

Chapter **Integrative**

Non-Tariff Measures and Regional Integration in ASEAN

Ha Thi Thanh Doan
Samuel Rosenow
Salvador M. Buban

August 2019

This chapter should be cited as

Ha Thi Thanh Doan, S. Rosenow, S.M. Buban (2019), 'Non-Tariff Measures and Regional Integration in ASEAN', in Ha Thi Thanh Doan and S. Rosenow (eds.), *Non-Tariff Measures in ASEAN-An Update*. Jakarta: ERIA, pp.1–31.

NON-TARIFF MEASURES AND REGIONAL INTEGRATION IN ASEAN

Ha Thi Thanh Doan

Economic Research Institute for ASEAN and East Asia

Samuel Rosenow

United Nations Conference on Trade and Development

Salvador M. Buban

Economic Research Institute for ASEAN and East Asia

1. Introduction

Whilst tariffs have declined following discipline instituted by the World Trade Organization (WTO), the use of non-tariff measures (NTMs) is on the rise worldwide (UNCTAD, 2013). This trend is also reflected in the updated NTM database of the Economic Research Institute for ASEAN and East Asia (ERIA) and the United Nations Conference on Trade and Development (UNCTAD), where the number of NTMs in ASEAN has increased over time. Since NTMs have the potential to restrict trade, the increase has raised concerns about returning to protectionism, which could hamper ASEAN's integration efforts.

Tariff reduction and the removal of non-tariff barriers (NTBs) are amongst the key components of ASEAN's efforts to enhance intra-regional trade. In principle, the ASEAN Trade in Goods Agreement (ATIGA), which came into force in 2010 (ASEAN Secretariat, 2010), explicitly stated obligations regarding NTMs. In practice, however, the integration agenda has focused primarily on tariffs, which have been reduced to 0.2% on average (ASEAN Secretariat, 2018). As room to liberalise tariffs further is limited, addressing NTMs is fundamental to realise the ASEAN Economic Community (AEC). Because NTMs constitute a grey area where trade policy meets public policy goals, effective NTM management must consider not only their trade-distorting effects but also their potential benefits.

The prerequisite for NTM management is a comprehensive and up-to-date database. The official ASEAN NTM database, which was collected in 2009 based on WTO notifications, does not reflect the actual incidence of NTMs in the region due to under-notification.¹ Moreover, ASEAN Member States (AMSs) have undergone substantial reform during the last 10 years. To respond to this urgent need, ERIA and UNCTAD have cooperated to construct a detailed ASEAN NTM database. The first database was launched in 2015, and an update was completed in early 2019 to capture the dynamics of regulatory reform in ASEAN.²

We analyse the application of NTMs in ASEAN countries, based on the updated ERIA–UNCTAD database, and discuss regional and national progress in addressing NTMs. Section 2 briefly describes NTMs. Section 3 documents the pattern of NTM application in ASEAN countries. To illustrate the evolution of NTMs, we compare the data collected in 2015 and 2018. We present descriptive statistics on the incidence of NTMs in ASEAN, based on standard indicators. Section 4 explores the correlation between NTMs and tariffs. This exercise assesses the possibility of NTMs being used as a protection tool in the context of tariff reduction. Section 5 discusses ASEAN’s ongoing efforts to address NTMs, broad initiatives, and sector-specific arrangements on NTMs. Section 6 summarises the key findings and recommends policies.

2. Non-tariff Measures: Definition and Classification

NTMs are broadly defined as policy measures, other than ordinary customs tariffs, which can have an economic effect on international trade (UNCTAD, 2013). NTMs include a wide array of policy instruments relevant to international trade (Box 1). Some NTMs such as quotas, export restrictions, price controls, or contingent trade protective measures are traditionally used as a commercial policy tool. They are often regarded as NTBs, which aim to protect domestic producers, have clear restrictive impact, and are against WTO rules. Technical tools – such as sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBTs) – are primarily designed to protect consumers’ health and safety, animal welfare, and the environment. In principle, these measures serve legitimate public policy goals and thus are legal. The definition also covers behind-the-border measures such as government procurement restrictions, finance measures, measures affecting competition, intellectual property, and trade-related investment measures.

¹ The database can be retrieved from ASEAN Secretariat (2012).

² Ing, Cordoba, and Cadot (2016) provide the project background and a detailed description of data collection.

Box 1: NTM Broad classification by MAST 4

Imports	Technical Measures	A. Sanitary and Phytosanitary Measures
		B. Technical Barriers to Trade
		C. Pre-shipment Inspection and Other Formalities
	Non-technical Measures	D. Contingent trade protective measures
		E. Non-automatic import licensing, quotas, prohibitions, quantity-control measures and other restrictions other than SPS or TBT measures
		F. Price control measures including additional taxes and charges
		G. Finance measures
		H. Measures affecting competition
		I. Trade-related investment measures
		J. Distribution restrictions
Exports	K. Restriction on post-sales services	
	L. Subsidies (excluding export subsidies under P7)	
	M. Government procurement restrictions	
	N. Intellectual property	
	O. Rules of origin	
	P. Export related measures	

Source: UNCTAD (2019).

