

ASEAN DEFA:

Estimating the impacts of key DEFA digital trade provisions on ASEAN firms, trade, and economies



NEXTRADE GROUP
World trade is changing. Are you?

Table of Contents

1.	INTRODUCTION	3
2.	ASEAN Trade and DEFA's Potential Impacts	5
3.	DEFA's enabling crossborder data transfer	9
4.	Moratorium on duties on electronic transmissions	17
5.	Nondiscriminatory treatment of digital products	21
6.	DEFA as a means to attract foreign direct investment	25
7.	Conclusion	26

1. INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) digital economy and trade have expanded in the past decade. Digitally deliverable services trade has emerged as a growth driver of ASEAN economies' trade, significantly outpacing the growth of commercial services trade in most ASEAN economies. In August 2023, ASEAN Economic Ministers took a step toward cementing and expanding these gains, by endorsing the study on the ASEAN Digital Economy Framework Agreement (DEFA).¹ The study identified nine core elements that would be pertinent to the agreement – digital trade, cross-border ecommerce, cybersecurity, digital ID, digital payments, cross-border data flows, competition policy, digital skills development, and other emerging topics that will be discovered through the DEFA negotiations. In a milestone, talks toward the DEFA were launched during the 10th ASEAN Economic Community dialogue at the end of November 2023.²

The purpose of this paper, part of a series of papers, is to support ASEAN Members and other key stakeholders in considering the design of the DEFA to ensure it is an agreement that would safeguard and amplify trade and digital trade in the ASEAN, especially among the region's small and medium enterprises (SMEs), and promote broader synergies with the many other digital trade agreements in the Asia-Pacific.

This paper focuses on discussing and assessing the impacts in the DEFA of widely adopted digital trade provisions: open data transfer rules to enable firms to move data across borders, a permanent moratorium on duties on electronic transmissions, and nondiscriminatory treatment of digital products.

Today, the ASEAN region's hard-won digital trade gains are at risk in the absence of digital trade rules that lock in an enabling regulatory environment. New restrictions to cross-border transfer of data, duties on electronic transmissions, and discriminatory treatment against foreign digital products would all significantly increase ASEAN firms' production trade costs, weigh on export competitiveness, reduce trade, and undermine consumption. However, DEFA could pre-empt these outcomes: the various pro-digital trade provisions, if adopted in the DEFA, would lock in good policies and promote regulatory certainty for regional businesses, thereby both safeguarding existing growth in digital trade and unlocking further digital trade and investment in the region.

The paper applies econometric work and MSME surveys with 800 ASEAN firms to estimate the DEFA's gains from the DEFA and the three key provisions. The main findings of this paper are as follows:

- The DEFA is critically timed to lock in good policies conducive to the region's digital services exports, digital ecosystems, and digital value chains. ASEAN economies have a keen offensive interest in digital trade, which is the fastest growing component of the region's exports. ASEAN firms are also highly integrated in regional and global digital value chains: some 90 percent of digital product and services exporters also import digital products and services in order to add value to their production processes, and subsequently export digital products and services containing this imported value-added. Thus digital trade policies on both import and export sides shape ASEAN firms' competitiveness in export markets. The DEFA is a critical

instrument to protect the expansion of ASEAN economies' digital product and services exports and ensure regional supply chains remain a source of strength for ASEAN exporters.

- The DEFA would impart important trade and economic growth gains in the ASEAN economies. Based on estimates of the gains from prior digital trade agreements, the DEFA could promote ASEAN services and digital services exports by \$77 billion, equivalent to 2 percent of the region's GDP and about 5.8 million jobs. The DEFA would however have much broader impact, as it would also support the supply chains and export operations of today's highly digitized manufacturing companies. Based on prior econometric work on the impacts of digital trade chapters in trade agreements, the DEFA could promote trade in goods in the ASEAN in a more conservative estimate by \$75 billion, and even as much as by \$326 billion.
- Access to data from their foreign markets is vital to ASEAN firms' value creation and competitiveness. ASEAN region firms daily use digital data from their own and other markets to make decisions, improve their services, and deliver their services. By ensuring ASEAN SMEs can continue using data for value-creation, the DEFA could safeguard some \$65-\$87 billion in annual value-creation based on data among ASEAN SMEs, or about 1.7-2.2 percent of the region's GDP. By enabling SMEs to keep turning data into value, the DEFA would also promote these firms' export competitiveness in extra-regional markets.
- The various DEFA provisions would have further benefits. For example, by pre-empting the imposition of barriers to the transfer of data among the members, DEFA could, per econometric evidence, conservatively yield a five percent trade boost across the ASEAN, equivalent to \$9.2 billion in intra-regional services exports.
- Using the DEFA to create a permanent moratorium on duties on electronic transmissions would provide ASEAN exporters with certainty that their own or regional governments will not impose arbitrary barriers to digital products and digital services trade. This certainty could conservatively, depending on methodology, be worth \$130 million-\$160 million in regional digital products and services exports.
- ASEAN total exports of digital products are some \$31 billion, of which \$5.2 billion are destined to the intra-regional market. The DEFA could pre-empt discriminatory treatment on these digital product exports and promote intra-regional trade by about \$1.5 billion. By ensuring a level playing field between domestic and foreign digital products, DEFA provisions against discrimination of foreign digital products would also encourage innovation and investment in digital product industries, such as in creative industries, app development, and audiovisual industries.
- By locking in good policies across the region, the ASEAN DEFA could also promote foreign direct investment (FDI) by regional and global technology companies, which could propel further digital exports. In a rough estimate, the DEFA could promote ASEAN FDI by \$448 million-\$896 million.³ This FDI would also bring to the regional market new sophisticated services to promote local businesses and foster ecommerce ecosystems, transfer knowledge and skills to local economies, and promote digital services exports. Further research is warranted on the potential of the DEFA to promote FDI in technology and other sectors.

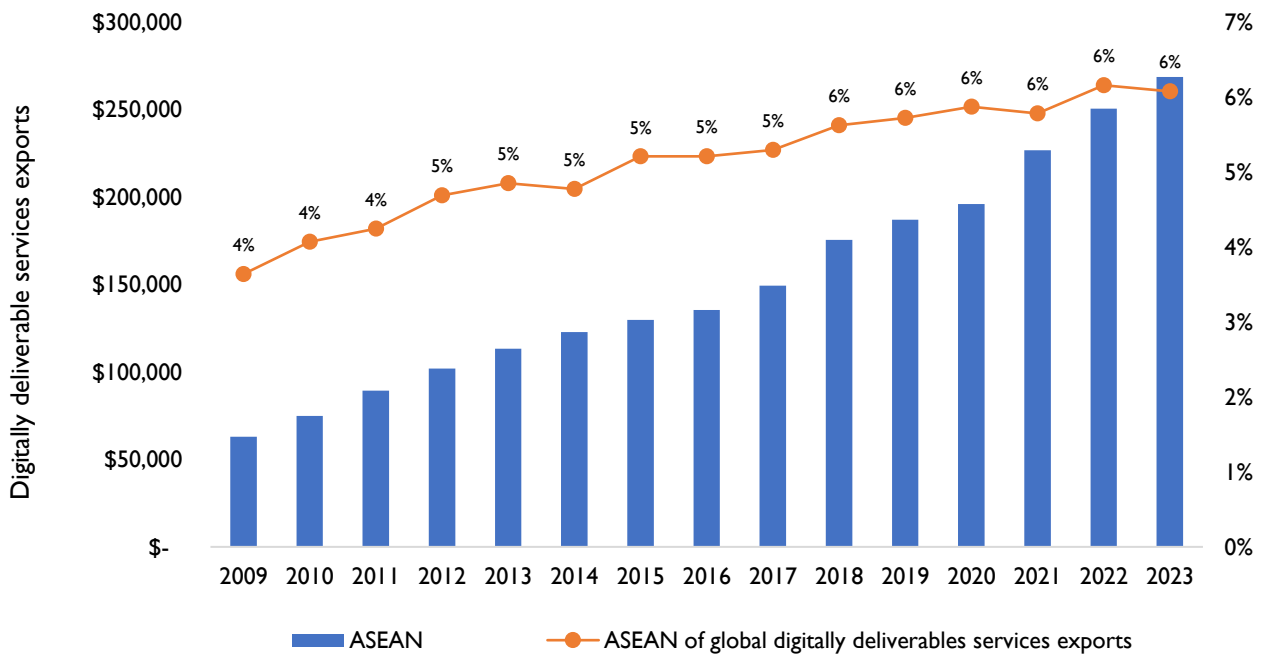


2. ASEAN trade and DEFA's potential impacts

Trade is growing in the ASEAN. Intra-regional exports of goods have grown at 2.7 percent per year in 2013-22 and intra-regional services exports at an annual average of 1.3 percent. However, as detailed in the first paper in this series, digitally deliverable services exports have more than tripled since 2009 to \$269 billion by 2023, rising to make up over one-half of all commercial services exports and making ASEAN into a top-3 exporter of digital services in the world (figure 1).

Malaysia, the Philippines, Singapore, and Thailand have consistently been the largest contributors to the region's digital services exports; Vietnam, Singapore, Indonesia, and Cambodia, and the Philippines have scored the fastest growth rates. Intra-regional digital services exports have also grown robustly, at an annual average of 5.3 percent in 2012-21. By 2021, digital services exports had risen to 53 percent of the region's commercial services exports. Behind these trade flows are a diverse range of companies –the region's leading manufacturers, banks, and tech unicorns, as well as, conservatively, some 20 million ASEAN SMEs that regularly export, over half of them in in the ASEAN market.

Figure 1- ASEAN digitally deliverables services exports and as share of global digitally deliverable services exports in 2009-23 (in millions of USD)



Source: Nextrade Group on the basis of WTO data.

The DEFA is expected to be the world’s first regional digital economy agreement once implemented. It could promote the region’s digital trade further by putting in place forward-looking and binding digital trade rules. DEFA could increase ASEAN region’s “intensive margin” of trade – expand the current goods, services and digital services trade flows among the member economies. It could also expand ASEAN region’s extensive margin of trade, such as amplify the number of MSMEs that engage in trade and diversify the goods and services traded. By locking in good trade commitments, DEFA would pre-empt future restrictive policies that would weigh on regional exporters and raise costs to importers and consumers. And, by stimulating intra-regional trade and economic growth, DEFA could promote demand and trade with extra-regional partners.

To be sure, ASEAN members have already adopted digital trade policy commitments for example in the CPTPP (which includes ASEAN members Brunei, Malaysia, Singapore, and Vietnam), RCEP (which includes all ASEAN members, albeit in nonbinding agreement), and bilateral agreements (especially Singapore in the Singapore-South Korea Digital Partnership Agreement (KSDPA) and Singapore-Australia Digital Economy Agreement).

