbey gives the example of azo dyes, which were banned in textiles by the EU in 2002 because they were found to be carcinogenic. "This was really hard for Asian exporters to the EU at the time because it required different processing procedures. It wasn't protectionist, but it was hard for them to meet the standards and they complained bitterly. At the end of the day, those kinds of standards are punitive in a sector which is based on small-scale production. It drives the production mode towards vertical and larger scale, which is unfortunate for all the smaller producers."

Related to this, world trade regulatory bodies have traditionally adopted a circumspect attitude towards robust environmental standards, although the position is gradually changing. In the meantime, a raft of agreements have cropped up to fill the void—whether multilateral agreements on the environment that include references to trade, or bilateral and multilateral FTAs which include environmental provisions of varying quality.[56] The recently concluded TPP is one notable example (see the box at the end of Chapter 2).

Again, the role environmental standards should play in trade pacts—if any—is controversial. Trade agreements are often extraordinarily complex and difficult to negotiate even in the absence of environmental considerations. "The moment you start adding additional issues to a trade agreement you are altering the negotiation, and there may well be some parties who find those elements too burdensome or extract a high price for their inclusion," remarks Mr Evenett of the University of St Gallen. "A number of countries in Asia-Pacific have been very resistant to the inclusion of labour and environmental standards in FTAs because they see them as backdoor forms of protectionism. Unless there's an acceptance that sustainability is a universal value that people will pursue independently of mercantilist advantage, [standards are] going to get caught up in bargaining."

At the same time, trade accords can represent a crucial opportunity to raise standards in multiple markets at once. An FTA is "a way of influencing a lot of players," says IDH's Mr van der Put. "A country needs to adhere to it and take it seriously. They really want these privileged export positions, and if there's any way of kick starting improvements in a country, it is by including them in these kinds of deals."

Given the disparity of regulations in the current environment, it seems a coherent and consistently applied approach to standards, at least at the regional level, will prove elusive for years to come.

Focus point: Deforestation in ASEAN

Of all the environmental issues faced by member states of the Association of Southeast Asian Nations (ASEAN), deforestation may be the most pressing. ASEAN lost over 6% of its forest cover from 2010-2013 due to logging and land conversion, and land use changes contribute to more than three-quarters of the region's greenhouse gas emissions, according to the Thailand-based Regional Community Forestry Training Center.

The urgency of the problem was underlined again in 2015 when much of the region choked for months under smog originating from forest fires in Indonesia, where farmers frequently resort to slash-and-burn techniques to clear land. Environmentalists also pointed the finger at the palm oil and pulp and paper industries, both of which require vast tracts of land for plantations.

Efforts to address the haze, now a near-annual occurrence, have been ongoing for years. In 2002 leaders signed the ASEAN Agreement on Transboundary Haze Pollution, which calls for greater regional coordination in the monitoring and prevention of forest fires. Countries hit by fires are now regularly offered technical and other assistance by their neighbours.

Despite this, deforestation continues, and in the eyes of many is indelibly linked with the regional palm oil and paper trades. Products from one of the world's largest producers, Indonesia-based Asia Pulp & Paper (APP), were pulled from some shelves in Singapore over the company's alleged links to the 2015 forest fires. The group, however, insists none of its suppliers were involved and has channelled substantial resources to fighting the fires, gathering information on affected areas, building dams and canals, even supplying water-bombing planes to Indonesia's disaster management agency.

Aida Greenbury, managing director and chief of sustainability at APP, says increased cooperation in ASEAN is "essential", in finding a resolution to the region's forest crisis, and views the advent of the ASEAN Economic Community (AEC) in 2015 as another positive step. "There will be an even greater imperative for policymakers across ASEAN to work together on these issues."

However, to address deforestation, APP says trade liberalisation initiatives like the AEC should also incorporate sustainability policies and particularly national certification systems, like Indonesia's SVLK standard for timber, so they are effectively standardised and implemented across the region. "The bottom line is that free trade in the region needs to be combined with the need to control and monitor supply chains for products like timber in order to meet legality and sustainability standards for export."

Given the size and relative remoteness of much of Indonesia's forest areas, the role of local governments and communities is also crucial, and community engagement will be a major area of focus for APP going forward, says Ms Greenbury. "Ultimately we must find ways of working with communities which protect both their livelihoods and the forests on which Indonesia and the world depend."

Focus point: The greening of logistics

As international trade has flourished, the environmental cost of the simple physical transportation of goods has risen. The global shipping sector alone is responsible for around 1.5% of global greenhouse gas emissions, and its current emissions are expected to double by 2050 under "'business as usual" conditions, according to the US-based Center for Climate and Energy Solutions.

Given the prevalence of fossil fuels in marine and air transport, and the lack of apparent alternatives, "green logistics" may seem an elusive prospect, but many companies are taking steps in this direction. Shipping line OOCL, for example, has launched an online and mobile-based Carbon Calculator that allows customers to measure carbon dioxide emissions in their supply chains, spanning ship, truck, feeder, barge and rail connections at over 70,000 port combinations. Recent enhancements have enabled OOCL to generate the reports without inputting data manually, allowing clients to identify at a glance target areas for reductions.

"Corporate reporting of greenhouse gas emissions with high quality standards has become a common practice for multinational corporations," says Stephen Ng, Director of Trades at OOCL. "By providing the [reports] on a proactive basis, we are able to… help them achieve their green objectives."

Noble Group, meanwhile, practices "slow steaming", or capping the speed of ships it operates to reduce emissions and save fuel when the raw materials under transport don't necessarily need to be delivered urgently, says Angel Li, the group's manager for CSR. "In setting the balance of shipping and time we work closely with customers to see how we can optimise conditions to make them as energy and cost-efficient as possible for both sides."

Minimising its logistics carbon footprint has been a major focus for Samsung Electronics, which managed to limit the annual increase in greenhouse gas emissions from transporting products to 2% per year from 2012-2014, even while total product weight increased by 17% on an annual basis, according to Soo Ha Baik, vice president and head of corporate sustainability management. "We reduced the total packaging weight by increasing application of bio-packaging products… and expanded usage of ocean transportation versus road or aviation. To establish 'nearshoring' transportation, we expanded our production networks to 38 locations in 10 different countries to reduce the total distance travelled."

Conclusion

Trade has been indispensable to the development of Asia's most successful economies: those at the top of the Hinrich Foundation Sustainable Trade Index are proof of the remarkable power of trade in lifting people out of poverty. The hope of the poorer economies in the region is that they can follow a similar development model to Singapore, South Korea, Japan, Hong Kong and Taiwan, moving from low-value-added manufacturing into the production and export of higher-value technology and services.

However, the global economy is not static, and the conditions that enabled Japan and then Asia's newly industrialised economies to rise up the value chain are unlikely to be repeated. Some academic theory questions whether the traditional process of growing wealth through industrialisation has been permanently disrupted by globalisation and labour-saving technological advances. Even if this is not the case (and it seems Asia has arguably escaped the most serious effects of "premature deindustralisation"[57]) the danger of falling into a "middle income trap" remains acute.

Awareness of the importance of sustainability—people and planet—in delivering inclusive growth is growing all the time. As the OECD noted in 2014, emerging Asian economies can manage short-term volatility but "need to do more to meet their long-term potential". Its policy advices focus heavily on the kinds of issues covered in the Sustainable Trade Index—investing in human capital, enhancing "green growth", and improving institutions to enhance economic resilience.[58]

Sustainability should thus be conceived not as a result or by-product of a successful move up the trade value chain. Rather, as the Index and this report have illustrated, it is best tackled as part and parcel of, and will ultimately contribute to, the development process.

In this regard, capacity-building, and efforts to foster local industries and capabilities, are seen as crucial for those economies on the lower rungs of the development ladder. This is why initially trade-focused bodies like the Asia Pacific Economic Cooperation (APEC) have significantly expanded their focus in recent years to cover areas such as environmental and labour policy. A large number of APEC groups "are looking in a very detailed way at social and environmental factors and the extent to which they play a role in inhibiting growth or welfare", says Mr Dodwell of the Hong Kong-APEC Business Advisory Council. The emphasis is on practical solutions and technical training, outlined in "workshops, conferences that bring together experience from across the region, studies that allow economies to share information and take away lessons".

Any drive to enhance local capabilities should focus not only on governments, but the private sector, and exporters themselves in particular, adds Mr Cosbey of the IISD. Governments need to help exporters understand "where the new markets are", and formulate "active policies to make sure that domestic standards are accredited as equivalent to those of foreign countries... [this is] not something that an individual producer can do."