Two points are worth noting here. First, contrary to the common negative perception of NTMs, UNCTAD's definition of NTMs is neutral. It does not judge the legitimacy of the measures or set the criteria to distinguish between general NTMs and discriminatory NTBs. If a regulation has the potential to impact trade by affecting the price or quantity of traded goods, it is categorised as an NTM. As such, the prevalence of NTMs is not necessarily a bad sign for the economy. As the economy grows and consumer wealth rises around the world, the demands on governments for health, safety, and environmental protection also increase. Some NTMs can even promote trade by reducing information asymmetries and enhancing product quality.³

However, NTMs, regardless of their objectives, can incur significant costs for producers, limiting trade flows. First, the procedural costs relate to a firm's efforts to prove compliance with NTMs, including monetary and time costs to search for information; conduct sampling, testing, and inspection; obtain certificates, permits, or licenses; or prove the

³ See, for example, Moenius (2004), Disdier et al. (2015), and Chen et al. (2008).

origins of products. Poor implementation by enforcement agencies exacerbates the burden.⁴

Second, the adjustment costs arise from a firm's investment in capital to meet the new requirements of product quality. Even if two countries apply the same NTM structure, the stringency gap can restrict trade. Not adopting common international standards raises adjustment costs and discourages firms from trading. To overcome the standard gap, firms may need to adopt product and process innovation. Quality upgrading sometimes involves a switch to a new and more costly source of intermediate inputs. Over time, producers may be able to adapt to the NTMs and improve market access, but not all firms have the technology and financial capacity to do so. Adjustment costs are more pronounced for multi-destination firms due to inconsistent standards as well as small firms, which lack the resources to cover the costs.. Consequently, firms may divert their trade to markets with less restrictive NTMs or stop exporting. Both cases are likely to result in a reduction in trade flows or variety.⁵

Finally, in the context of global value chains, NTMs on inputs could add certain costs to firms in downstream sectors. Depending on a firm's position in the value chain, NTM-induced accumulated cost varies.

3. Incidence of Non-tariff Measures in ASEAN

This section presents a brief overview of the prevalence of NTMs in AMSs. Table 1 illustrates the aggregate trend in ASEAN by comparing the number and composition of NTMs in ASEAN in 2015 and in 2018. Two features stand out.

Table 1: NTMs by Type, 2015 and 2018

NTM Type	Description of NTM	2015		2018	
		Number of NTMs	%	Number of NTMs	%
A	Sanitary and phytosanitary measures	2,577	31.3	2,795	29.4
B	Technical barriers to trade	2,924	35.5	3,443	36.2
C	Pre-shipment inspection and other formalities	266	3.2	325	3.4

⁴ The International Trade Center (2015) showed that 65% of NTMs on agricultural and 77% on manufacturing products are considered burdensome because of procedural obstacles. Amongst the most cited procedural obstacles are time constraint, informal payment, administrative burdens related to regulations, lack of transparency, and lack of sector-specific facilities.

⁵ See, for example, Kee, Nicita, and Ollareaga (2009); Hoekman and Nicita (2011); Ing, Cordoba, and Cadot (2016); Fontagne and Orefice (2018); Melo et al. (2014); Fugazza, Olarreaga, and Ugarte (2017); Beestermoller et al. (2018); and Shepherd (2015).

NTM Type	Description of NTM	2015		2018	
		Number of NTMs	%	Number of NTMs	%
E	Non-automatic import licensing, quotas, prohibitions, quantity-control measures and other restrictions other than SPS or TBT measures	708	8.6	819	8.6
F	Price control measures including additional taxes and charges	389	4.7	438	4.6
G	Finance measures	13	0.2	18	0.2
H	Measures affecting competition	18	0.2	27	0.3
I	Trade-related investment measures	2	0	7	0.1
J	Distribution restrictions	5	0.1	8	0.1
L	Subsidies and other forms of support	0	0	1	0
M	Government procurement restrictions	1	0	1	0
N	Intellectual property	1	0	1	0
P	Export related measures	1,333	16.2	1,619	17
	Total	8,237	100	9,502	100

Source: ERIA–UNCTAD Raw NTMs in ASEAN Database, version 2019.

First, the total number of NTMs has increased by approximately 15% in the last 3 years. On the one hand, this trend reflects how AMSs respond to various policy needs, including protecting consumers and enhancing competitiveness by improving product standards. As a country becomes more integrated into the global economy, it needs more and appropriate trade regulations. Having just a few NTMs could reflect gaps in consumer and environmental protection and potential under-regulation. On the other hand, the rise of NTMs in the context of tariff reduction suggests that NTMs are sometimes used as a substitute for tariffs. Regardless of the objectives, however, an increase in NTMs could raise trade costs, inhibiting trade expansion.

Second, the structure of NTMs has remained relatively stable across the years. TBTs are the most prominent category of NTMs, followed by SPS measures. These technical measures account for about 70% of total NTMs. The prevalence of technical NTMs is similar in developed countries, where technical measures are widely used to protect consumers, the environment, and animal welfare.

Amongst non-technical NTMs, hard measures on price and quantity control constitute a non-negligible portion of NTMs in ASEAN. Taken together, NTMs under category E and category F accounted for 13% of total NTMs in 2015 and 2018. Except under specifically determined circumstances, quantity controls (category E) are generally prohibited under the General Agreement on Tariffs and Trade (GATT) 1994. Only a small fraction of these measures are quotas, prohibitions, and export-restraint arrangements. The most

used measure is non-automatic licensing (category E1). In all 10 AMSs, non-automatic licensing falls in the top-15 NTMs by share. Apart from economic reasons, some licensing requirements serve religious, political, or security goals, but the measures' objectives are not always clear-cut. Regarding price controls, the most used NTM is category F6, on additional charges and taxes levied in connection with government services, including fees on customs inspection, processing, and servicing, and on import licences. These measures are often used to complement SPS measures and TBT. In addition, import charges sometimes make up for declining tariff revenue.

Export-related measures (category P) constitute approximately 17% of NTMs. Conformity assessment is the most popular sub-category under P. Compared with NTMs on imports, export-related measures are less likely to be used with protectionist intent. The prevalence of NTMs on exports, however, could impose a substantial burden on exporters and, as a consequence, impede an economy's competitiveness. Burdens include the lack of good infrastructure, firms' limited capability, and weak enforcement agencies.

Table 2 details the distribution of NTMs by country. We group the composition of NTMs into five categories – A, B, E and F, P, and others.

Table 2: Non-tariff Measures by Type and by Country, 2015 and 2018

Country	Total (number)		A (in %)		B (in %)		E and F (in %)		P (in %)		Others (in %)	
	2015	2018	2015	2018	2015	2018	2015	2018	2015	2018	2015	2018
Brunei Darussalam	555	562	32.1	31.7	43.4	43.6	13.8	14.1	10.5	10.5	0.2	0.1
Cambodia	276	367	12.3	13.4	34.8	35.7	21.3	18.5	31.2	31.9	0.4	0.5
Indonesia	767	977	19.8	24.5	48.2	44.7	10.9	10.9	13.4	12.7	7.7	7.2
Laos	342	520	14.3	10.8	19.3	27.1	32.8	25.3	29.2	33.1	4.4	3.7
Malaysia	876	920	36.2	35.2	40.6	40.4	7.9	8.5	14.6	15.2	0.7	0.7
Myanmar	193	267	40.4	30.0	17.1	19.1	18.2	21.0	21.8	24.0	2.5	5.9
Philippines	1075	1220	29.4	29.8	27.7	29.3	20.8	20.4	18.6	17.0	3.5	3.5
Singapore	587	610	22.3	22.3	51.4	49.3	17.1	17.5	9.2	10.7	0	0.2
Thailand	3039	3295	39.6	38.1	33.4	33.3	8.7	8.7	13.0	13.7	5.3	6.2
Viet Nam	527	764	22.4	14.9	27.9	40.6	14.4	12.7	31.7	28.7	3.6	3.1
Total/average	8237	9502	26.9	25.1	34.4	36.3	16.6	15.8	19.3	19.7	2.81	3.14

Note: A= Sanitary and Phytosanitary; B= Technical Barriers to Trade; E = Non-automatic import licensing, quotas, prohibitions, quantity-control measures and other restrictions other than SPS and TBT; F = Price control measures; P = export-related measures.

Source: ERIA-UNCTAD Raw NTMs in ASEAN Database, version 2019.

Table 2 reveals notable cross-country heterogeneity in the structure of NTMs. Although on the rise in all 10 countries, the numbers of NTMs are substantially different across countries. Thailand has the largest number of NTMs, accounting for about one-third of all NTMs in ASEAN. The Philippines has the second largest but falls far behind, with 1,220 in 2018. Cambodia and Myanmar have the fewest, with 367 and 267, respectively.

However, the numbers are not easily comparable across countries for three reasons. First, a large NTM count does not imply stricter protection. Second, NTM count statistics reflect important sources of discrepancy in the way countries issue their regulations. For example, a country that promulgates product- or partner-specific regulations will see more NTMs than a country that uses a single regulation to regulate broad product categories. Third, a single import restriction can be significantly more restrictive than several transparent labelling and packaging requirements. Thus, in interpreting the prevalence of NTMs, one should utilise a combined set of criteria. Other indicators, presented later in this section, will shed more light on this issue.

Consistent with the trend observed in Table 1, SPS measures and TBT are used extensively by individual countries. For TBT, the increasing trend seems dominant. A decline in the share of TBT, if any, is relatively small. TBT measures contribute over 40% of total NTM stock in half the countries. SPS measures are particularly popular in Thailand, Malaysia, Brunei, and Myanmar, where over 30% of NTMs are SPS measures. The share of SPS measures is significantly lower than that of TBT in Cambodia, Indonesia, Lao People's Democratic Republic (Lao PDR), Singapore, and Viet Nam.

NTMs under E, F, and P are widely used amongst AMSs, notably Cambodia, Lao PDR, