

Part 2

Trade Integration in India and ASEAN: Tracking Key Goods for the Green and Digital Economies

Ben Shepherd

Principal, Developing Trade Consultants

1 Introduction

India is a key trading partner for the Association of Southeast Asian Nations (ASEAN). The cornerstone of the relationship is the ASEAN–India Trade in Goods Agreement (AITIGA), although the preferential trading relationship has been complicated by India’s withdrawal from the negotiating process leading to the Regional Comprehensive Economic Partnership (RCEP). The rationale behind the RCEP is to unify and combine ASEAN’s network of free trade agreements (FTAs) with major partners, but India now lies outside that framework. Having said that, UN Comtrade data show that the framework of preferential trade under the AITIGA has made it possible for the bilateral trading relationship to undergo substantial growth, amounting to US\$131.6 billion in 2022.

All countries are using the United Nations (UN) Sustainable Development Goals (SDGs) as the cornerstone for development activities up to 2030. The SDGs bring together economic, social, and environmental goals. While measurement is subject to controversy and limitations, the idea that trade should be a means of implementation of the goals, rather than a goal itself, has gained widespread acceptance. There is broad consensus that trade integration can boost incomes, increase consumption possibilities, and contribute to poverty reduction. But the SDG framework makes it important to focus on other ways in which trade can facilitate sustainable development outcomes (e.g. Helble and Shepherd, 2016).

One contribution trade can make is facilitating the dissemination of environmentally friendly products, as well as digital products that promote structural change compatible with a lesser environmental footprint. ‘Green and digital trade’ is an emerging area of concern, as evidenced by the increasing inclusion of chapters and provisions dealing with these areas in FTAs, as well as their incorporation in work by the major multilateral agencies concerned with trade, for instance through a concern with the links between trade and climate change, or the implications of digital transformation for trade and development.

Against this background, what is the role of green and digital trade in the ASEAN–India trading relationship? How important are these sectors, and what recent growth have they seen? How does the bilateral relationship sit compared with other trading relationships

with key partners? What sorts of policy changes could facilitate future growth in green and digital trade?

This chapter seeks to provide some preliminary answers to these questions. The methodology is data-based. The approach is selective, focusing on six clusters of goods within the green and digital space. The objective is to look at the composition of bilateral and multilateral trading relationships, as well as recent growth rates.

The next section turns to the foundational issue of identifying product clusters within green and digital trade, given the chapter's selective approach. It uses existing classifications from international organisations and national governments to identify six clusters in the green and digital space. These clusters form the bedrock for the analysis of the ASEAN–India relationship (section 3) and the comparison with trade flows in green and digital products with other major trading partners (section 4). Section 5 looks at policies that can affect green and digital trade, focusing again on ASEAN and India. Consideration ranges from traditional tariffs to new non-tariff measures (NTMs) associated with resurgent industrial policies around the world. The final section concludes.

2 Identifying Key Green and Digital Goods

'Green and digital' is not a recognised part of any product or industry classification used in international settings. However, as countries and international organisations have come to recognise the importance of policy in these areas, they have developed ad hoc rosters of goods that fall into different categories that relate to the overall green and digital classification, using existing classification systems.

For international trade in goods, the global standard for classification is the Harmonized System (HS). It identifies around 5,000 goods at its most disaggregated level; many countries use more detailed systems that identify as many as 10,000+ goods, but those schemes are not internationally harmonised.

The HS is frequently revised by the World Customs Organization through discussions amongst member states. These revisions take account of changing factors that affect the realities of global trade, including consumer tastes and demands, and the emergence of products linked to new and emerging technologies.

Against this background, a comprehensive definition of green and digital products that covers all eventualities, subsectors, and country realities may not be possible. International discussions in areas like environmental goods show that countries frequently differ in their approaches to these questions and are frequently unable to agree on which goods should be included in particular classifications.

As an analytical tool, it is useful to have an entry point to the green and digital space, even if not yet fully approved and agreed by governments. This chapter's approach is therefore

to use existing catalogues of green and digital products, as well as others that are easily identifiable within the HS's standard structure. The catalogues come from international organisations and selected national governments. They will be refined over time, but they provide a starting point for the analysis of green and digital trade between India and ASEAN. They also provide a base of comparison for contextualising that relationship in terms of trade with other parts of the world.

Concretely, this chapter focuses on six identified clusters of green and digital goods. The rationale for choosing these clusters is that they represent important parts of green and digital supply chains and are regarded by many countries as economically and strategically important in that space. They also capture important aspects of the ASEAN–India trade relationship in the green and digital sectors. Focusing on clusters has the advantage of providing an overall picture. The analysis here does not look at individual, finely defined products; future work can helpfully move in that direction. However, the classifications used to identify green and digital goods at a very fine level and can be deployed in future research that seeks to build on the insights developed here.

The first cluster is low-carbon technology goods. These goods are a key part of the global fight against climate change. Trade in low-carbon goods is particularly important because their development has been led by high-income countries, but there is an urgent need for diffusion to low- and middle-income countries in the context of the Paris Agreement and the global commitment to achieve net zero carbon dioxide emissions by 2050. Research by Pigato et al. (2020) identified a list of low-carbon technology products using the 2017 revision of the HS, and is adopted in full for this chapter, based on an Excel file maintained by the International Monetary Fund (IMF, 2017b).

The second cluster is environmental goods. This group refers to products that have significant potential to improve environmental conditions in a variety of ways, whether by limiting or remediating externalities, or otherwise promoting sustainable economic growth. International efforts to define lists of environmental goods have proved controversial, though not without success: Asia-Pacific Economic Cooperation (APEC) agreed on a list, but similar efforts at the World Trade Organization (WTO) proved difficult to conclude and suffered from a lack of consensus and broad-based participation. Nonetheless, the IMF has produced a list of environmental goods using the 2017 revision of the HS (IMF, n.d.). The list covers goods connected to environmental protection and goods that have been adapted to be more environmentally friendly. The analysis here is based on an Excel file maintained by the IMF, which is used in full here (IMF, 2017a).

The third cluster is the lithium-ion battery supply chain. The rationale for choosing this cluster is that lithium-ion batteries are crucial to many green applications, including electric vehicles and renewable energy storage. Countries have recently identified this supply chain as having strategic significance, given ongoing global tensions over the location of production centres for renewable energy technologies, as well as electric vehicles. Research by McMahon (2022) identified a list of goods from the 2017 revision of

the HS that relate to this supply chain. This chapter uses an Excel file maintained by the United States (US) government, based on that research; it is adopted in full (McMahon, 2022).

The first three clusters focus on green goods. The second group of three clusters focuses on digital goods. While digital goods can cover a wide range of products, including many mature technologies, there is benefit in focusing again on emerging and new technologies, as well as goods that are important for supply chains. This chapter therefore does not attempt to comprehensively track trade in personal computers or smartphones, for example, but instead focuses on three aspects of digital trade that are of emerging importance and which have in some cases been identified by countries as strategically important: equipment used for 3D printing (HS 2017 code 847790); semiconductors (HS 2017 codes 8541 and 8542); and industrial robots (HS 2017 code 847950). Whereas the first three clusters required extensive combing of the HS to identify relevant products, these industrial products are much better catalogued in the standard nomenclature and can be identified using a small number of product codes. All are important in emerging digital supply chains.

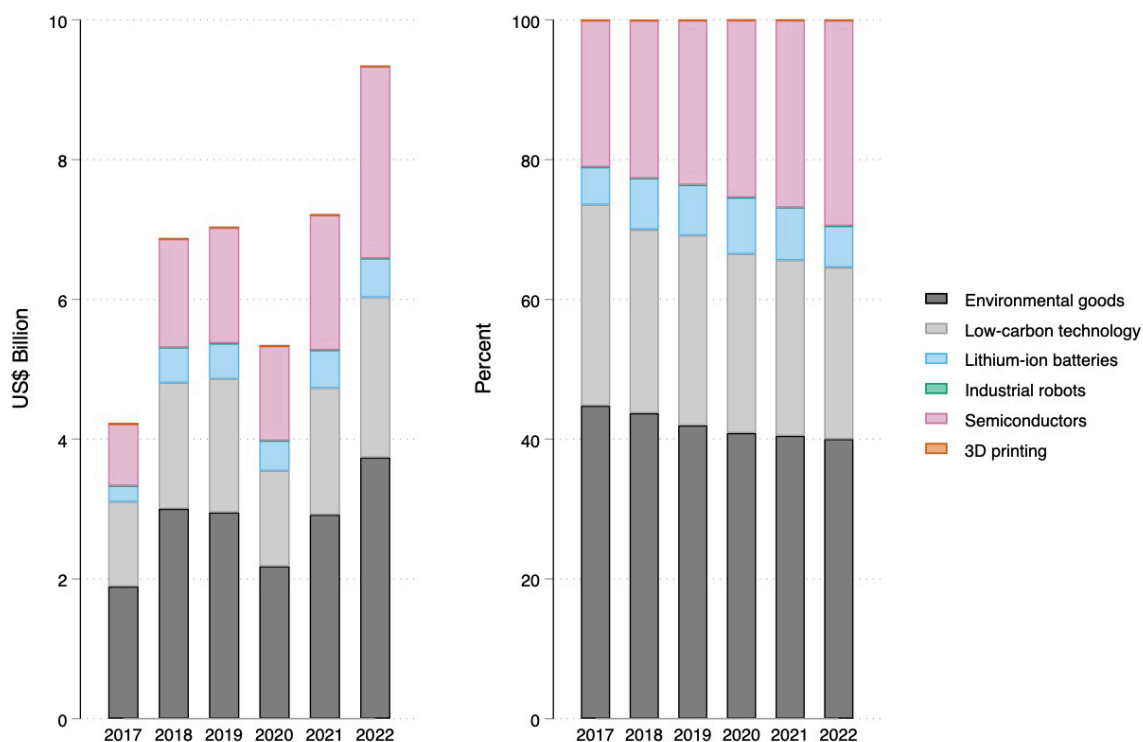
Having identified six clusters of green and digital goods, the remainder of this paper uses these classifications to identify trade flows in those areas, focusing on the relationship between ASEAN and India and contextualising it in the framework of global trade flows.

3 INTRA-REGIONAL TRADE LINKAGES

Figure 1 (left panel) shows that ASEAN's exports to India in green and digital products have generally been increasing over time, reaching nearly US\$10 billion in aggregate in 2022 from just over US\$4 billion in 2017. So, the growth rate of these products is high in aggregate, and ASEAN has clearly been growing its role in the Indian market over recent years. Increases in export value over time could be associated with improvements in competitiveness in ASEAN, in addition to changing market demand in India. However, it is also important to look at the data in percentage terms (right panel), as it emphasises that the product groups are not all performing in the same way. Over time, ASEAN's exports are becoming more oriented towards semiconductors and to some extent lithium-ion batteries; the role of environmental goods and low-carbon technology is not declining in absolute terms but is a smaller share of total ASEAN exports to India in green and digital products in 2022 relative to 2017.

Figure 1: Exports by ASEAN to India, 2017–2022 by Category, Green and Digital Goods

(US\$ billion and percentage of total)



ASEAN = Association of Southeast Asian Nations.

Note: Exports are estimated using mirror data.

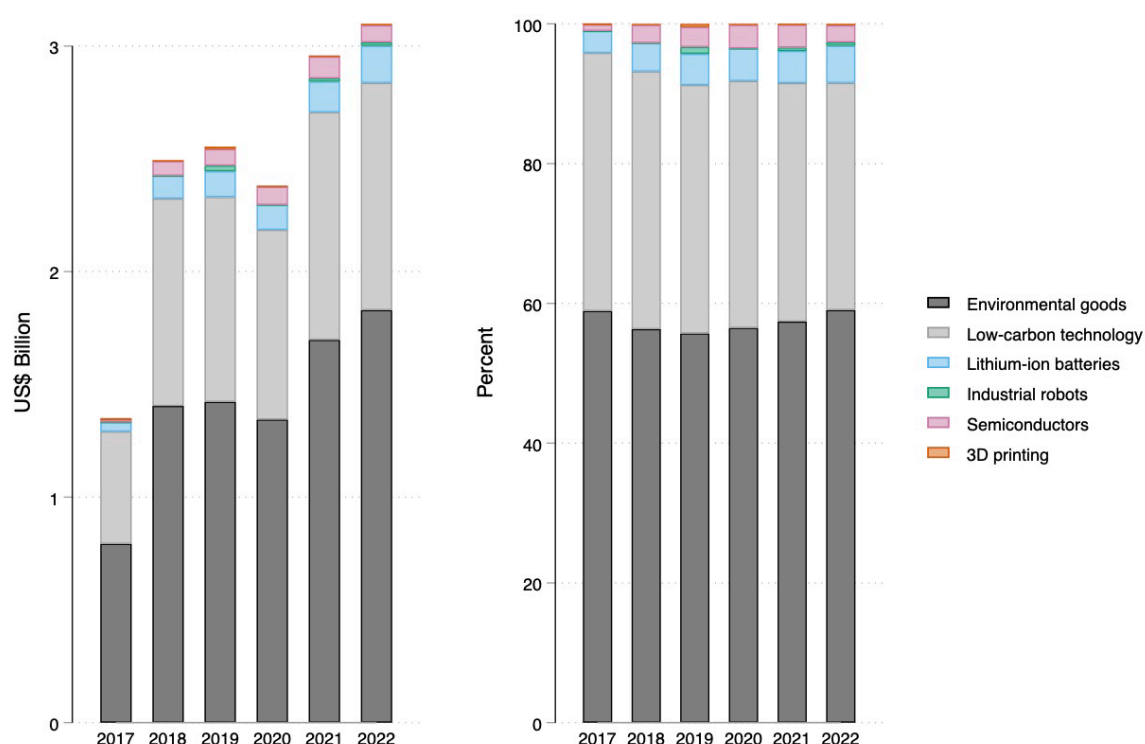
Source: United Nations (2024), Comtrade Database, 2017–2022. <https://wits.worldbank.org/> (accessed 1 April 2024).

Figure 2 looks at the relationship from the opposite point of view – India’s exports to ASEAN. Like ASEAN’s exports, products originating in India and destined for ASEAN saw rapid growth in value terms (left panel) between 2017 and 2022, admittedly from a low baseline. The aggregate value of under US\$1.5 billion increased to over US\$3.0 billion during that period. Again, this rapid growth is likely indicative of improvements in competitiveness, in addition to changing market demand in ASEAN. But the right panel shows that the composition of India’s exports to ASEAN is significantly different from trade in the opposite direction: it skews heavily towards environmental goods and low-carbon technology, although lithium-ion batteries and to a lesser extent semiconductors have also seen growth in their share of the total. Overall, the picture that emerges is one of more intensive inter- rather than intra-industry exchanges between India and ASEAN in the green and digital space, which could be consistent with complementarities between the two: for instance, semiconductors and lithium-ion batteries are important inputs for some environmental goods. It is also possible that at a more detailed level, i.e. within

individual supply chains, there is exchange taking place of different, narrowly defined components in each direction – another type of complementarity. However, a detailed breakdown of each supply chain, potentially covering hundreds of individual products, is outside the scope of this chapter. In the absence of distortionary policies – see further below – this pattern of trade would be consistent with different patterns of comparative advantage in the two countries, whether due to resource endowments or technology, or some combination of these and other micro-level factors. Two-way trade in similar but differentiated products is relatively limited in terms of the overall flows between ASEAN and India, which is reflective of distinct patterns of specialisation in the bilateral relationship that are likely reflective of broader economic factors.

Figure 2: Exports by India to ASEAN, 2017–2022, by Category, Green and Digital Goods

(US\$ billion and percentage of total)



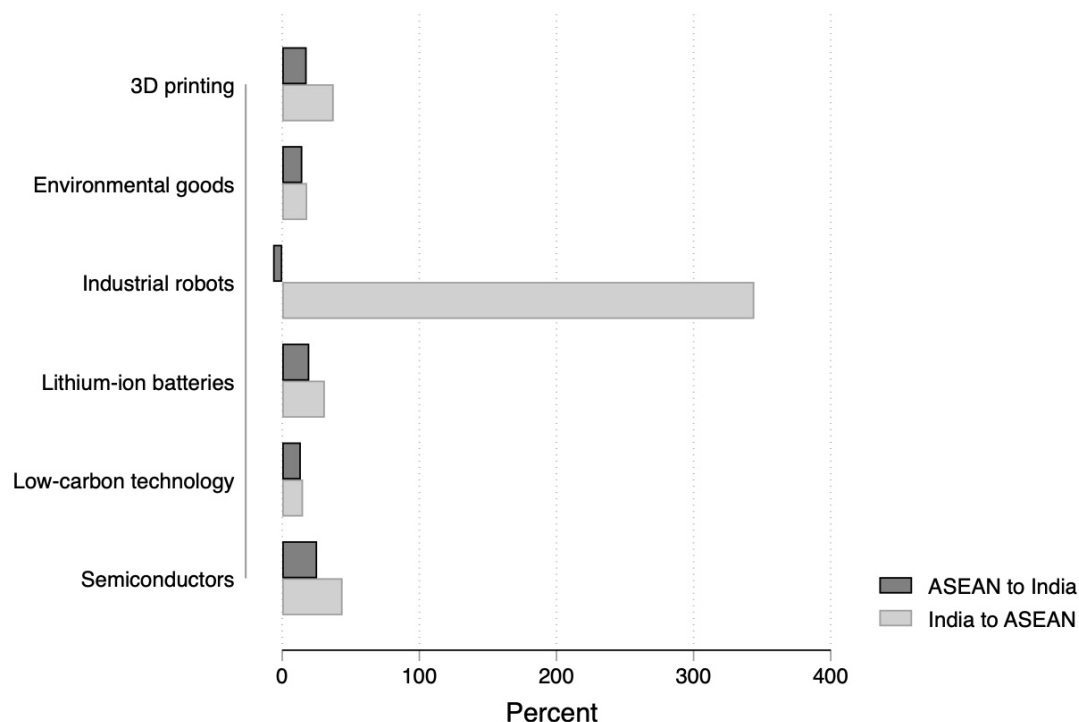
ASEAN = Association of Southeast Asian Nations.

Note: Exports are estimated using mirror data.

Source: United Nations (2024), Comtrade Database, 2017-2022. <https://wits.worldbank.org/> (accessed 1 April 2024).

Figure 3 takes the analysis of recent growth a step further by computing compound annual growth rates for trade in each direction, taking each product category separately. In both directions, these rates are generally high, but stronger in the direction of exports from India to ASEAN than from ASEAN to India. The only sector where performance is noticeably different is industrial robots: the growth of Indian exports to ASEAN is extremely rapid, whereas exports by ASEAN to India have fallen over time. This pattern could be due to evolving comparative advantage and export capacity in India, but could also be linked to market interventions designed to boost domestic production in this sector.¹ In any case, Figure 3 reinforces the impression from Figures 1 and 2 that all categories of green and digital trade between India and ASEAN are seeing substantial growth, albeit from very different baselines depending on the product cluster and direction of trade.

Figure 3: Compound Annual Growth Rates of ASEAN–India Trade, by Direction and Category, 2017–2022, Green and Digital Goods
(% per year)



ASEAN = Association of Southeast Asian Nations.

Note: Exports are estimated using mirror data.

Source: United Nations (2024), Comtrade Database, 2017-2022. <https://wits.worldbank.org/> (accessed 1 April 2024).

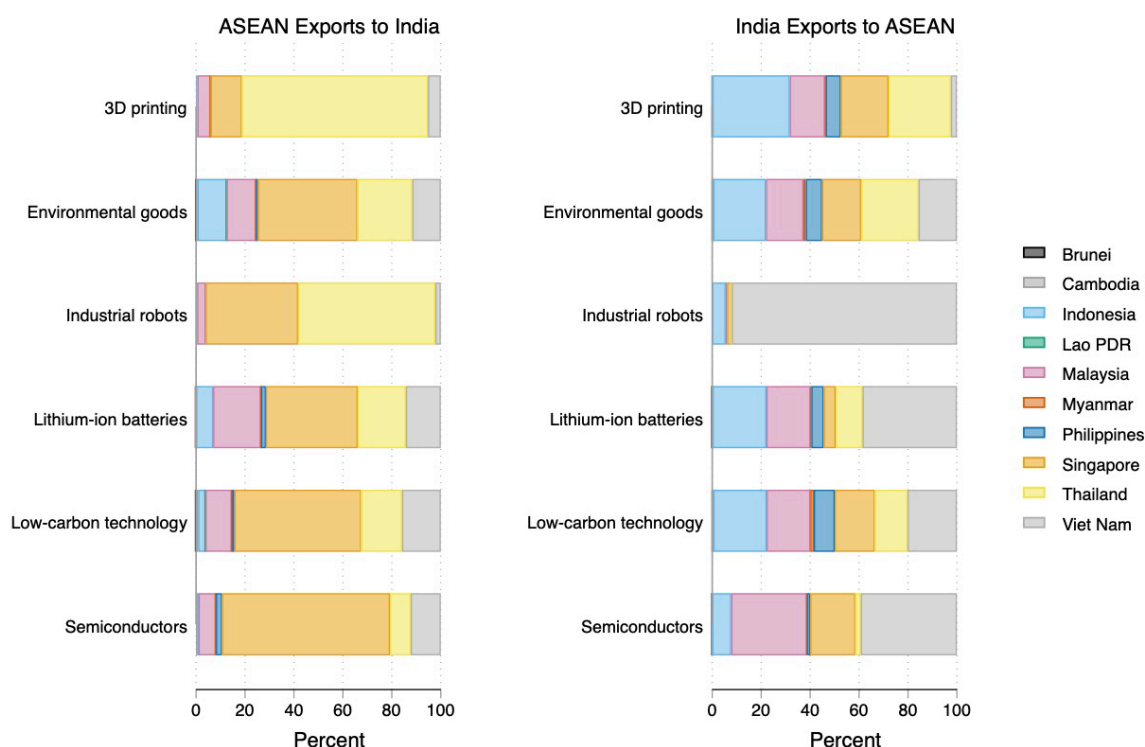
¹ India has instituted subsidies ('production linked incentives') in a range of sectors, mostly medium and high technology (Ministry of Commerce & Industry, 2023). There is as yet no rigorous assessment of their effects either on targeted sectors or on other countries, given the short length of time that they have been in operation. It also has a range of investment incentives, focusing on greenfield manufacturing investments (India Briefing, n.d.).

Figures 1–3 are useful for showing recent trends in the different product categories covered by the 'green and digital' terminology developed above. However, ASEAN is a very diverse region, so it is important to be alive to the potential for different trade behaviour at the level of individual ASEAN Member States (AMS) in terms of their relationships with India in the green and digital space.

Figure 4 pursues this issue by breaking down ASEAN's total exports to and from India in each category into proportions coming from individual AMS. It paints a complex picture, with significant heterogeneity across countries. In terms of exports from ASEAN to India (left panel), the dominant players are Singapore and Thailand, with lesser roles played by Malaysia, Indonesia, and Viet Nam. The other AMS only play marginal roles as exporters of green and digital goods to India. However, the relative importance even of these larger players varies considerably by product category: for instance, Thailand dominates in the 3D printing space, but Singapore accounts for most exports in semiconductors and low-carbon technology. Malaysia's role is more significant in lithium-ion batteries relative to other sectors, while Indonesia's share of exports is largest in environmental goods.

The right panel looks at exports in the opposite direction, from India to ASEAN. While there is again a significant degree of heterogeneity in terms of the importance of each individual AMS as a source of demand for Indian exports in the green and digital space, the picture is somewhat different on the export side. Demand is more evenly split across Indonesia, Malaysia, Singapore, Thailand, and to a lesser extent the Philippines. Viet Nam plays a major role as an importer of industrial robots, and has significant roles in semiconductors, low-carbon technology, lithium-ion batteries, and environmental goods.