The DEFA could compound these gains. By how much? Research on the potential impacts of digital trade agreements is still very limited. However, existing studies indicate that these agreements bring new unique value to their members, including in settings where countries may have participated in many trade agreements in the past, as is the case in the Asia-Pacific region.

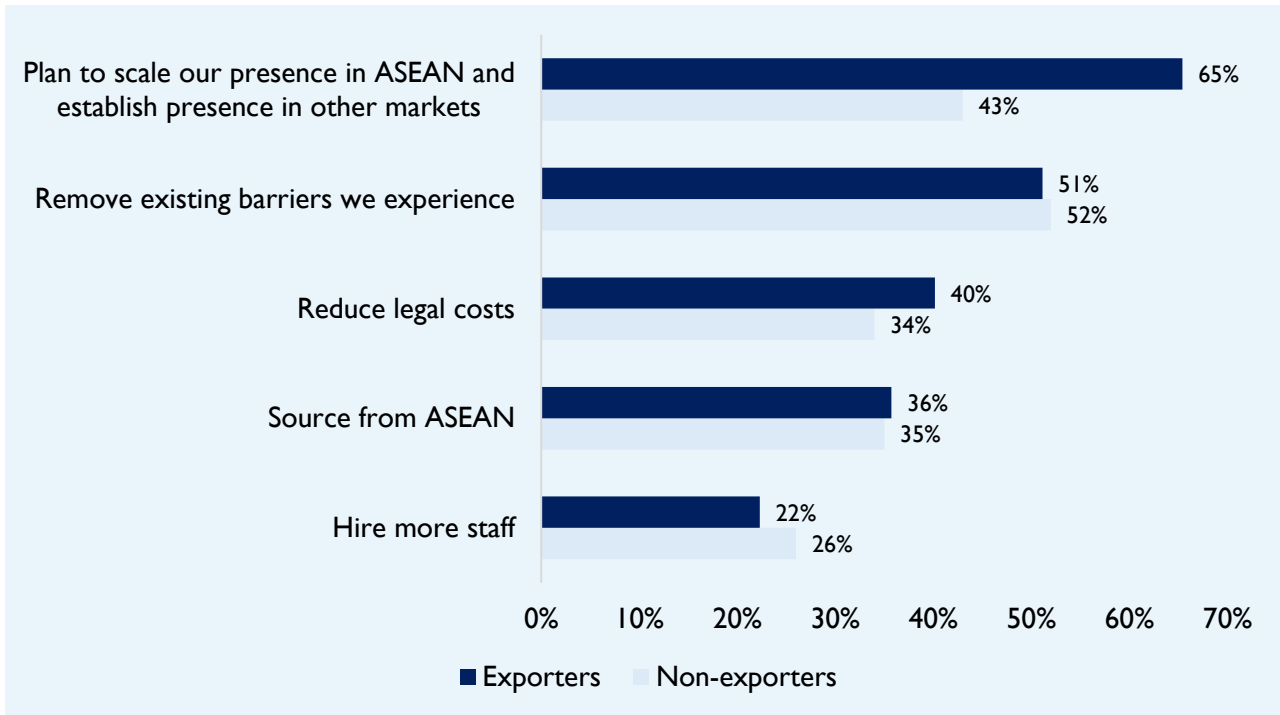
A few recent studies speak to the trade gains from digital trade agreements. For example:

- In a global study covering trade in 1970-2020, Suominen (2021) finds that the adoption of digital trade agreement and ecommerce chapters in agreements like the CPTPP that include ecommerce chapters in a broader trade agreement would increase trade in services by 42 percent and digitally deliverable services trade by 45 percent between the members, even in the presence of existing trade agreements among the parties.⁴ This would in the ASEAN context imply a gain of \$77 billion in services and digital services exports, equivalent to 2 percent of the region's GDP and 5.8 million jobs.

In addition, the analysis find that trade in goods would increase as much as 74 percent – especially in the case of comprehensive trade agreements like the CPTPP that bring together digital trade policy rules with market access for goods and services and provisions on investment, intellectual property, trade facilitation, and other provisions that are synergistic for today's globalized, technology driven companies for example in manufacturing industries. This in the ASEAN context would entail a gain of \$326 billion.

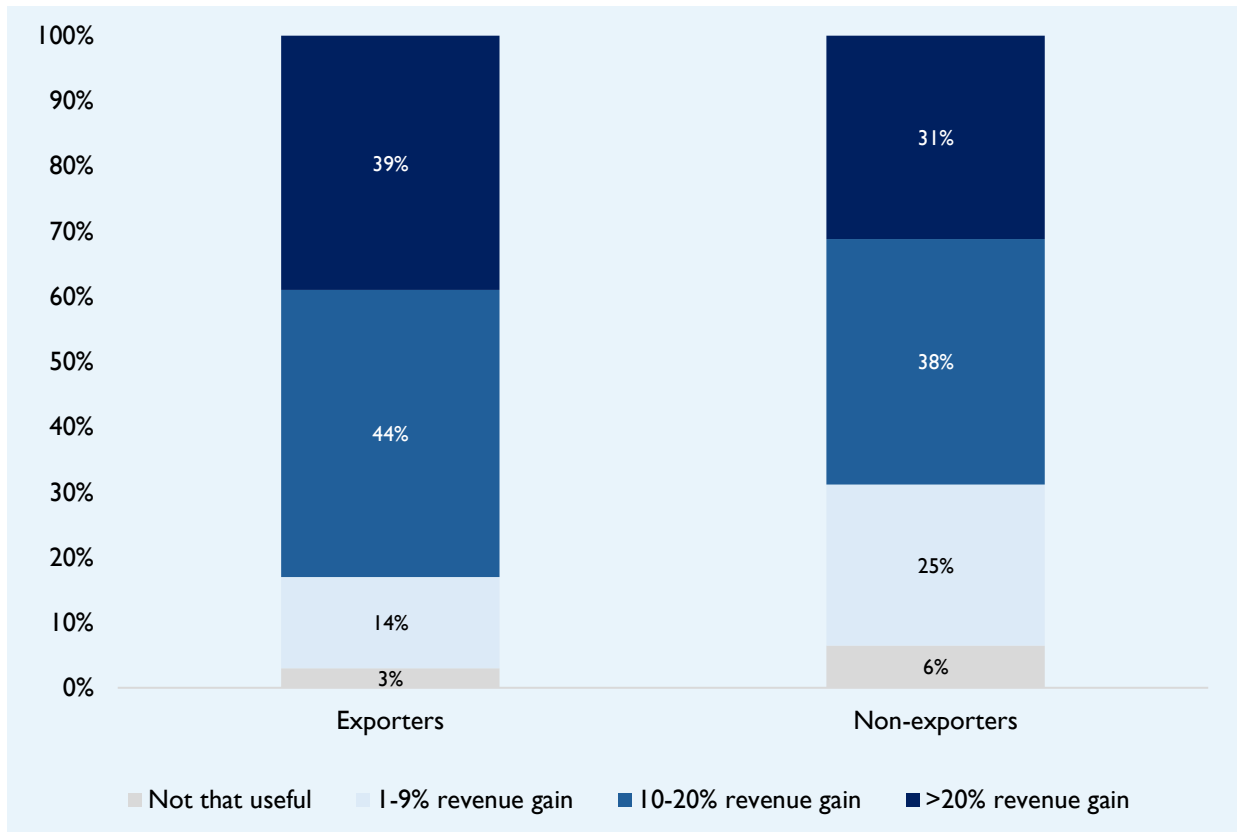
- Using a similar method but for a more limited time period (1995-2018), the OECD looks at goods trade and finds that a trade agreement with ecommerce provisions would boost emerging markets' goods trade by 17 percent. This in the ASEAN context would imply a total trade gain of \$75 billion. The OECD also finds that a trade agreement or unilateral reforms that created a significant digital policy reform and removed data transfer restrictions would promote domestic exporters' exports by as much as 145 percent.⁵
- A study by the APEC Secretariat on the impacts of specific digital trade commitments in digital trade agreement yields similar magnitudes of impact, with the various provisions increasing trade by between 11 percent and 44 percent in the three successive years after the agreement enters into effect. For example, a common e-invoicing provision would expand two economies' bilateral trade by 40 percent in the subsequent three years, and common nondiscrimination clause could boost digital deliverable trade by 29 percent.⁶ Just this one provision in the DEFA context, if understood strictly as nondiscrimination in digital products, would generate as much as \$1.5 billion in intra-regional digital product exports in the year of adoption.
- A survey with ASEAN SMEs firms run for this paper suggest that digital services and product exporters would see great value in the DEFA, especially for their trade and investment plans in the region (figure 2). Over 80 percent foresee revenue gains of at least 10 percent, a finding quite in line with the econometric findings (figure 3).

Figure 2 – ASEAN digital product and services exporter view of business gains from DEFA



Source: Nextrade Group survey with 800 ASEAN MSMEs, 5-7 August 2024.

Figure 3 – ASEAN digital product and services exporters’ views of revenue gains from the DEFA



Source: Nextrade Group survey with 800 ASEAN MSMEs, 5-7 August 2024.

3. DEFA's enabling crossborder data transfer

What is the value of data to ASEAN firms? And what would be the gain from a data transfer provision that enabled firms to access and transfer data within the ASEAN with ease? These are complex questions that remain quite unanswered in international trade literature in general. However, it is easy to imagine that exporters that daily use data to make decisions, improve their services, and deliver their services, such as firms in financial and insurance services, would be highly vulnerable to restrictions to cross-border data.

Imagine, for example, a firm in Thailand that sells insurance services to farmers in Indonesia. This insurer would absolutely require data on the Indonesian customers to underwrite insurance to them. It will likely need many types of data, such as data on the farmer, the farmers' operations and track record, potential business risks, and so on, to estimate the insurance premium. Without access to these data, the insurer would probably not be able to services the Indonesian market at all, without setting up a branch there. The farmer in turn would perhaps need to find a more expensive local provider, and undermine his profits.

There are countless similar cases. One might imagine an AI-driven company in the Philippines that performs cancer diagnostics for medical offices across the ASEAN. Without being able to access patient data, the company would not be able to do efficient diagnostics or prepare personalized treatment plans. If having to store data locally in each ASEAN market, this company would likely have to settle on servicing the Philippine market. Consumers around the region would be deprived of this valuable service.

There are various potential outcomes, all negative. Imagine, for example, a firm in economy A that sells data analysis services to as gaming startups in ASEAN economy B worth \$500,000 per year and has overall revenues of \$1 million per year and \$50,000 in profits (scenario 1). The firm in economy A would absolutely require data on the gamers, their preferred games, duration of their games, and so on to perform data analytics, for example to understand which types of individuals the company in economy B could seek to market games to.