These efforts can enjoy a multiplier effect if they are tackled by several governments in tandem. Mr Cosbey gives the example of pooling resources to build an accredited certification facility for a few to share, which could be an "amazing boost" for exporters in all of them. There are already some

encouraging signs regionally in this regard; Singapore, for example, regularly dispatches trade experts to its less-developed neighbours.

There is growing regional recognition of the importance of sustainability in advancing trade, a recognition that is increasingly being backed up by political will and resources. Future iterations of the Sustainable Trade Index will help tell the story of whether Asia's economies are meeting their potential in this regard.

Methodology

The Sustainable Trade Index measures a country's capacity to participate in the international trading system in a manner that supports the long-term domestic and global goals of economic growth, environmental protection, and strengthening of social capital. Every country in the Index is scored across these three categories, or pillars.

Pillars of Trade Sustainability

Following an extensive literature review of the three pillars of sustainability – economic, environmental and social – the research team selected a number of indicators and sub-indicators to capture these concepts. Balancing relevance, availability and parsimony, the economics pillar consisted of 14 indicators and four sub-indicators, with the social and environmental pillars consisting of four and six indicators respectively.

Economic Pillar

The economic pillar measures a country's ability to ensure and promote economic growth via international trade. In this category, countries are scored on a number of measures that demonstrate a link between the trading system and economic growth. Some indicators capture the ease of conducting international trade, such as the current account openness and various trade costs associated with conducting cross-border transactions. Export diversification is also measured via export market and export product concentrations for each country, as a diverse trading system provides a country with greater ability to absorb economic shocks in trading partner economies. Investment and the quality of infrastructure are also measured for each country, as these encourage domestic production and support the ability of firms to trade internationally. For a full list of economic indicators chosen for this pillar, see the table below.

Social Pillar

The social pillar captures those social factors that relate to a country's capacity to trade internationally over the long term and a population's tolerance for trade expansion given the costs and benefits of economic growth. Central to this pillar is the concept of human capital. In this regard, countries are measured on the environment that encourages and supports the development of human capital in the country. For example, the extent of inequality and labour standards within the country are both measured in this pillar. Furthermore, the educational attainment and political stability also capture human capital and the environment in which that capital can be productively employed.

Environmental Pillar

The environmental pillar measures the extent to which a country uses natural resources and manages the externalities that arise from economic growth and participation in the global trading system. Indeed, while a country's capacity to participate in the global trading system is dependent on

economic development, a country still must try to exercise prudent stewardship over natural resources and limit externalities in its economic calculus to promote its overall environmental capital. The indicators chosen in this section attempt to quantify a country's environmental capital, including resource use and externalities. Pollution—both air and water—is measured in this pillar. Relating to the future impacts of trade, a country's environmental standards, carbon emissions and share of natural resources are also measured.

Indicators and Income groupings

Based on the findings of the research phase, a neutral view was taken on the relative weightings of the three pillars. It was clear from the literature on sustainability that a strong case could not be made for the pre-eminence of one pillar over the others. From this position, each pillar was given a neutral weighting of 33.3%.[59]

Countries in the Index were sub-divided into four income categories to enhance comparison on trade sustainability. As a method to capture the economic development stages of the countries in this Index, four income groups were classified based on GDP per head:

High income	Upper middle income	Middle income	Low income
Singapore	Malaysia	Sri Lanka	Cambodia
South Korea	China	Vietnam	
Japan	Thailand	Philippines	
USA		Indonesia	
Hong Kong		India	
Taiwan		Laos	
Brunei		Bangladesh	
		Pakistan	
		Myanmar	

Indicator Normalisation

In order to be able to compare data points across countries, as well as to construct aggregate scores for each country, the project team had to first make the gathered data comparable. To do so, the quantitative indicators were normalised on a scale of 0-100 using a min-max calculation, where the score is the standard deviation from the mean, with the best country scoring 100 points and the worst scoring 0.

Many of the qualitative indicators were normalised in a similar way. In some instances, those scores were on a scale of 0-100. In others, a scale of 1-5 was used, with 1 being the lowest or most negative score, and 5 being the highest or most positive score. Those qualitative indicators scored on a 1-5 basis were transformed to a scale of 0-100 to enable comparison with the other series in the Index.

Data Sources

A team of in-house researchers collected data for the Index from August to October 2015. In addition to data from The Economist Intelligence Unit, which has a range of quantitative and qualitative indictors, publicly available information from official sources has been used where applicable. Primary sources include the World Bank, UNESCO and various others (see table below).

Economic Pillar

Indicator	Unit	Source	Description and Purpose
Growth in per-capita GDP	percentage growth	EIU	Year-on-year growth of per-capita GDP. As a proxy for personal income, this indicator reflects consumers' ability to spend on imported goods.
Current account liberalisation	1-5 scores	EIU	A measure of a country's current account liberalisation, with consideration of restrictions in this area; used to capture the ease with which a country trades goods across its border.
Tariff and non-tariff barriers	1-5 scores	EIU	A measure of tariff barriers and non-tariff barriers such as trade quotas, licensing and import inspection. This indicator provides a broad measure of the impediments to trade in a country.
Exchange rate volatility	trade-weighted standard deviations	EIU	The standard deviation of a country's exchange rate to its major trading partners. It is a trade-weighted measure to reflect that volatility matters more for higher volumes of trade. As an indicator, exchange rate volatility is a potential source of uncertainty when conducting trade.
Financial sector depth	% of GDP	World Bank	Domestic credit to the private sector, as a percentage of GDP. This indicator is a proxy for the availability of trade finance to provide a hedge against exchange rate volatility.
Foreign trade and payments risk	1-100 scores	EIU	A measure that assesses a company's risk in getting money or inputs in and out of a country. This indicator captures the risks to conducting trade, which provide an additional barrier to trade for trading companies.
Export market concentration	%	EIU	The share of a country's exports by destination, calculated as the average of the country's top four trading partners. This indicator provides a measure of export market concentration, as a highly concentrated export market is a trading vulnerability.
Export product concentration	%	EIU	The share of a country's exports by product (as opposed to destination), calculated as the average of the country's top four product shares. This indicator provides a measure of product market concentration, signalling vulnerability if this share is highly concentrated on certain products.

Economic Pillar

Indicator	Unit	Source	Description and Purpose
Foreign Direct Investment (FDI)	% of GDP	EIU	Inward FDI as a share of GDP. The indicator measures this source of investment that supports a country's trade and economic growth.
Gross fixed capital formation	% of GDP	EIU	Gross fixed investment in the national economy. Like FDI, a country's gross investment encourages trade and economic growth.
Trade costs—a composite of the four factors below: infrastructure, logistics, corruption and legal system.	0-100 scores	EIU	A composite measure of the factors that contribute to increasing costs to trade. These indicators capture the extra burden to trade created by inefficiencies in the trading system.
Infrastructure	1-10 scores	EIU	The EIU's infrastructure rating scores countries between 1 and 10 on a variety of measures such as telecoms, transport, energy, and office space. Depending on its state, a country's infrastructure can either support or inhibit economic growth and trade.
Logistics performance	0 - 5	World Bank Logistics Performance Index	Logistics performance refers to the efficiency of the supply chains that support domestic and international trade in a country. Inefficient logistics can raise the costs of trade and hinder economic growth.
Corruption	1-5 scores	EIU	The EIU's corruption rating scores countries between 1 and 5 on the pervasiveness of corruption among public officials. Corruption raises the costs of conducting trade.
Legal system	1-5 scores	EIU	The EIU scores countries between 1 and 5 on the transparency and fairness of legal system. An obscure and unfair legal system raises the costs to trade.
Technological innovation	R&D as % of GDP	UNESCO/World Bank	A measure of a country's investment in research and development as a percentage of total GDP. This indicator captures a country's ability to innovate and participate in the trading system as it moves towards more sophisticated goods.
Technological infrastructure	1-100	EIU	A measure of a country's technological infrastructure in the use of telecommunications and computers. This indicator measures a country's IT infrastructure to attract FDI and have a competitive infrastructure for exporting.
Growth of labour force	%	EIU	The year-on-year change in a country's labour force. A growing labour force supports economic growth and a country's ability to continue trading.