Figure 4: Exports Between AMS and India, 2022, by Category, Green and Digital Goods
(percentage of total)



ASEAN = Association of Southeast Asian Nations, AMS = ASEAN Member State/s.
 Note: Exports are estimated using mirror data.
 Source: United Nations (2024), Comtrade Database, 2022. <https://wits.worldbank.org/> (accessed 1 April 2024).

The data show that ASEAN and India are deepening their trade relationship with respect to green and digital goods, even against a background of diverse domestic policies in all countries involved.² The value of that relationship is non-negligible, though exports are much higher in value terms for ASEAN than for India. The trade pattern largely reflects a complementary or inter-industry structure. As a heterogeneous region, there is unsurprisingly considerable difference between individual AMS in terms of the degree and nature of their participation in this market. However, as some countries seek to reduce the role of Chinese-origin trade in their supply chains, there is an opportunity to boost trade with other countries, including India (Saxena, 2024).

The ASEAN–India relationship is established and growing in the green and digital space. However, it is only one aspect of the bilateral trade relationship, which amounted to

² Some policy changes are controversial in terms of their economic impacts, such as Indonesia’s ban on nickel imports with a view to promoting domestic processing (Lu, 2024). By contrast, Malaysia has committed to an ambitious rollout of renewable energy (US Department of Commerce, 2024).

US\$131.6 billion in 2022. Summing the product categories used here gives a value of US\$12.4 billion in 2022, which is equivalent to under 10% of total bilateral trade. It is also important to stress that this figure overstates the importance of green and digital trade to the bilateral relationship because the product categories are not mutually exclusive: i.e. some products are included in more than one category, so there is some amount of double counting. A realistic conclusion is that the green and digital space is established and growing in importance in ASEAN–India trade, but that it still accounts for a modest share of the overall bilateral relationship. In addition, the reality for individual AMS is quite different depending on factors like geography, pattern of comparative advantage and specialisation, and per capita income level.

Beyond trade, there are also emerging investment and policy linkages between India and ASEAN in the green and digital space. However, these links are difficult to quantify, as data are not as disaggregated as in the case of goods. Anecdotally, however, India has major investment needs in renewable energy and is developing the capacity to be an important player in that sector in the region and potentially beyond. India and ASEAN have therefore initiated collaboration in this area, which has important synergies with the development of a regional ASEAN-wide power grid (Suryadi, 2022). Similar initiatives are evident in other areas, such as India’s emerging manufacturing capacity in lithium-ion batteries, where Viet Nam has made a substantial investment to support its developing electric car industry (Tran, 2024). From outside the region, electric vehicle manufacturer Tesla seems poised to make a US\$500 million investment in India, albeit linked to a preferential easing of burdensome import tariffs (Mehta and Shah, 2024). It is important to keep the scale of these kinds of investments in mind, however: according to the World Development Indicators, US\$500 million in new inward investment represents around 1% of total inward investment in India in 2022. In the opposite direction, Indian ride-hailing firm Ola is examining the scope for expanding investment in ASEAN, including using electric vehicles (Reuters, 2023).

4 EXTRA-REGIONAL TRADE LINKAGES

The previous section looked at trade between ASEAN and India in green and digital products, as defined above. While growth in the bilateral relationship has been impressive, it is important to contextualise it by reference to both the size of that relationship relative to other types of trade, as well as the growth rates of green and digital trade with other major partners. This section turns to that task.

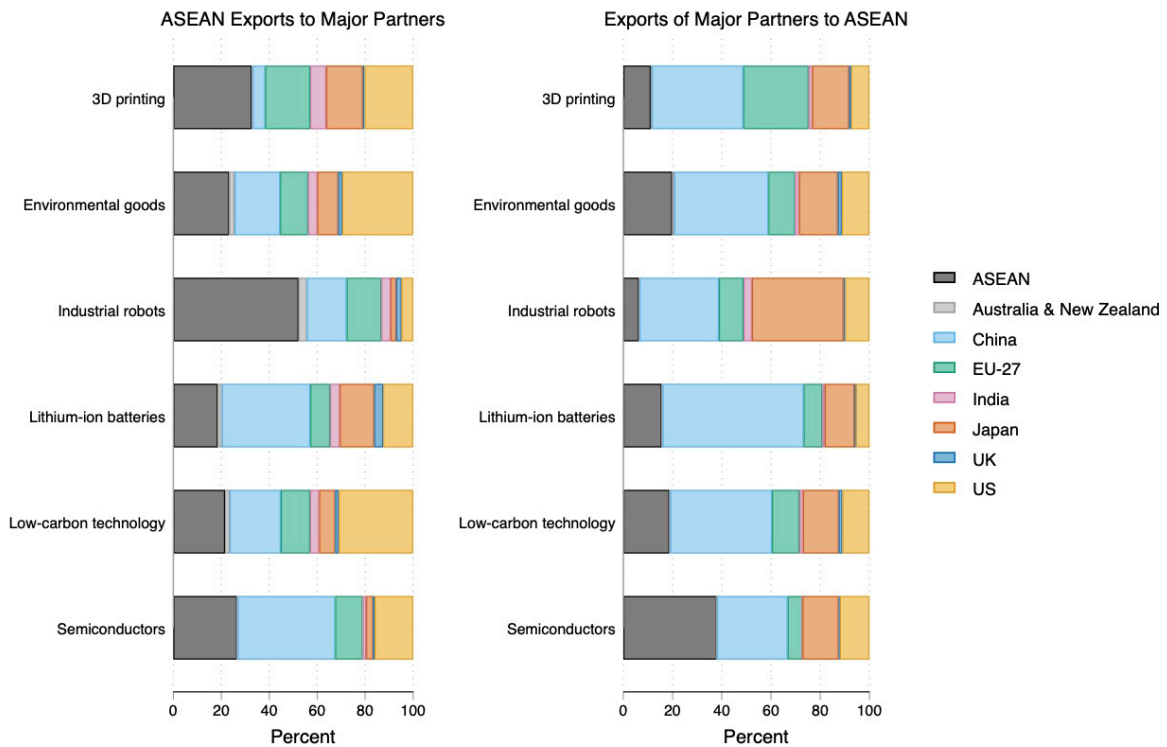
Analytically, the approach is to compose an illustrative group of major markets. The focus is on ASEAN’s RCEP partners – a trade agreement India ultimately chose not to join – as well as the two major external markets outside the RCEP: Europe (separated into the European Union member states (EU-27) and the United Kingdom (UK)) and the US. The full list is Australia and New Zealand (aggregated into a single region), China, the EU-27, India, Japan, the UK, and the US.

Figure 5 breaks down ASEAN's trade with the full group by product cluster and the proportion of each market in the total. The left panel shows ASEAN's exports to the major markets, while the right panel shows trade in the opposite direction – ASEAN's imports from the major markets. A key finding is that despite recent growth, the ASEAN–India relationship remains somewhat marginal to ASEAN's total trade integration in the green and digital space. Intra-ASEAN trade, as well as trade with external partners like China, Japan, the EU-27, and the US, is far more important in relative terms than ASEAN–India trade. This finding highlights the conclusion above that ASEAN–India trade has been growing rapidly, but from a relatively low benchmark in some cases.

A second finding is that this conclusion holds across most sectors, albeit with a minor degree of heterogeneity. In 3D printing, ASEAN's exports to India are more significant in relative terms than in other product clusters, but their role is still relatively marginal compared with the role of other markets. An interesting example is industrial robots, where the analysis above showed explosive growth of exports from India to ASEAN. But Figure 5 puts that finding in perspective: India nonetheless remains a marginal supplier of industrial robots to ASEAN, with countries like China, the EU-27, Japan, and the US playing a much more important role.

The conclusion to draw from Figure 5 is that it is indeed important to keep the overall size of the ASEAN–India relationship in perspective in assessing data like those in Figures 1–3. Green and digital products are characterised by a high level of technological content in many cases, so they are not an obvious locus of comparative advantage for a middle-income economy like India, relative to high-income economies like Japan, the EU-27, or the US. China is a middle-income economy, but it has a well-developed manufacturing base, which India still largely lacks, having had difficulty in growing its share in world manufacturing trade over time.

Figure 5: Exports Between ASEAN and Major Partners, 2022, by Category, Green and Digital Goods (% of total)



ASEAN = Association of Southeast Asian Nations, EU = European Union, UK = United Kingdom, US = United States.

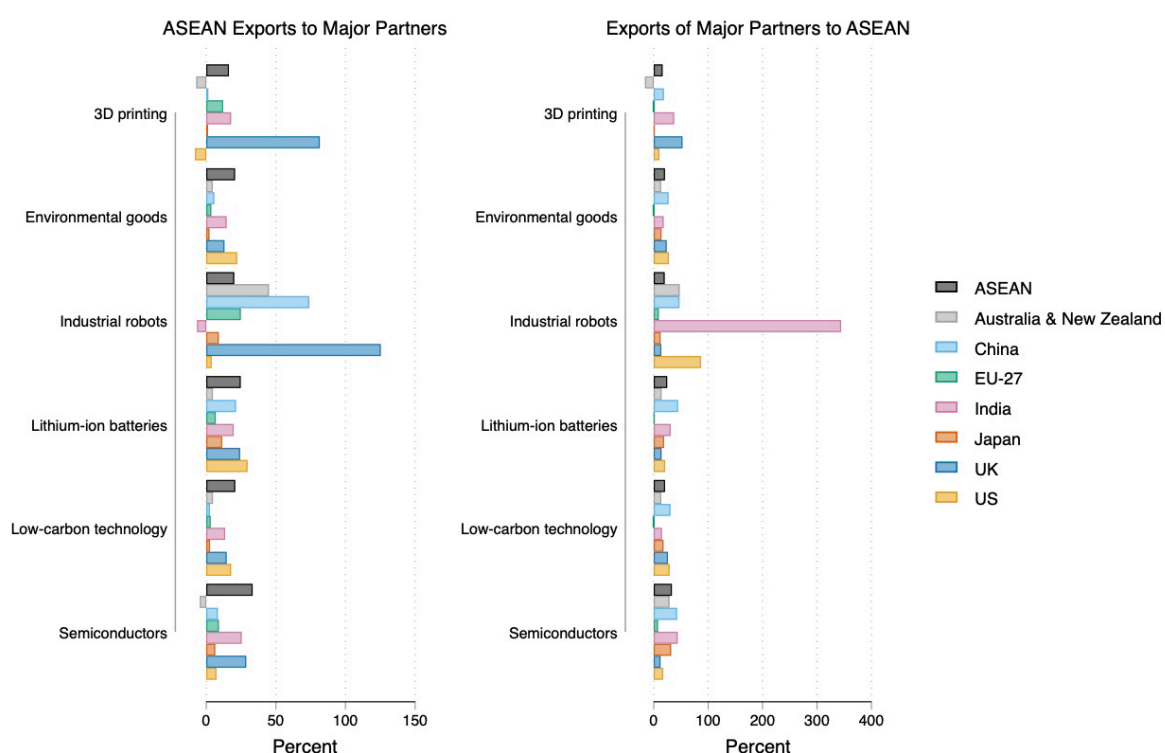
Note: Exports are estimated using mirror data, except for exports from the EU-27 to ASEAN where reported data are used.

Source: United Nations (2024), Comtrade Database, 2017–2022. <https://wits.worldbank.org/> (accessed 1 April 2024).

Figure 6 takes a different approach, looking at growth rates over recent years. The objective is to put the growth rate of ASEAN–India green and digital trade into context against the growth rate of trade in those same product clusters with other markets. The performance of the ASEAN–India linkages looks more impressive in this light, as growth rates of trade with India are typically strong in context, sometimes far faster than what is seen elsewhere, as in the case of industrial robots. However, India does not stand out as the overall fastest growing source or destination for ASEAN's green and digital trade. That picture is nuanced, with different countries playing different roles according to the sector. For instance, the UK stands out as a rapidly growing source of demand for ASEAN's green and digital exports. Except for industrial robots, the growth rate of ASEAN exports to India is not noticeably higher than that of ASEAN exports intra-regionally, or to China. On the import side of the ledger, and again excluding industrial robots, India's share is growing relative to others in a few sectors, but generally its growth rate is not markedly faster

than what is seen elsewhere. The key conclusion to draw, therefore, is that while ASEAN–India trade is growing rapidly in the green and digital space, the same is true of ASEAN’s trade relationship with other major partners as well. The overall picture is one of robust growth by India, and explosive growth in one product cluster, so there is an expectation that India’s share of ASEAN’s total green and digital trade could grow over time, but that growth is likely to be modest in share terms given the growth rates observed with other major markets.

Figure 6: Compound Annual Growth Rates of ASEAN Trade with Major Partners, by Direction and by Category, 2017–2022, Green and Digital Goods
(% per year)



ASEAN = Association of Southeast Asian Nations, EU = European Union, UK = United Kingdom, US = United States.

Note: Exports are estimated using mirror data, except for exports from the EU-27 to ASEAN where reported data are used.

Source: United Nations (2024), Comtrade Database, 2017–2022. <https://wits.worldbank.org/> (accessed 1 April 2024).

A subsidiary conclusion from the analysis above is that intra-ASEAN trade is important and vibrant when it comes to green and digital product clusters. This finding is not surprising given the scope and ambition of the ASEAN Economic Community, but it highlights the need to give appropriate recognition to intra-regional trade, even while the objective of deepening external trade relationships remains appropriate. However,

singling out India is not an obvious strategic goal for ASEAN based on recent data: rather, the approach should be to manage policies that affect exports and imports of green and digital goods so that local firms have access to high-quality, reasonably priced products, as well as relatively open outlets for their own production. Trade with India can fulfil that goal in part, but as of writing, relationships with other markets are generally more important to ASEAN. The next section turns to the policy dimension – identification of sets of measures that can help boost ASEAN's trade integration in the green and digital space with India, but also more broadly with other major partners.

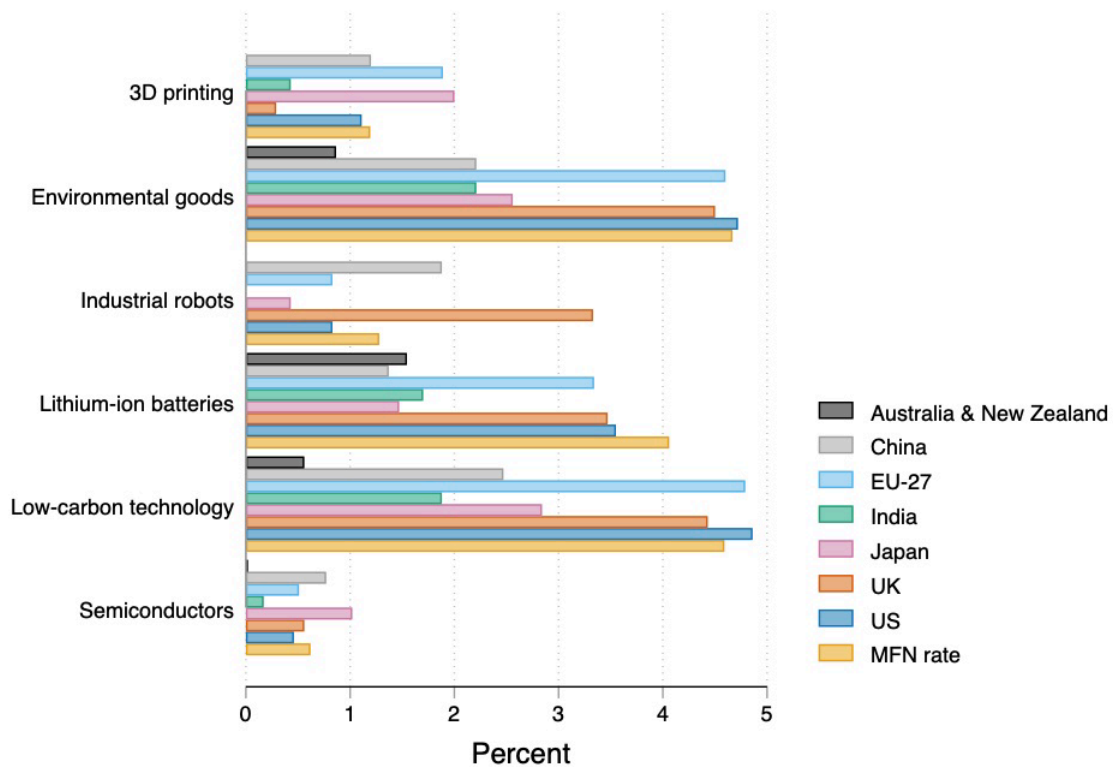
5 Looking Forward: Policy Options to Boost Trade

Policy can have a major impact on bilateral trade. Examining the range of policies both in ASEAN and in India that could help boost trade in green and digital products requires paying attention to several areas, ranging from traditional trade policies to new-generation industrial policies. The data available for different types of policies vary substantially, so the objective of this section is to be selective but relevant: the focus is on policies that are known to shape bilateral trade and that can be compared internationally using well-respected sources. The last part of the section discusses emerging issues on the policy radar where comprehensive data are not yet available.

The starting point for an analysis of trade policy surrounding green and digital trade between India and ASEAN is tariffs. While there is an FTA in force between the parties, tariffs remain relevant for two reasons. First, FTA coverage is rarely complete, so there could be exceptions from duty-free treatment that affect green and digital goods. Second, it is important to compare bilateral tariff rates with rates applied to other major trading partners, as producing complex goods frequently requires access to imported intermediates from a range of sources. A component of tariff analysis that needs to be considered is the WTO Information Technology Agreement, which commits a broad range of members to zero tariffs on listed products, some of which fall into the digital product clusters considered here.

Figure 7 looks at the situation from ASEAN's point of view, comparing most favoured nation (MFN) rates with effectively applied rates (i.e. rates that take full account of preferential agreements). ASEAN's tariffs are generally low to moderate, though the issue of incomplete FTA coverage is real: several FTA partners show non-zero tariff rates for some product categories in the green and digital space. But overall, ASEAN's trade policy is relatively open, although treatment varies substantially even across FTA partners in some sectors. MFN rates paid by countries without an FTA are substantially higher than effectively applied rates for preferential partners, but rates are still relatively low in global and historical comparison.

Figure 7: ASEAN Tariffs vs. Major Partners, 2021, by Product Category
(% ad valorem)



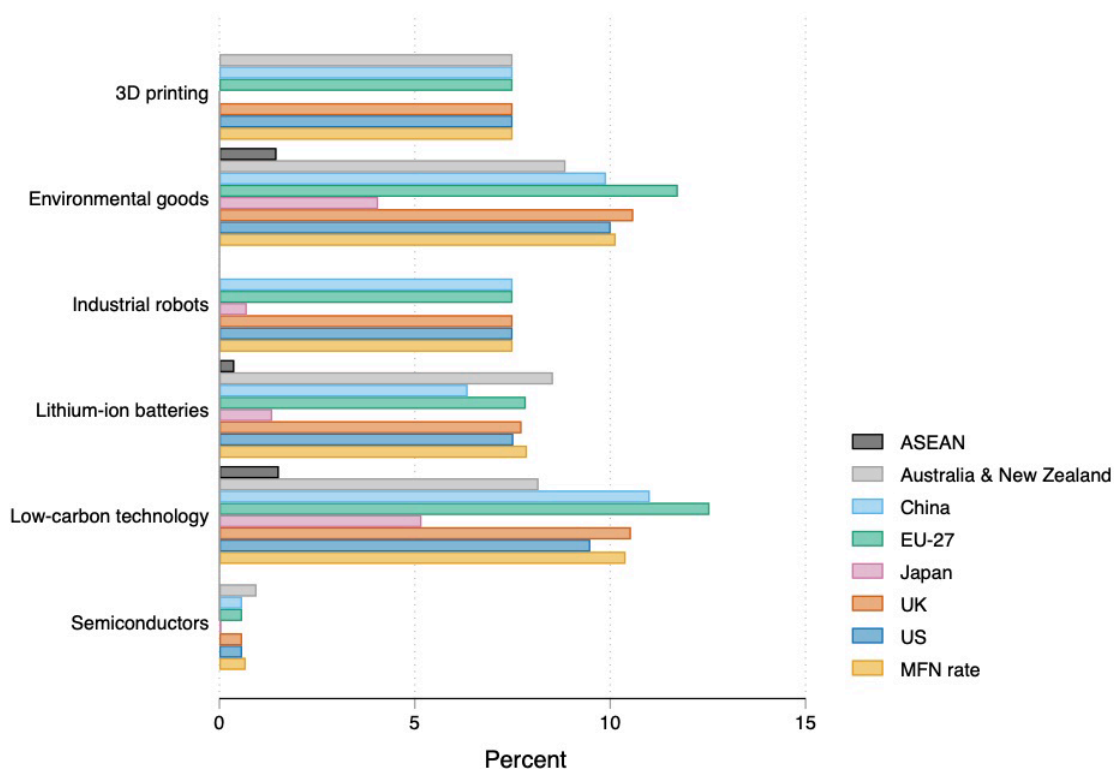
ASEAN = Association of Southeast Asian Nations, EU = European Union, MFN = most favoured nation, UK = United Kingdom, US = United States, WITS = World Integrated Trade Solution.

Note: Applied rates can exceed reported MFN rates due to averaging in the World Bank's WITS based on reported trade flows.

Source: UNCTAD (2024), TRAINS Database, 2021. <https://wits.worldbank.org/> (accessed 1 April 2024).

The picture for India is somewhat different (Figure 8). While India's tariffs are substantially lower than their historical peak before the country's 1991 liberalisation, they remain high by comparison with ASEAN and more broadly compared with many other countries. A key finding is that ASEAN firms enjoy a substantial competitive advantage in the Indian market due to the AITIGA, which significantly cuts tariff rates, sometimes to zero, in green and digital products. The difference in treatment between ASEAN and other major partners reflects the fact that India is generally reluctant to sign FTAs, as indicated by its ultimate decision to withdraw from RCEP negotiations. But the current structure of India's tariff protection suggests that AMS have a significant opportunity to develop exports to the Indian market in circumstances where competitors face substantially higher tariff barriers.

Figure 8: Indian Tariffs vs. Major Partners, 2022, by Product Category
(% ad valorem)



ASEAN = Association of Southeast Asian Nations, EU = European Union, MFN = most favoured nation, UK = United Kingdom, US = United States, WITS = World Integrated Trade Solution.

Note: Applied rates can exceed reported MFN rates due to averaging in the World Bank’s WITS based on reported trade flows.

Source: UNCTAD (2024), TRAINS Database, 2021. <https://wits.worldbank.org/> (accessed 1 April 2024).

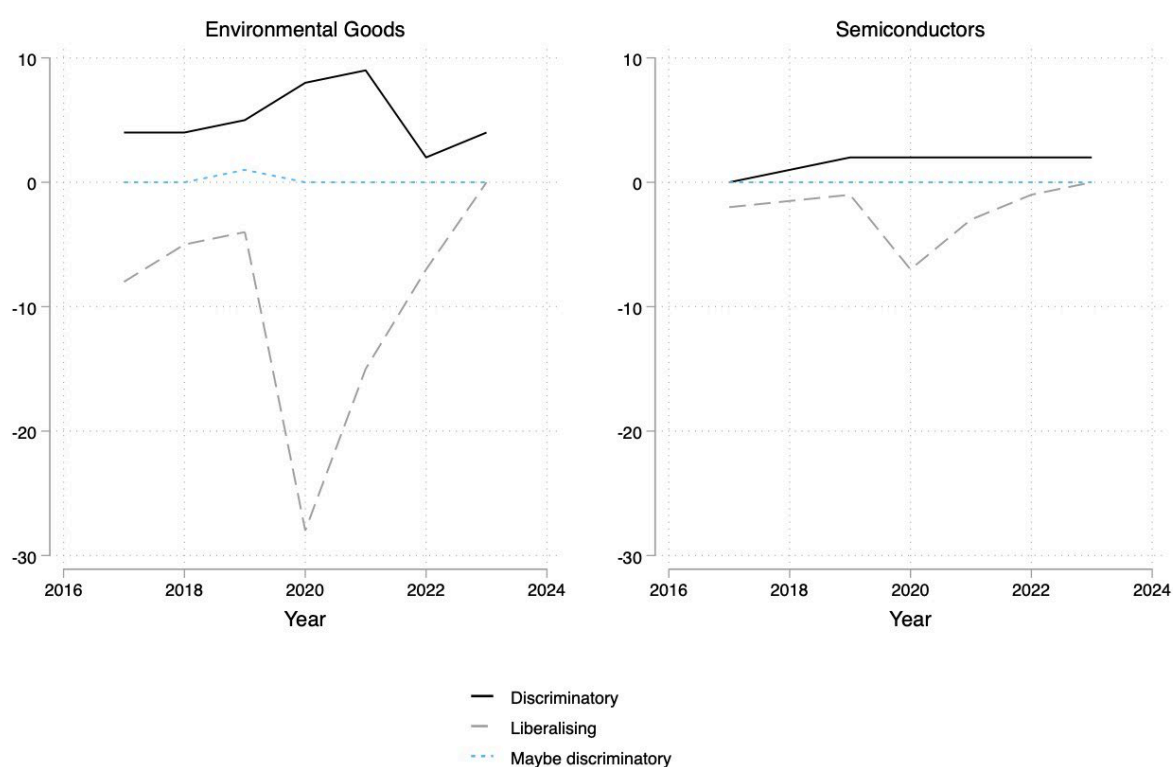
In the modern economy, tariffs are only one of the factors that affect market access, and arguably are not the most important. NTMs also play a crucial role. A broad definition of NTMs is that they cover the full range of policy measures, other than simple tariffs, that drive a wedge between producer prices in the exporting country and consumer prices in the importing country (De Melo and Shepherd, 2018). Using this expansive definition has the advantage of capturing both traditional NTMs (captured by the international Multi-Agency Support Team (MAST) definition, as implemented in the United Nations Conference on Trade and Development (UNCTAD) TRAINS database) as well as new-generation measures linked to the resurgence of industrial policy around the world.

The Global Trade Alert (GTA) is a comprehensive data source on policy measures, including both tariffs and NTMs, which takes the broad approach noted above. It divides measures into those that are clearly discriminatory against foreign providers, those that may be discriminatory, and those that are liberalising. It is important to recognise the

existence of all three sets of measures, as most countries are simultaneously involved in the business of introducing discriminatory measures in some areas or subsectors, while liberalising others. Of relevance to this chapter, the GTA identifies product clusters in 'environmental goods' and 'semiconductors.'

Figure 9 reports data for ASEAN, taking the sum of measures implemented by year in all AMS. There is more policy activity in environmental goods than in semiconductors, which is perhaps partly a factor of the larger number of individual HS products involved. Nonetheless, the balance in ASEAN generally leans towards net liberalisation rather than net restriction. The introduction of discriminatory measures is always a matter of concern, but taking account of the fact that Figure 9 covers all AMS, neither the number of measures nor the comparison between restrictive and liberalising measures is particularly concerning in environmental goods. The picture in semiconductors is similar and even stronger, in the sense that the overall number of measures is lower. So looking at these policies confirms the view that ASEAN continues to maintain, in general but subject to exceptions, a relatively open trade regime for environmental goods and semiconductors, as was the conclusion from the analysis of tariffs.

Figure 9: New NTMs Implemented by ASEAN, 2017–2023, by Product Category
(count)



ASEAN = Association of Southeast Asian Nations, NTM = non-tariff measure.

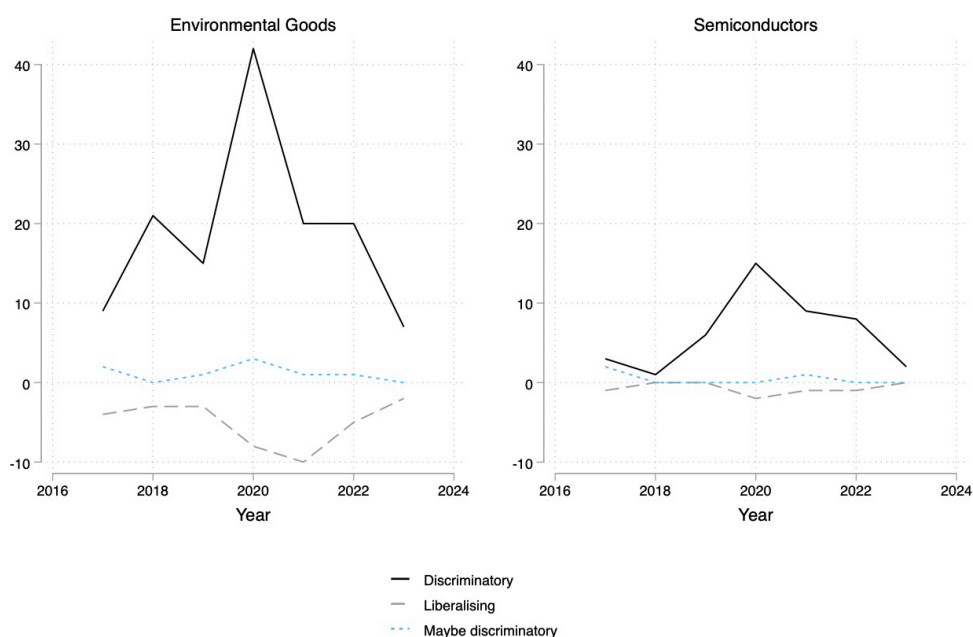
Notes: Liberalising measures are coded as negative. Year is coded as year of announcement.

Source: Global Trade Alert (2024), Global Trade Alert Database, 2017–2023, www.globaltradealert.org (accessed 1 April 2024).

Again, the picture is very different in India. In environmental goods, the number of newly implemented policy measures is much higher than in ASEAN. In addition, the balance is far more towards restriction than liberalisation, compared with ASEAN. So, India is using new tariffs and NTMs to limit access to its market for environmental goods, usually with the objective of boosting reliance on domestic production.³ The effect is less drastic in the case of semiconductors, but it is still present: the number of measures is lower, but the balance is still firmly towards discriminatory measures rather than new liberalisation. So just as India maintains much higher tariffs than ASEAN on green and digital goods so too does it maintain a more restrictive NTM environment.

In terms of the policy measures summarised in Figure 10, discriminatory measures in 2022 in India included incentives for local value addition in solar cells, with the objective of promoting domestic manufacturing and reducing imports (GTA, 2022b). A second example was a requirement that the government procure certain scientific and testing equipment, some of it related to the production of environmental goods, from local producers (GTA, 2022a). Other examples listed in the GTA database include the use of import tariffs, anti-dumping measures, and subsidies.

Figure 10: New NTMs Implemented by India, 2017–2023, by Product Category
(count)



NTM = non-tariff measure.

Notes: Liberalising measures are coded as negative. Year is coded as year of announcement.

Source: Global Trade Alert (2024), Global Trade Alert Database, 2017–2023, www.globaltradealert.org (accessed 1 April 2024).

³ Examples include tariffs on solar energy equipment (Soleos, n.d.), albeit potentially subject to exemptions or reductions more recently. Similarly, import duties on electric vehicles are high, unless companies commit to a minimum level of investment (a trade-related investment measure (Mehta and Shah, 2024)).