In the event of a data localization mandate by economy B, the data analysis company would probably not be able to services market B at all. Or, it may have to hire legal services to manage the data restrictions and perhaps seek to buy data that would enable it to still service its customers in B. It may then raise its prices to cover this additional cost, in which case the gaming startups in economy B may buy fewer excellent data analysis services from A and have to turn to less qualified local services that were also more expensive than services from A pre-data restrictions (scenario 2). Thus input costs for firms in B now rise to \$550,000. They may also have to invest in local data storage solutions due to B's new mandate; these costs may add another \$50,000 in the firms' total costs. As a result, the new costs wipe out the profits of the gaming startups in B. Firms in B need to cease hiring and investing and may need to raise their prices, making them less competitive in C.

Scenario 1 – No data restrictions



Economy A Business

Digital service provider that uses data to improve services to buyers in economy B, find ways to upsell and cross-sell, and target right segments.

Business in numbers:

- Total sales: \$1m
- Of which sales from Economy B: \$500,000
- Labor and other costs: \$950,000
- **5% profit margin or \$50,000**



Sells 10 units of digital service at \$50,000



Economy B Business

Buyer of digital services that uses the services for its own products and services.

Business in numbers:

- Total sales: \$1m
- Total costs: \$500,000 in input costs + \$400,000 in labor and other costs = \$900,000
- **10% profit margin or \$100,000**
- Re-invests profits into R&D and new hires



\$500,00 and data on economy B buyers, segments, purchases, preferences

Scenario 2 – Data restrictions with A passing on the costs of data restrictions



Economy A Business

- No longer able to use data to improve digital services sold to B: sells more generic and less innovative services
- Invests \$25,000 in legal and compliance fees to navigate B's data restrictions
- Spends \$25,000 to access useful data on B in other ways
- Raises prices by 10% to cover costs, sells fewer units
- Total sales: \$995,000
- Total costs: \$1m
- **Company profits: \$5,000**



Sells 9 units of digital service at \$55,000 each to make up for the cost of data restrictions



Economy B Business

- Gets from A services of poorer quality and higher prices, buying less from A
- Invests \$50,000 in local data storage solutions and infrastructure in response to Economy B's data mandates.
- Buys 1 further input unit at \$55,000 from more expensive sources
- Total sales: \$1m
- Total costs: \$550,000 in input costs + \$50,000 in data storage costs + \$400,000 in labor and other costs = 1m
- **Company profits: \$0**



\$495,000
No data

OPTIONS:

- Reduce employment and investment
- Raise prices to own customers, becoming less competitive, including in exports

Data restrictions of course could also affect sellers of goods. A small business in Vietnam that sells online via its new ecommerce platform and secures customers from Singapore and Malaysia would not, in the presence of data barriers, be able to transfer data on these new customers to Vietnam to analyze the data and understand the characteristics of these customers and their preferences and needs, or predict their next purchases. This undermines the Vietnamese seller's customer service and revenue potential.

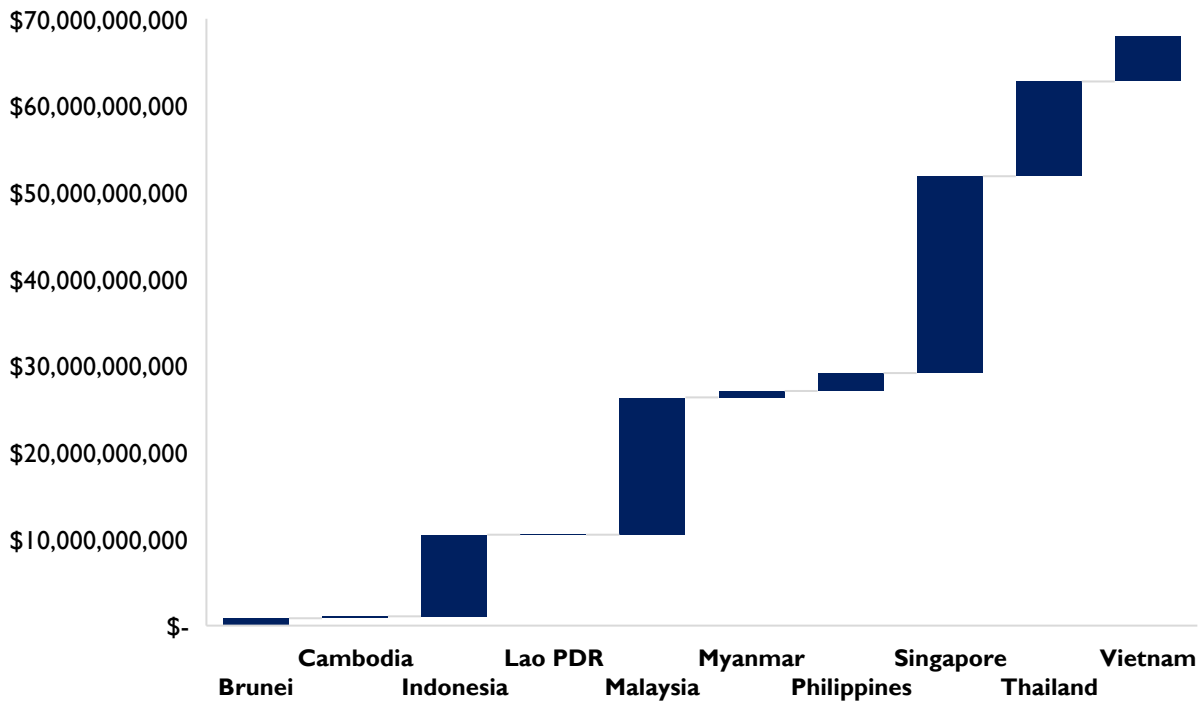
By limiting existing and new barriers to the crossborder transfer of data, the DEFA could eliminate these problems and enable service providers and online sellers to grow and scale their sales. In particular, the DEFA's data transfer provisions could deliver new value in three ways:

First, several studies have highlighted that restrictive data policies are much like duty on imports, reducing trade. For example, Ferracana and van der Marel (2018) find that if countries lifted their restrictions on the cross-border flow of data, the imports of services would rise on average by five percent across all countries. A recent APEC report analyzing bilateral data transfer commitments in trade agreements in the APEC region found impacts of similar magnitude for digital trade.⁷ World Bank (2020) argues that removing data restrictions would result in a 4.5 percent productivity gain.⁸ Using these magnitudes, a data transfer provision in the DEFA, if affecting all bilateral relationships, would be equal to \$9.2 billion in services exports.

Second, DEFA could also promote the competitiveness and exports of ASEAN exporters that use data and imported data-intensive services and products in their production processes and operations. Millions of ASEAN businesses are highly integrated into regional and global value chains and habitually use services and goods from other ASEAN nations in producing goods and services exports. New data restrictions imposed by these exporters' own governments would be tantamount to new trade costs and undermine their export competitiveness.

Econometric evidence by the OECD suggests that further data limitations equivalent to a significant domestic data reform would lead to a 15.4 percent increase in international trade costs for imposing economy exporters. In the ASEAN context, by pre-empting the imposition of such new data barriers that raise exporters' costs, a DEFA data transfer rule could pre-empt as much as \$68 billion in trade costs for ASEAN exporters in their intra-regional trade, and also promote ASEAN exporters' competitiveness in extra-regional markets (figure 4). For example, DEFA's pre-empting new data barriers would save exporters \$9.4 billion in Indonesia and \$15.8 billion in Malaysia.

Figure 4 – DEFA’s safeguarding trade costs implied by domestic data restrictions in the ASEAN in intra-ASEAN exports, by economy

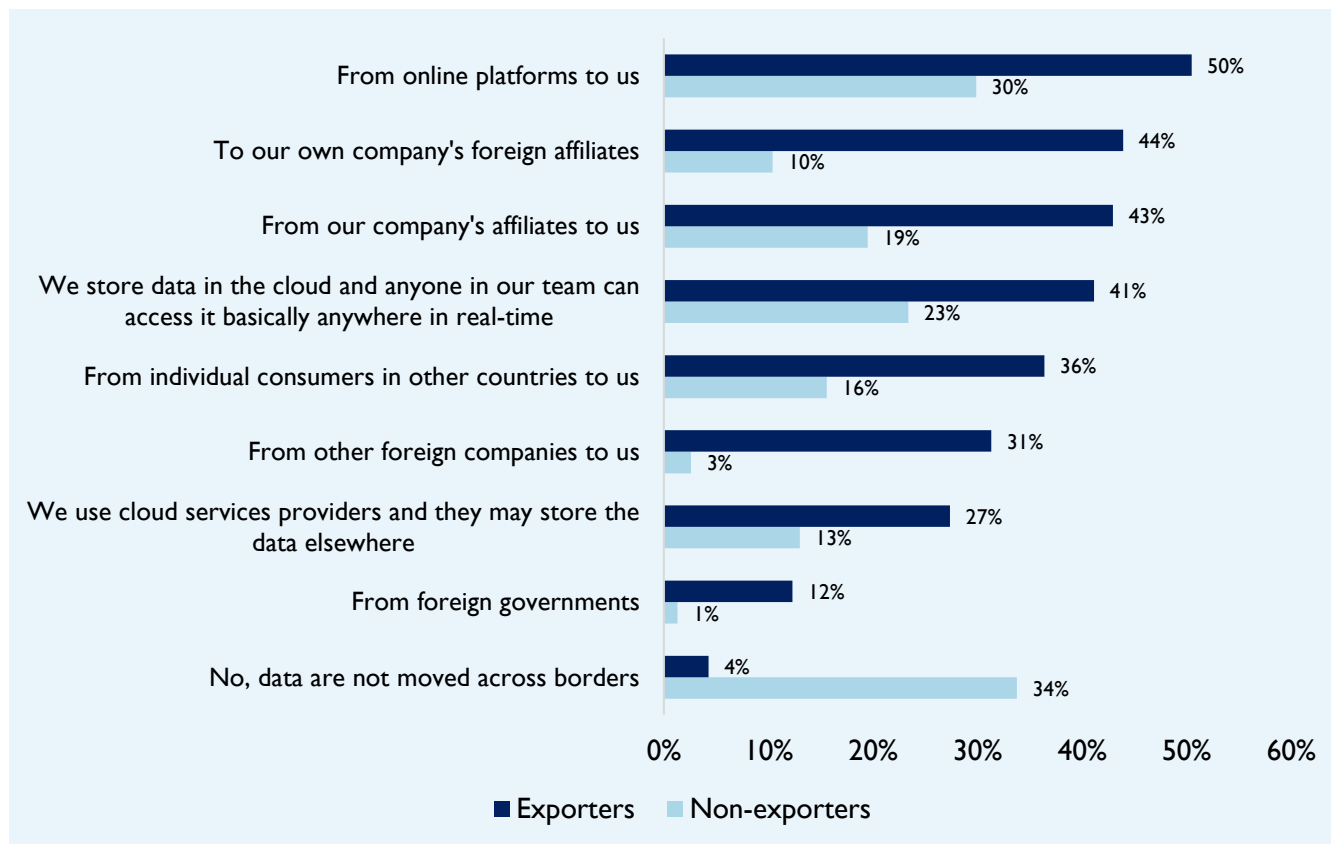


Source: Nexttrade Group estimate.

Third, if pre-empting new data transfer barriers in ASEAN exporters’ regional export markets, the DEFA would also help especially the region’s data-intensive exporters to use data from their foreign customers, markets, and operations for new insights and revenue generation. How much revenue? The answer depends on the value of data for these different industries, and value from data form export markets. There are no clear answers in the literature about the value of data to firms: while some industries are more data-intensive than others, the economic value of data for any industry is not well-known. Some analyses provide a sense of the value of data. For example, Center for Business and Economics (CEBR) and KX, assessing data on six economies, find that manufacturing industry would increase its revenue by 27 percent if implementing real-time data capture, automotive industry 40 percent, finance and insurance 22 percent and telecommunications on average 37 percent.⁹

According to our survey with 800 ASEAN firms, ASEAN exporters and especially online sellers that use ecommerce or sell digital services across borders habitually also export and import data on their foreign customers, markets, performance, and operations. Some 46 percent of all firms and 63 percent of high-growth firms import data from foreign affiliates, online platforms, and foreign customers (figure 5).

Figure 5 – How ASEAN firms access and move data across borders



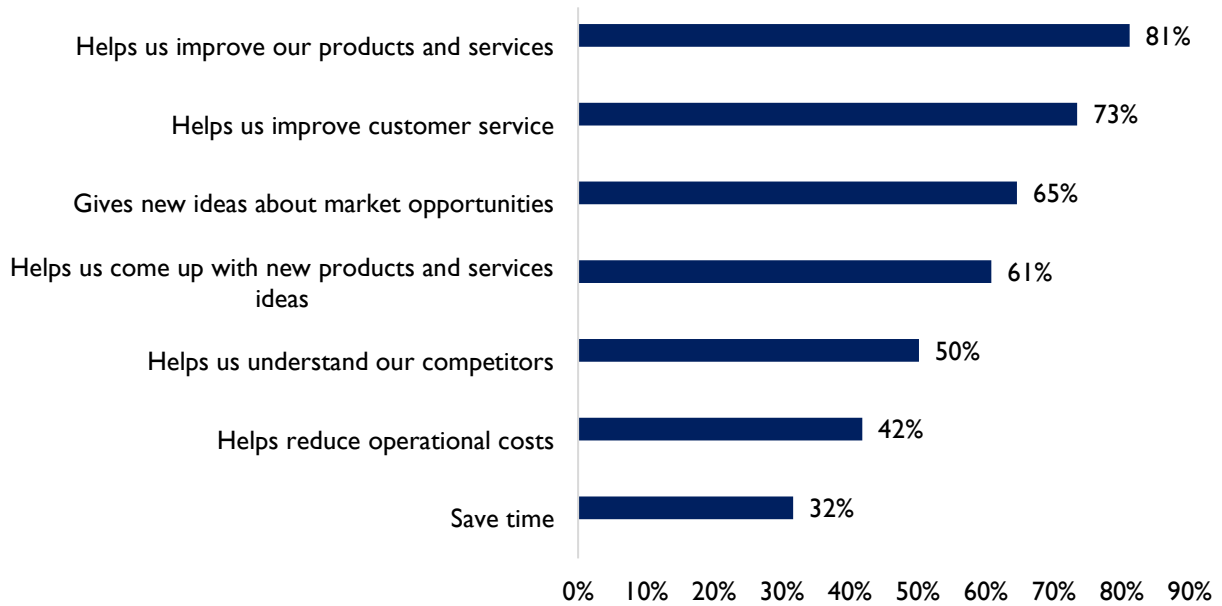
Source: Nextrade Group survey with 800 ASEAN MSMEs, 5-7 August 2024.

Data has various value propositions for firms, such as helping them improve customer service and improve products and services and get new ideas (figure 6). As many as 77 percent of digital product and services exporters state that data from domestic and foreign markets is worth at least 20 percent of their revenues annually. The value of data grows with firm growth and export intensity, indicating that the most competitive and productive firms derive particularly notable share of their revenue from data.

The DEFA would protect these gains from data. Assuming that DEFA ensured this value creation from data for current exporters and that the data was worth conservatively 15-20 percent of their annual revenues, DEFA would safeguard \$66-\$87 billion in SMEs' value creation per year, with Indonesia and Thailand scoring the largest gains (figure 7). This is equivalent to 1.7 to 2.3 percent of the region's GDP. In turn, in the event of data restrictions, especially firms that derive a strong share of their revenue from exports would suffer, reducing their revenues, profitability, and export competitiveness (figure 8-9).

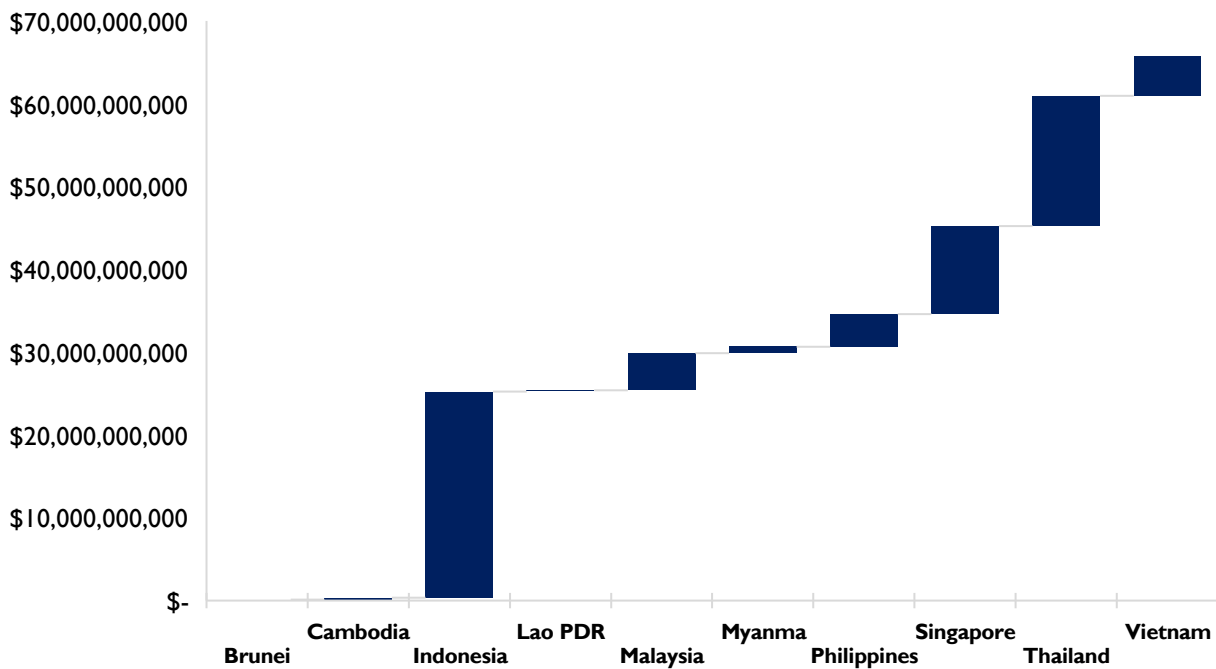
Going forward, the value of data and thus data transfer provisions will likely only grow for ASEAN firms with intensifying AI use that enables firms to amplify the value from the data they have. This is especially critical for the Philippines, Thailand, and Singapore, whose export baskets are especially data-intensive, consisting heavily of services whose production and delivery require data.

Figure 6 – Value propositions of data to ASEAN firms



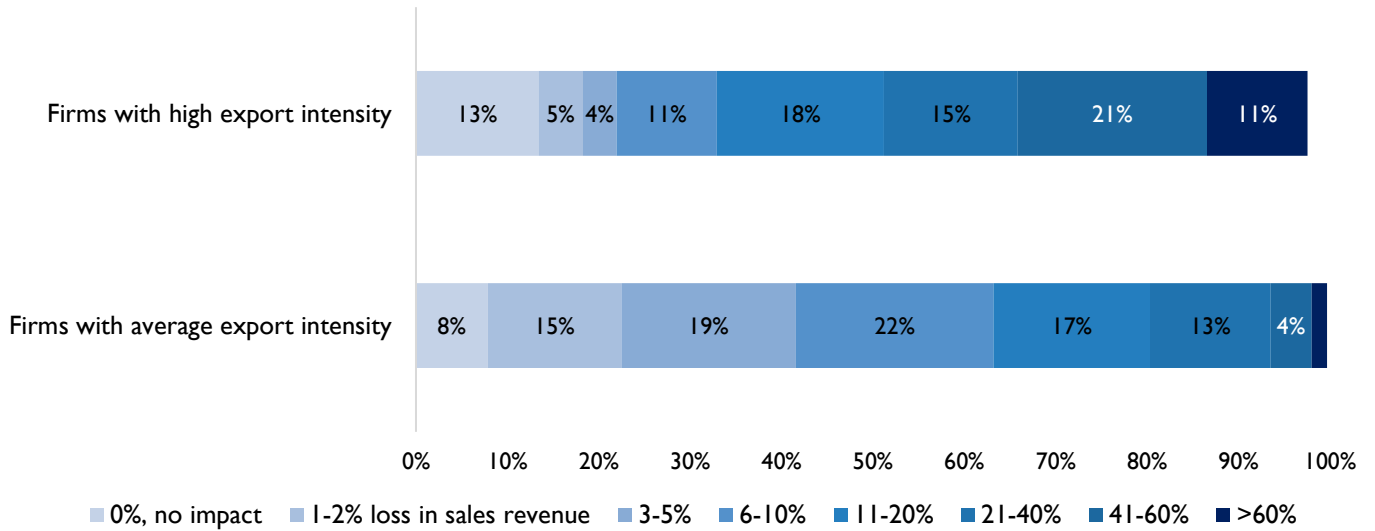
Source: Nextrade Group survey with 800 ASEAN MSMEs, 5-7 August 2024.