Social Pillar

Indicator	Unit	Source	Description and Purpose
Inequality	0 to upper bound	World Bank	A country's measure on the Gini coefficient. This indicator captures the inequality level in a country between the upper and lower income brackets. Trade can impact inequality, and similarly, inequality can be a burden on trade and growth.
Educational attainment	%	UNESCO/World Bank	Percentage of individuals receiving tertiary education. This indicator provides a proxy for the level of educational attainment in a population, reflecting the relationship between human capital and trade.
Labour standards	1-3 scores	International Labour Organisation (ILO)	An assessment of child labour from the ILO, thus capturing the prevalence of child labour in a country. Trade is unlikely to be sustainable with enduring low-levels of labour standards.
Political stability	0-5 scores	EIU	The EIU scores countries on the level of political stability in a given year, thus providing a link between trade and the political and social stability in a country.

Environmental Pillar

Indicator	Unit	Source	Description and Purpose
Air pollution	0 to upper bound (population weighted exposure to PM2.5 (micro-grams per cubic metre))	Yale EPI	Levels of particulate matter 2.5 (PM 2.5), to capture the air pollution in a country. This indicator highlights the link between economic growth, trade and pollution.
Deforestation	lower bound to 0 (percentage change)	Yale EPI	The change in a country's forest cover. This indicator measures the rate of deforestation in a country over time, reflecting the links between growth, trade and the degradation of natural resources.
Water pollution	0-100 (% of wastewater treatment)	Yale EPI	The level of water pollution in a country. This indicator reflects the links between economic growth, trade and pollution in a country.
Environmental standards in trade	1 – 7	WTO, EIU	Indicator scores a country based on how many of seven key environmental agreements it has signed.

Frequently asked questions

1. How does the index differ from a simple ranking of wealth and economic development?

The index aims to measure not just the economic conditions, but also the environmental and social conditions that are necessary for trade to be sustainable. While it's true that there is a strong correlation between a country's wealth and its performance in the index, a significant number of countries over or underperform relative to where they would be expected to rank if it were purely a measurement of wealth.

2. What does the index tell us about the future of sustainability in trade for the countries covered?

The index relies on data both past and present to compile a score that, above all, measures how sustainably a country has been trading in recent years, but it also features a number of leading indicators that can suggest future performance. See "growth in labour force" and "educational attainment" as two examples.

3. Given the widely-recognized importance of currency manipulation as a trade issue, is there a reason it was not included in the index?

Currency manipulation was considered when the index was being conceptualized. While currency issues are clearly central to trade, there are two key problems with creating an indicator around this which is relevant and practical for inclusion in an analysis of trade sustainability.

The first is that there is no accepted objective measure on the correct valuation of a currency. Academic research shows that much currency movement is best approximated by a random process in the short term. In the medium term, concepts such as real effective exchange rates (REER) can be useful, but there is considerable debate around the definition and base-years appropriate for comparison.

A second problem is determining the extent of the manipulation, if it exists. Tracking changes in the size of a country's foreign currency reserves could have been a proxy, but even that can present more noise than signal as foreign exchange reserves are affected by a broad range of economic forces, which do not all relate to manipulation. The relative size of these forces can also differ substantially across countries.

Finally, it is also unclear how to relate a suitable measure of currency manipulation to trade sustainability. A country may choose to manipulate its currency as a way to boost exports, which may benefit that country in the short term. From a longer-term perspective, however, it is unclear how detrimental these periods of manipulation are for global trade sustainability. A short-term period of devaluation could be considered beneficial if it engendered externalities that integrated a country more deeply into the global trade system.

4. Is it fair to compare developed countries with developing countries when it comes to sustainability?

Indexes by nature are meant to be educational and aspirational; countries want to learn and implement best practices and improve their standing and the standing of their citizens as a result. Unless comparisons are made, it's difficult for that to happen.

There is some debate about whether lower income economies should be held to the same standards of sustainability as advanced economies. For this reason the index also includes an income-weighted ranking, and identifies countries that underperform and over-perform relative to their income.

Users of the index who wish to test its sensitivity to particular sustainability measures are welcome to download the index data and adjust the weightings of the pillars and indicators.

Footnotes:

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[18] Despite initial ambitions to tackle the issue, the TPP contains no provisions to prohibit currency manipulation, although in a side agreement (with no enforcement mechanisms) signatories pledged to avoid competitive devaluations and establish an annual forum to discuss the issue.

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[30] ADB, *Asian Development Outlook 2012: Confronting Rising Inequality in Asia*, 2012. http://www.adb.org/sites/default/files/publication/29704/ado2012.pdf

[31] A summary of academic literature on trade theory consulted in building the Index is available in an appendix.

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