Clearly, trade policy represents a risk for ASEAN–India trade in green and digital goods. But the risk is primarily in terms of access to the Indian market for ASEAN exports. The analysis here has shown that while ASEAN producers enjoy important tariff preferences, the prevalence of new, restrictive NTMs is a significant issue for producers in all regions, including ASEAN. The measure of trade policies used above does not distinguish between measures that are focused on just one country or region, and those that are MFN in scope. However, experience and previous analysis suggest that most NTMs are *de facto* MFN. In India’s case, for example, many of the measures recorded in Figure 10 relate to issues like import tariffs applied regardless of source, and production subsidies. Both are discriminatory against foreign products in general, but are MFN in the sense that they do not single out individual origin points for special treatment.

One area that needs attention is subsidies, as they are a type of NTM that has cross-border impacts. The measures from the GTA database take account of subsidies, but the above figures place them in the context of the full raft of NTMs brought into force. From the perspective of ASEAN–India trade, subsidies are a mixed bag. On the one hand, subsidies in one economy make goods less expensive for consumers in the other. But on the other hand, they make competitive conditions more difficult for firms in the other economy and can be highly distortionary in global and regional markets.

A forward-looking agenda for policy between ASEAN and India would take account of these realities. Key points to be examined by policymakers include the following:

- Preservation and expansion of duty-free market access under the AITIGA.
- Revision of the AITIGA to include additional disciplines, following the inclusion of AMS in the RCEP.
- Greater attention to NTMs, particularly in India.
- Greater attention to subsidies.
- Revision of the AITIGA to include stricter and more operational disciplines on NTMs and subsidies.

Many of these points are relevant to the ASEAN–India trading relationship overall. But the analysis here has shown that they are of salience for the green and digital space, which has been growing rapidly in a globally competitive environment. From a sustainable development standpoint, it is important for both regions to continue integrating into world markets for green and digital goods, and part of that process involves deepening their bilateral relationship, where doing so does not conflict with broader multilateral aims.

6 Conclusion

This chapter has shown that green and digital trade is an important part of the ASEAN–India relationship and that it has undergone substantial growth in recent years. However, in terms of both parties’ overall trade integration in the green and digital space, the bilateral relationship plays a modest role: there is scope for growth, but relationships

within ASEAN (intra-regional trade) and with other players like China, the EU, and the US are typically more important.

Looking forward, there are various ways in which policy settings could be more facilitative of green and digital trade. A key priority on the Indian side is to facilitate market access, although ASEAN already enjoys a privileged position under the AITIGAFTA, as most goods enter at zero or low rates. ASEAN applies generally low tariffs, so the competitive advantage of Indian firms from the AITIGA is less pronounced. However, there is a strong case for focusing more on NTMs moving forward. India has been active in introducing discriminatory NTMs affecting green and digital trade, to the extent that data are available and easy to map to green and digital product categories. ASEAN has been less active, and the balance between restrictive and liberalising measures is more favourable. A key priority is therefore for Indian policymakers to address the need to facilitate external trade by rationalising NTMs and avoiding unnecessary or inefficient discrimination. There is clear scope to liberalise policies further and thus facilitate trade.

Even though India ultimately declined to participate in the RCEP, there is scope to upgrade the AITIGA to deal explicitly with green and digital issues. Questions that deserve particular attention are NTMs and subsidies, as well as the specifics of digital regulation and the removal of remaining tariff barriers. While the relationship has clear potential, it will be important for policymakers on both sides to focus on maintaining a liberal stance with respect to the trading system in general, given that successful green and digital trade usually involves the use of inputs from a range of sources. ASEAN is currently closer to this paradigm than India.

References

- De Melo, J. and B. Shepherd (2018), 'The Economics of Non-Tariff Measures: A Primer', in UNCTAD, *Non-Tariff Measures: Economic Assessment and Policy Options for Development*, Geneva: United Nations Conference on Trade and Development, pp.121–57.
- GTA (2022a), 'India: Local Procurement for Scientific Lab and Test Equipment in Government Purchases', 29 November. <https://www.globaltradealert.org/intervention/121014>
- (2022b), 'India: Second Tranche of a Production Linked Incentive Scheme for the Manufacture of Solar PV Modules Approved', 21 September. <https://www.globaltradealert.org/intervention/108839>
- Helble, M. and B. Shepherd, eds. (2017), *Win-Win: How International Trade Can Help Meet the Sustainable Development Goals*. Manila: Asian Development Bank Institute.
- IMF (n.d.), 'Trade in Environmental Goods', Working paper, <https://climatedata.imf.org/documents/ad5179b954ed4a8389bf6400324a901e>
- IMF (2017a), 'Annex: List of Harmonized System (HS 2017) Codes Included in the Definition of Environmental Goods for the IMF Climate Change Indicators Dashboard'. <https://www.arcgis.com/sharing/rest/content/items/7ae2c28c03f14887adfa4ca7cb7bfad/data>
- (2017b), 'Annex: List of Harmonized System (HS 2017) Codes Included in the Definition of Low Carbon Technology (LCT) Products for the IMF Climate Change Indicators Dashboard'. <https://www.arcgis.com/sharing/rest/content/items/db7225ef9451443cb6907e880e43cd71/data>
- India Briefing (n.d.), 'Incentives for Doing Business in India'. <https://www.india-briefing.com/doing-business-guide/india/why-india/incentives-for-doing-business-in-india>
- Lu, C. (2024), 'Indonesia Has Grand Ambitions for Its Nickel Industry', *Foreign Policy*, 13 February. <https://foreignpolicy.com/2024/02/13/indonesia-election-nickel-economy-energy-jokowi-prabowo/#:~:text=Eager%20to%20build%20out%20higher,the%20minerals%20in%20the%20country>
- McMahon, K. (2022), 'Trade Codes Related to the Lithium-Ion Battery Supply Chain in the United States, the European Union, and the People's Republic of China', United States Geological Survey data release. <https://www.sciencebase.gov/catalog/item/6140a2add34e1449c5d3ce4e>.

- Mehta, T. and A. Shah (2024), 'In Big Win for Tesla, India to Lower EV Import Tax if \$500 mln Invested', Reuters, 15 March. <https://www.reuters.com/business/autos-transportation/india-approves-policy-boost-e-vehicle-manufacturing-2024-03-15/>
- Ministry of Commerce & Industry (2023), 'Production Linked Incentive Schemes for 14 Key Sectors Aim to Enhance India's Manufacturing Capabilities and Exports', Press release, 2 August. <https://pib.gov.in/PressReleasePage.aspx?PRID=1945155>
- Pigato, M.A., S.J. Black, D. Dussaux, Z. Mao, M. McKenna, R. Rafaty, and S. Touboul (2020), *Technology Transfer and Innovation for Low-Carbon Development*. Washington, DC: World Bank.
- Reuters (2023), 'Ola Plans \$920 Million India Investment in Electric Cars, Batteries', 18 February. <https://www.reuters.com/business/autos-transportation/ola-plans-920-mln-india-investment-electric-cars-batteries-2023-02-18/>
- Saxena, C. (2024), 'The Geopolitics of De-Risking from China: Is India in for a Win?', Observer Research Foundation, Expert Speak, 2 February. <https://www.orfonline.org/expert-speak/the-geopolitics-of-de-risking-from-china-is-india-in-for-a-win>
- Soleos (n.d.), 'How Import Duty on Solar Panels Affects Their Prices and Quality in India'. <https://www.soleosenergy.com/impact-of-import-duty-on-solar-panels-effect-on-its-price/#:~:text=From%20April%201%2C%202022%2C%20the,not%20attract%20a ny%20import%20duty>
- Suryadi, B. (2022), 'ASEAN–India Cooperation on Energy Transition', *The ASEAN*, 21 May. <https://theaseanmagazine.asean.org/article/asean-india-cooperation-on-energy-transition/>
- Tran, J. (2024), 'Vietnam EV Maker VinFast to Invest up to US\$2 billion in India', *The Business Times*, 6 January. <https://www.businesstimes.com.sg/international/asean/vietnam-ev-maker-vinfast-invest-us2-billion-india>
- US Department of Commerce (2024), Malaysia – Country Commercial Guide. <https://www.trade.gov/country-commercial-guides/malaysia-renewable-energy#:~:text=Malaysia%20has%20committed%20to%20increase,capacity%20from%206%20to%2014GW>