Figure 7 – Annual gains for ASEAN MSME exporters from access to data from foreign markets, by economy



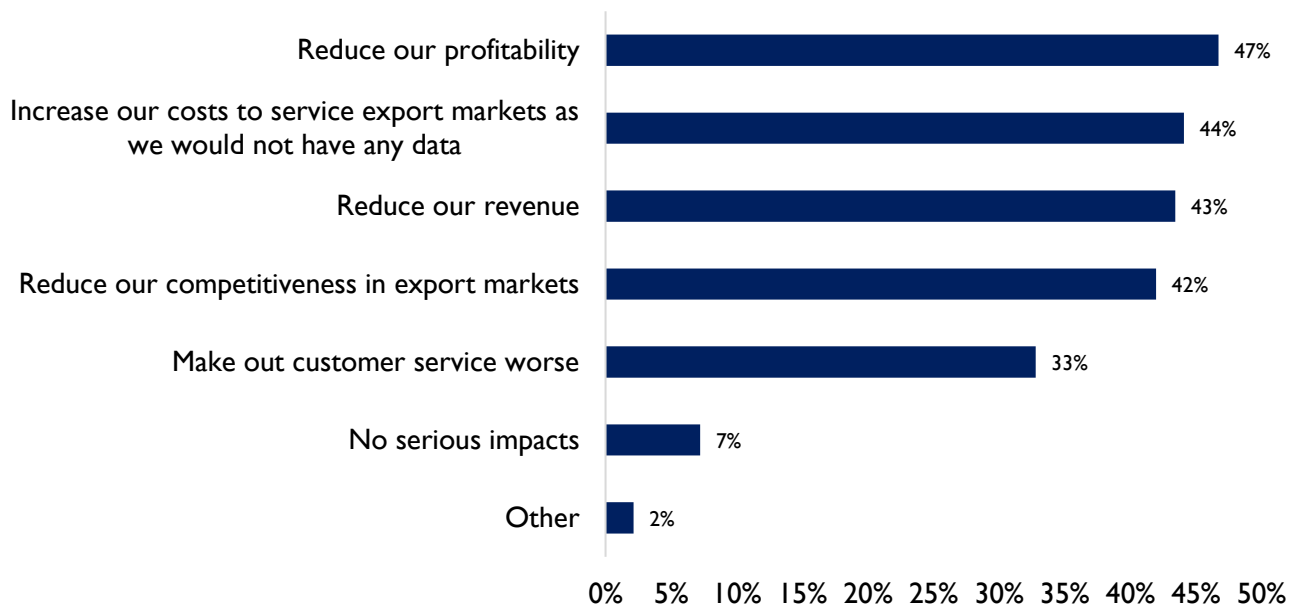
Source: Nextrade Group estimate.

Figure 8 – ASEAN digital product and services exporters’ estimate of revenue losses if could no longer access data from foreign markets in 2025, by exporters’ export intensity



Source: Nextrade Group survey with 1,000 ASEAN SMEs, 5-7 August 2024.

Figure 9 – % of ASEAN digital product and services exporters seeing impacts from the loss of access to data



Source: Nextrade Group survey with 1,000 ASEAN SMEs, 5-7 August 2024.

In sum, by ensuring free data transfer, DEFA could deliver a \$9.2 billion boost to ASEAN intra-regional services exports. By pre-empting increased costs associated with difficulties accessing data and improve customer service, the DEFA could also pre-empt \$68 billion in new trade costs. In addition, in light of ASEAN firms' intensive use of data to create new value, for example to create entirely new goods and services, DEFA could safeguard \$78 billion in ASEAN exporters' revenue each year, equivalent to some 2.1 percent of the region's GDP.



4. Moratorium on duties on electronic transmissions

The World Trade Organization (WTO) members have agreed to a multilateral moratorium on the imposition of customs duties on electronic transactions, at least until the end of March 2026. Also practically all digital trade and economy agreements and ecommerce chapters in free trade agreements commit the parties to a moratorium on duties on electronic transmissions. ASEAN members Brunei, Malaysia, Singapore, and Vietnam are supposed to adhere to the moratorium in the CPTPP, and Singapore in its various bilateral digital trade agreement. However, this does not mean the moratorium is guaranteed. At the multilateral level, its extension was achieved in the face of strong opposition from some developing countries. And while RCEP has a moratorium and many DEFA members are RCEP members, RCEP's ecommerce chapter is non-binding. In the ASEAN, Indonesia has already moved to indicate dutiable tariff lines were the moratorium lifted.¹⁰

Given the moratorium at the WTO and in the CPTPP, the baseline in the ASEAN for now is zero tariff on electronic transmissions. The DEFA could usefully lock the moratorium in and pre-empt new duties on intra-ASEAN trade.

There is no one view as to what the moratorium exactly does and should cover. One consensus view is it would pre-empt duties on digital products, commonly taken to mean computer software, other computer services (cloud computing and data storage services and other computer services other than cloud computing), and other information services.¹¹ In 2023, ASEAN total exports of digital products were about \$32.6 billion. Based on 2021 data on bilateral flows, intra-regional exports of computer software and other computer services were 16% of total, which in 2023 would have been \$5.4 billion.

There is also data on the many *digitizable* products that could become digital products; in the ASEAN these make up some \$14.5 billion of ASEAN exports and \$1.71 billion of intra-regional exports. There are of course reasonable fears that governments would not stop at taxing digital products if the moratorium ended, but also impose duties on various imported digital services. For example, if the moratorium ended, some governments might decide to apply the region's current applied tariffs on digitizable products, which averages 5.3 percent, on digital services.

What would be the impact of this tariff? That depends on the magnitude of the tariff and who would ultimately pay for it. In our survey, 42 percent of ASEAN digital services exporter SMEs and 48 percent of firms that derive at least a quarter of their revenue from exports believe that a 5-10 percent tariff on their services or products in the ASEAN market would entail at least a 6 percent revenue loss, and for 27 percent of these intensive exporters, the loss would be 3-5 percent (figure 10). Based on data on ASEAN digital product and service exporters, this means the lost revenue would be about \$950 million.

The ultimate impact on trade flows would depend on the sensitivity of trade to the tariffs. For example, the OECD (2023) finds that transposing tariffs currently applied on digitizable goods to digital services would reduce low-income country exports of digital services by 2.5 percent, exports of middle-income countries by 0.4 percent and exports of high-income countries by 0.5 percent. Using these magnitudes as rules of thumb in the ASEAN, a tariff of 5.3 percent on intra-regional trade in digitizable

products, if digitized, and on digital products and services would reduce ASEAN digital services trade by \$137.5 million (figure 11). In addition, a duty on electronic transmissions would impose a net welfare loss to consumers – in 2018 in six ASEAN economies, the moratorium’s net welfare effect was estimated at \$3.4 million.¹²

Figure 10 – Potential impacts on ASEAN digital product and services exporters firms if they faced a 5-10% tariff in ASEAN export markets

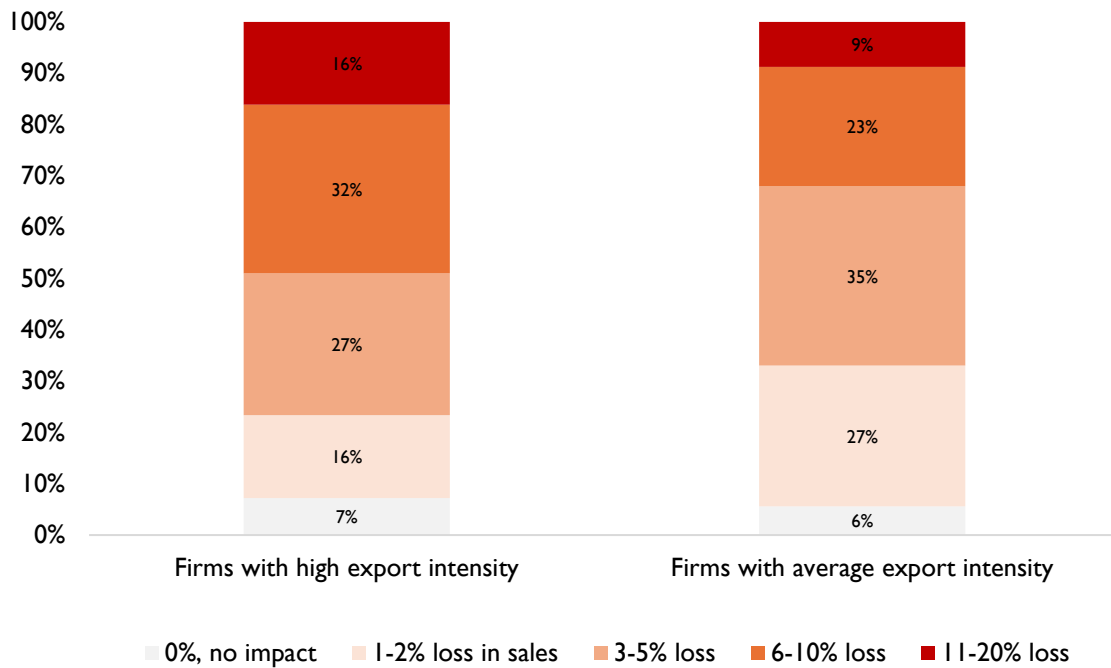
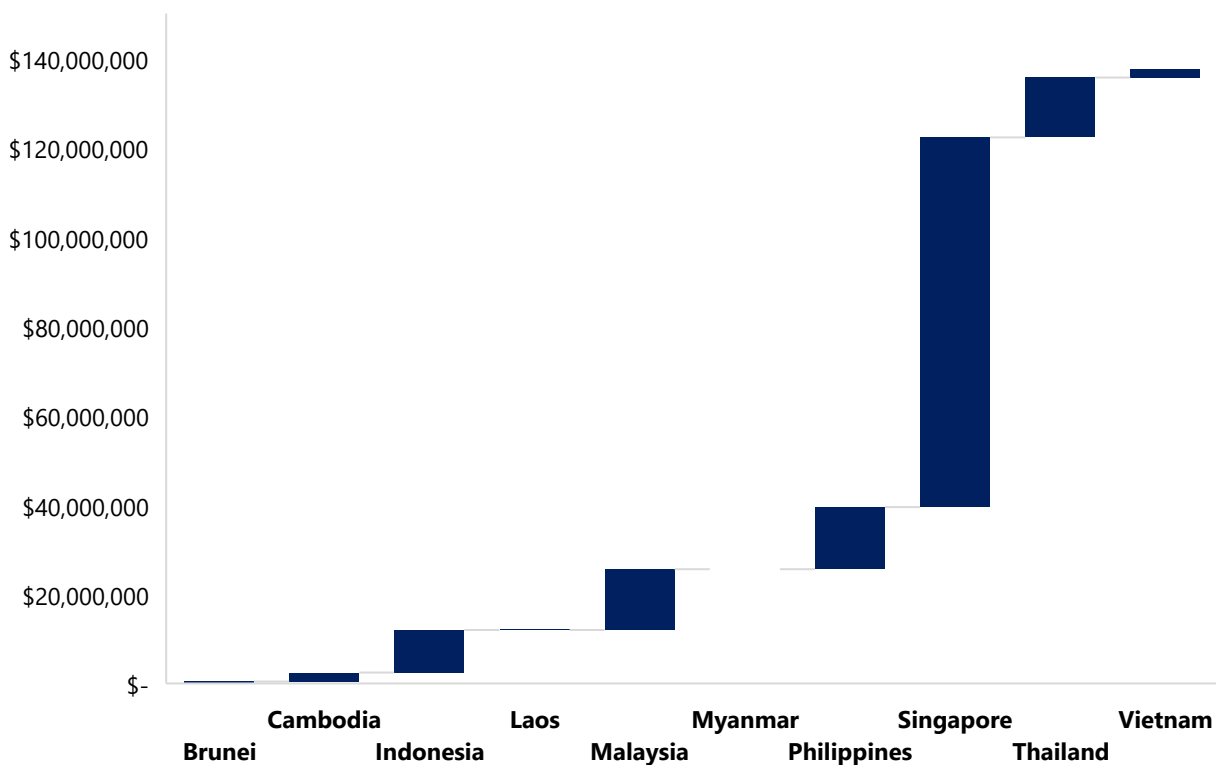


Figure 11 – Potential reduction of trade if intra-ASEAN digital goods and services trade were levied current applied duty on digitizable goods

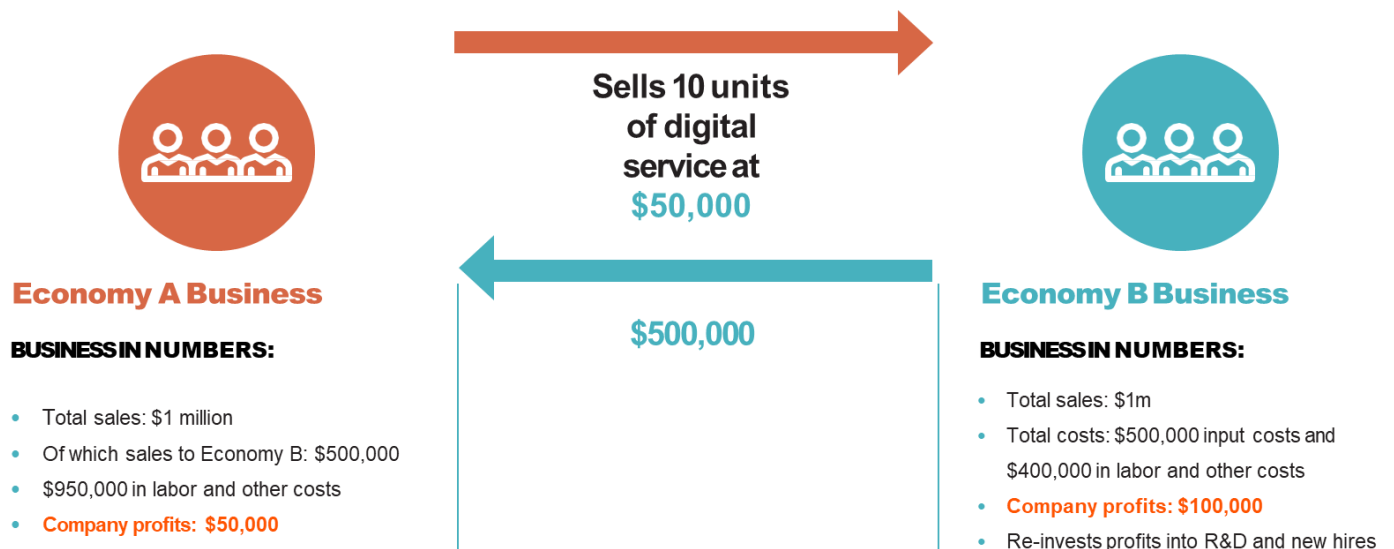


To be sure, since imported digital goods and services are typically used as inputs by importing firms for the production and exports, a tariff on the imports of digital products and services would also increase the import costs for firms and exporters in the economies that impose the tariff, and reduce their productivity and export competitiveness. By how much, depends on the cost increase, the importance of imported products and services for the exporter, and the importing firms' ability to easily shift to similarly priced domestic alternatives.

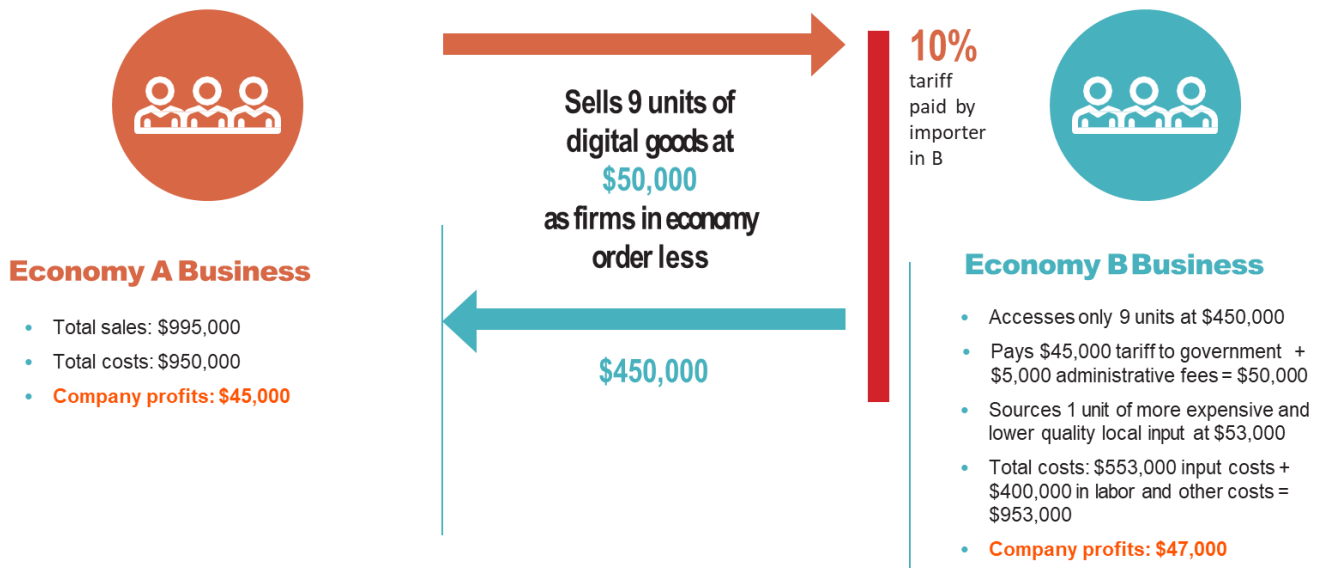
Let's imagine a small digital product exporter in economy A with a revenue of \$1 million, 50 percent of sales from the domestic market and 50 percent from other ASEAN economies, and a five percent profit margin (scenario 1). A sudden 10 percent tariff imposed by economy B on digital products would increase the cost of the product in economy B as importers would need to pay a tariff to the government. The importers might thus buy only 9 units at a total of \$450,000, while paying a tariff of \$45,000 and an administrative fee of \$5,000 (scenario 2). This means that revenue for the firm in A goes down to \$950,000 and company profits are wiped out. But the effects are negative also in B: due to the tariff, importers essentially pay \$55,555 for each imported unit. They may thus turn to domestic sources (that were more expensive prior to the tariff) for the additional one unit, at a total cost of \$55,000. Thus the input costs for firms in economy B now rise to \$555,555 and profits, previously at \$100,000, drop by more than 50%. As a result, importers of digital products in B hire and invest less (scenario 2).

Alternatively, firms in B may keep importing 10 units from A as before, plus pay a \$50,000 tariff and \$5,000 administrative cost of \$55,000, again undermining their profits (scenario 3). They may in turn opt to raise their prices in their own export markets, and become less competitive. The government secures some additional tariff revenue, but at a high cost and only in the short-term – in the long-term, the tariff dampens economic growth and thus tax revenue.

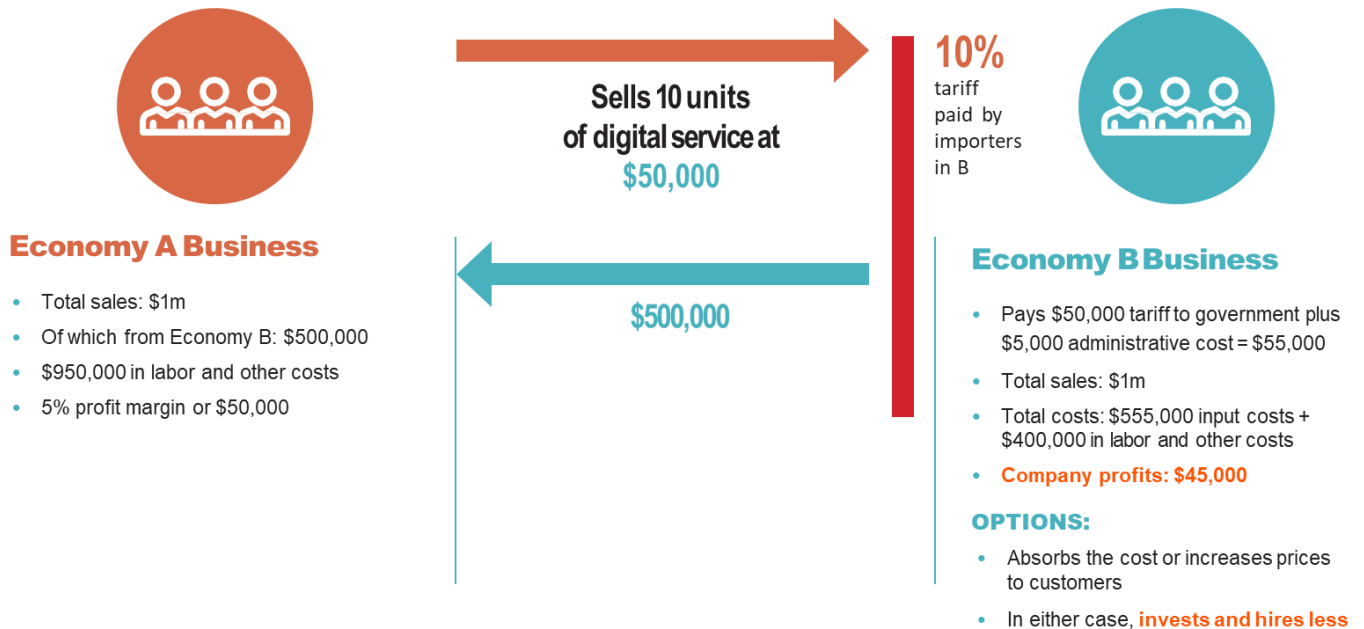
Scenario 1 – Moratorium in place



Scenario 2 – No moratorium and tariff of 10 percent of digital goods by B on digital goods sold by A: both A and B are worse off



Scenario 3 – No moratorium and tariff of 10 percent by B on digital goods sold by A: company in B absorbs the cost



By adopting a moratorium on electronic transmissions, ASEAN could pre-empt duties that would under a very conservative estimate safeguard \$138 million in annual intra-ASEAN digital services trade. It would also help moderate input costs for ASEAN firms that use imported digital goods and services and use them in their production then sold domestically or to export.

5. Nondiscriminatory treatment of digital products

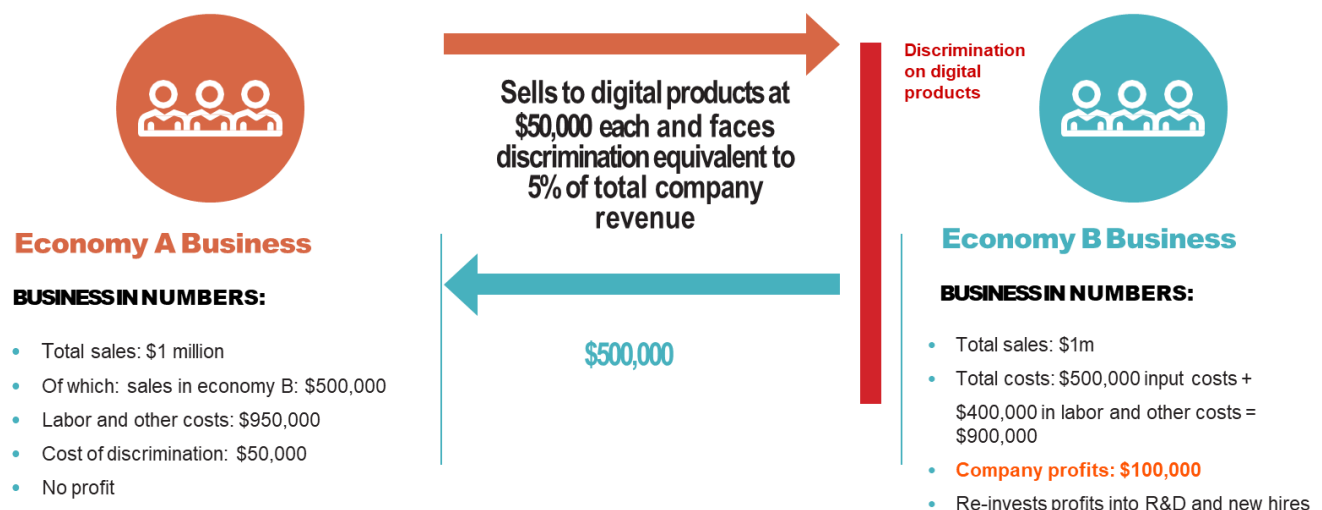
Digital trade and economy agreements typically prevent discriminatory treatment of foreign digital products, which per the CPTPP are products that are “digitally encoded, produced for commercial sale or distribution, and that can be transmitted electronically.”¹³

Digital products are commonly taken to mean computer software, other computer services (cloud computing and data storage services and other computer services other than cloud computing), and other information services.¹⁴ In 2021, ASEAN total exports of digital products were about \$31 billion, of which \$5.2 billion were destined to the intra-regional market.

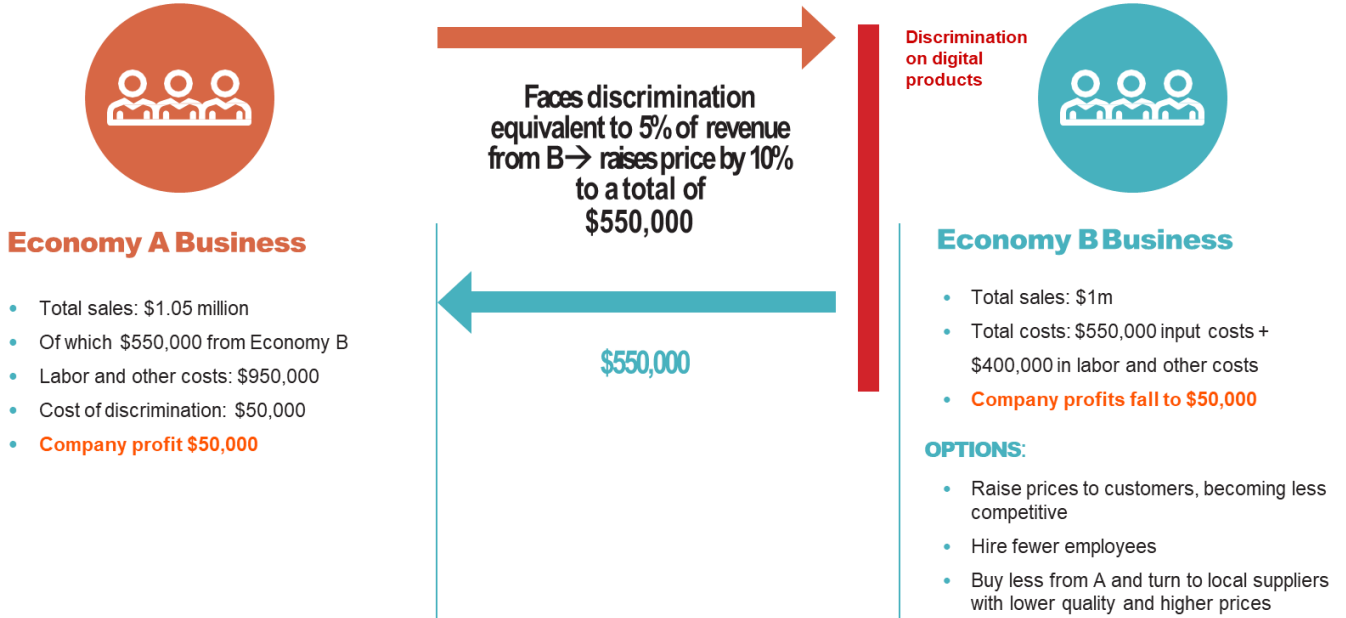
What would discriminatory treatment in the trade of digital products mean? Discrimination is here taken to mean activities that make the foreign digital products less attractive, first and foremost in terms of costs.¹⁵ It could also mean discrimination of digital products vis-à-vis equivalent physical products. Imagine for example exporting \$1 million in digital products from Indonesia. Discrimination against this seller in its export markets could mean a variety of things, such as a registration requirements applicable only to foreign companies, local content or local presence requirements, or a new tax requirement, for example. It may also entail strict local regulations or standards, such as data localization requirements or specific technical standards.

Discrimination would have similar impacts as a tariff and increase the costs for the Indonesian seller. The seller might have to hire legal services to navigate complicated registration rules in the target market, or set up a local representative office, both new costs that might wipe out her profits (scenario 1). She may choose to raise prices when exporting to make up for the cost of the discrimination, which would make her less appealing to importers in the target market as the higher cost would bite into their profit margins and ultimately reduce hiring, investment and/or competitiveness of firms in B (scenario 2). She may also just give up if the discriminatory treatment details excessive costs, cease exporting, and turn to court local customers. Or, she may give up and not seek to export at all.

Scenario 1 – Discriminatory treatment by B on digital products from A – firm in A experiences cost increases

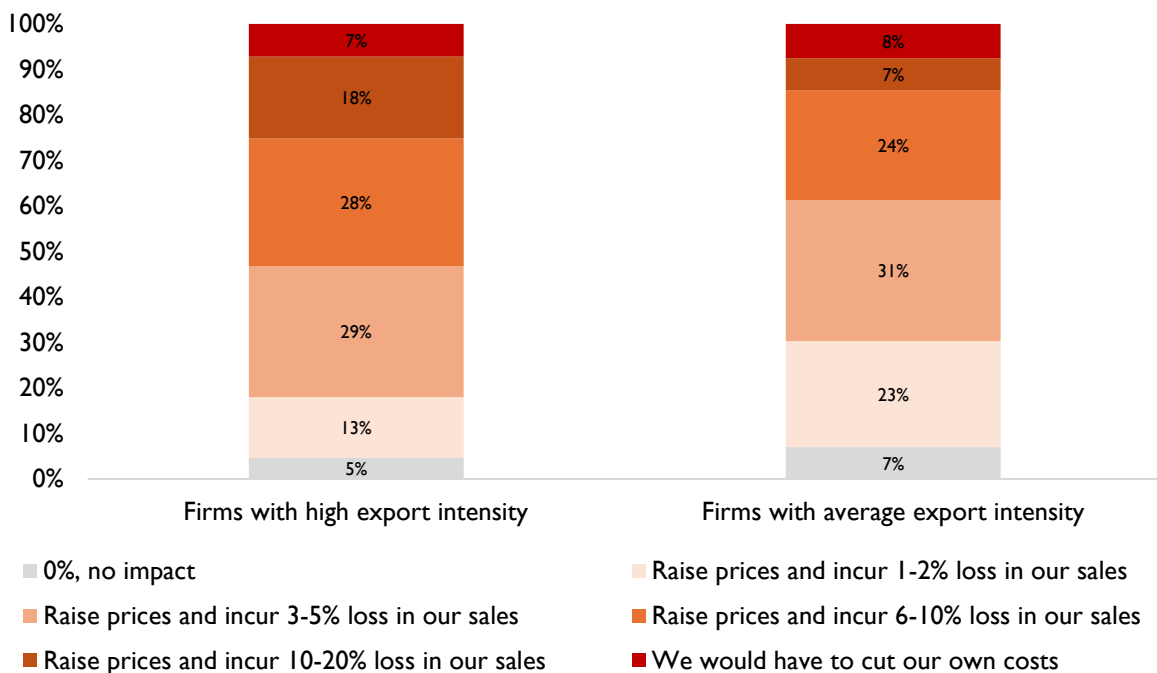


Scenario 2 – Discriminatory treatment by B on digital products from A – firm in A passes costs on firms in B are worse off



Such cost increases by suppliers as incurred by economy B’s businesses in scenario 2 would have detrimental impacts to ASEAN firms . Of firms with high export intensity, 88 percent would raise their own prices as a result, and become less competitive; 46 percent believe the losses in sales would be over 6 percent (figure 12). Only 7 percent would be in a position to cut costs.

Figure 12 – Potential impacts on firms if suppliers raised their prices in reacting to discrimination

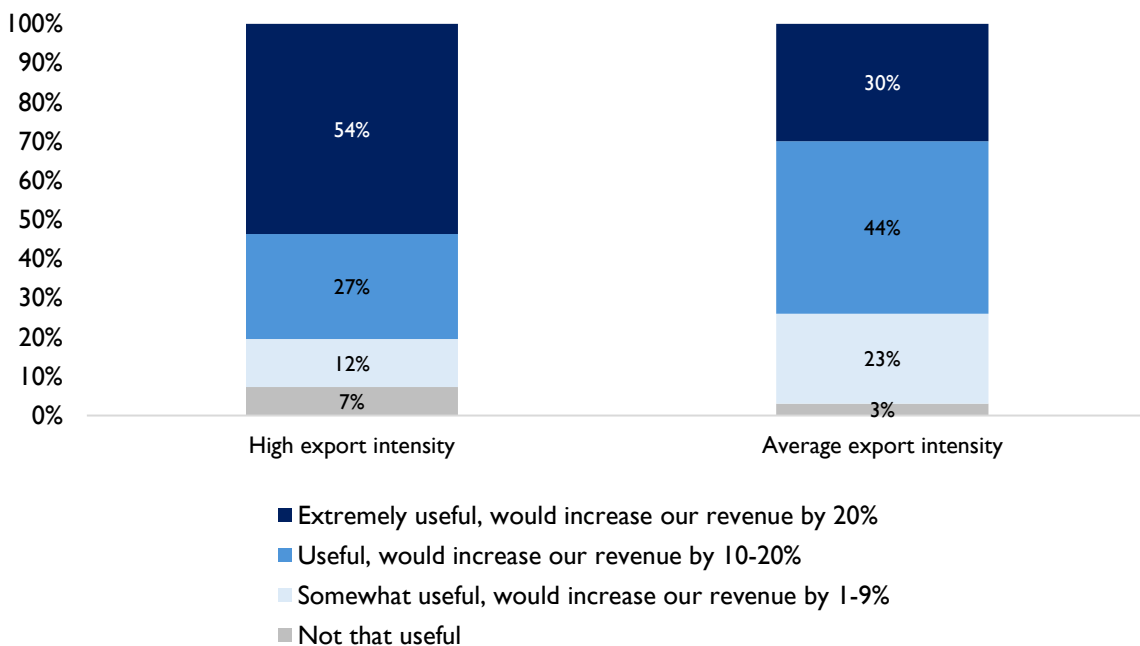


Industry reports and business surveys suggest there exists discriminatory treatment of digital products in the Asia-Pacific region. The 2023 National Trade Estimate by the U.S. Trade Representative suggests that all ASEAN CPTPP members and Indonesia engage in some form of discrimination against foreign digital products imports.¹⁶ In a report on the CPTPP’s implementations, firm-level surveys revealed that only 44 percent of SMEs in the CPTPP region believe that ASEAN members that belong to the CPTPP have implemented the nondiscrimination provision well.

However, a digital trade agreement could lock in good policies and pre-empt discrimination. A recent APEC report calculates that ensuring market access and banning discriminatory treatment via a digital trade agreement has implied a 29 percent gain on digitally deliverable trade in the APEC region. If applied via the DEFA to digital products and all bilateral relationships in the ASEAN, the gain would be up to \$1.5 billion in intra-regional trade in the year of adoption.

The magnitudes are similar based on our SME survey in the ASEAN, which indicates that firms that export digital products have experienced discriminatory treatment of some degree in their export markets; for 40 percent, discrimination has reduced export revenues by 1-5 percent; for 27 percent, export revenues have declined by 6-10 percent; and for 6 percent, by 11-20 percent. For 54 percent of firms that derive at least a quarter of their revenues from exports, ASEAN’s pre-empting discrimination on digital products would boost their revenues by at least 20 percent (figure 13). Even if these hypothetical gains were only on export revenues and assuming DEFA’s pre-empting discrimination on digital goods would give exporters just a 10-15 percent export boost, the revenue gains could be at the order of \$520 million to \$780 million.

Figure 13 – Benefit for ASEAN digital product exporters from the DEFA’s limiting discriminatory treatment in ASEAN export markets



Source: Nextrade Group survey with 800 ASEAN MSMEs, 5-7 August 2024.

In sum, DEFA can limit discrimination in digital products and provide greater certainty to ASEAN digital products exporters and importers. The value of this confidence could, depending on the methodology, up to \$1.5 billion of digital trade in the year of adoption.

6. DEFA as a means to attract foreign direct investment

There is a long line of literature on the interplay of trade and foreign direct investment (FDI). FDI has been found to enhance export capabilities by providing access to advanced technologies, managerial expertise, and international markets.¹⁷ Blonigen (2001) found that a 10 percent increase in FDI inflows led to a 7 percent increase in exports in developing countries.¹⁸ Southeast Asian countries such as Vietnam and Malaysia have leveraged FDI to boost their manufacturing sectors, resulting in a significant rise in exports.

FDI in technology sectors has had a remarkable impact on the digital services exports of such global services hubs and Philippines, Costa Rica, and India. For example, FDI in India's IT and digital sectors has been found to lead to an 18 percent increase in digital trade. The relationship between FDI and trade can also work in the reverse: for example, a company that currently sells for example from Singapore to Malaysia remotely may one day, as it grows its sales, decide to establish an office in Malaysia to be closer to the customers.

Regional trade agreements have long been found to boost FDI by reducing uncertainty and transaction costs – for example, a 2007 study found that RTAs boosted FDI by 28 percent compared to non-member countries. There does not exist a similar body of work on regional digital trade agreements. However, a digital trade agreement like the DEFA, by putting in place rules conducive to regional digital trade, can stimulate investment and attract extra-regional foreign companies that, by virtue of the agreement, see the region as one single market and easy to operate in and scale in. Bauer et al. (2014) find that a 10 percent increase in a country's digital trade openness could lead to 2-4 percent impact on FDI inflows.¹⁹

In the ASEAN, all FDI inflows amounted to \$224 billion in 2022, with \$28 billion coming from within the region. In a rough estimate, if DEFA's cementing good digital policies promoted ASEAN FDI just by 2-4 percent, the FDI gain would be \$448 to \$896 million, or 0.5 percent of regional GDP.

7. Conclusion

This paper has examined the potential impact of such potential ASEAN DEFA commitments as free data transfer, moratorium on duties on electronic transmissions, and nondiscrimination on digital goods.

Growth of digital trade is high, if continuing at current growth rates it would be at \$470 billion in 2030. However, gains are at risk, in light of digital and data protectionism and potential end to the WTO moratorium on duties on electronic transmissions. New tariffs and data restrictions, and creeping discrimination on foreign imports of digital goods and services would undermine the region's digital trade prospects, by raising costs to exporters and importers and dampening consumption.

The DEFA is a critical instrument to safeguard future digital trade gains. Its mutually reinforcing provisions, such as open data flows, moratorium on duties on electronic transmission, and ban on discrimination against foreign digital products would have synergies and compound each other. In addition, good, pro-trade policies would create a sense of certainty among firms, which, per surveys and econometric evidence, would help ASEAN businesses to invest in new exports and investments into the ASEAN region. The total gains could be at least \$77 billion in services and digital services trade, and \$75 to \$326 billion on trade in goods, depending on the methodology.



References

- ¹ <https://asean.org/asean-defa-study-projects-digital-economy-leap-to-us2tn-by-2030/>
- ² <https://asean.org/10th-asean-economic-community-dialogue-unpacks-worlds-first-regionwide-framework-agreement-on-digital-economy/>
- ³ Bauer, M., Lee-Makiyama, H., van der Marel, E., & Verschelde, B. (2014). *The Economic Importance of Getting Data Protection Right: Protecting Privacy, Transmitting Data, Moving Commerce*. ECIPE Occasional Paper, No. 3/2014.
- ⁴ https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/211027_Suominen_CPTPP_FullReport.pdf?VersionId=6TBKVom7OoctkpyAbINDJmR0m0wwWplyx
- ⁵ <https://www.oecd-ilibrary.org/deliver/11889f2a-en.pdf?itemId=percent2Fcontentpercent2Fpaperpercent2F11889f2a-en&mimeType=pdf>
- ⁶ https://www.apec.org/docs/default-source/publications/2023/3/economic-impact-of-adopting-digital-trade-rules-evidence-from-apec-member-economies/223_cti_economic-impact-of-adopting-digital-trade-rules.pdf?svrsn=e1021415_2
- ⁷
- ⁸ World Bank, World Development Report (2020), <https://www.worldbank.org/en/publication/wdr2020>.
- ⁹ <https://kx.com/wp-content/uploads/2022/05/Speed-to-Business-Value-Research-Report.pdf> The are many ways to understand the value of data: one is the income approach where data is converted into value (like an ecommerce platform buying a report on a new market and using it to grow sales by 10 percent). The market approach would define the value of data in an open market – for example, if firms were to buy consumer data on a data marketplace. A third method is the cost approach that captures investment in data <https://www.pwc.co.uk/data-analytics/documents/putting-value-on-data.pdf> See also <https://www.bea.gov/system/files/papers/20190220ValueofDataLiNireiYamanaforBEAworkingpaper.pdf>
- ¹⁰ The CPTPP states that “No Party shall impose customs duties on electronic transmissions, including content transmitted electronically, between a person of one Party and a person of another Party.” Some trade agreements have a moratorium without referring to the WTO; other commit members to revieing the moratorium in light of developments at the WTO.
- ¹¹ To be sure, these data have limitations as they are not granular enough to account for different categories like cloud computing services or streaming services. They also probably also underestimate actual flows as often the data are collected by government through surveys. Stojkoski et al. (2024) usefully seek to go beyond the limitations of services data to quantify trade in digital goods.
- ¹² <https://www.oecd-ilibrary.org/docserver/57b50a4b-en.pdf?expires=1720246956&id=id&accname=guest&checksum=67456D86DIAC024659F7CB52CCEFD3B7>
- ¹³ In the CPTPP, digital product means “digital product means a computer program, text, video, image, sound recording or other product that is digitally encoded, produced for commercial sale or distribution, and that can be transmitted electronically”. The agreement states in Article 14.4 that “ No Party shall accord less favorable treatment to digital products created, produced, published, contracted for, commissioned or first made available on commercial terms in the territory of another Party, or to digital products of which the author, performer, producer, developer or owner is a person of another Party, than it accords to other like digital products.” In a footnote, the CPTPP states that “The definition of digital product should not be understood to reflect a Party’s view on whether trade in digital products through electronic transmission should be categorized as trade in services or trade in goods.”
- ¹⁴ To be sure, these data have limitations as they are not granular enough to account for different categories like cloud computing services or streaming services. They also probably also underestimate actual flows as often the data are collected by government through surveys. Stojkoski et al. (2024) usefully seek to go beyond the limitations of services data to quantify trade in digital goods.
- ¹⁵ Discrimination in the WTO agreements generally covers both ‘de jure’ discrimination (measures that explicitly draw distinctions between imported and domestic products, or between products in different countries) and ‘de facto’ discrimination (measures that do not explicitly draw distinctions between imported and domestic products, or between the products of different trade partners, but that discriminate in effect).
- ¹⁶ For example, the USTR’s annual National Trade Estimate Report notes that Canadian legislation targets online information and streaming platforms for revenue generation and compels these platforms to promote content owned by Canadian entities. Mexico has created a law to block foreign providers of digital services from offering their services in Mexico if they fail to comply with Mexico’s tax laws. See Office of the U.S. Trade Representative, 2023 *National Estimate Report on Foreign Trade Barriers* (Washington, DC: USTR, March 2023), https://ustr.gov/sites/default/files/2023-03/2023_percent20NTE_percent20Report.pdf.
- ¹⁷ Dunning (2000)
- ¹⁸ Blonigen, B. A. (2001). In Search of Substitution Between Foreign Production and Exports. *Journal of International Economics*, 53(1), 81-104.
- ¹⁹ Bauer, M., Lee-Makiyama, H., van der Marel, E., & Verschelde, B. (2014). *The Economic Importance of Getting Data Protection Right: Protecting Privacy, Transmitting Data, Moving Commerce*. ECIPE Occasional Paper, No. 3/2014.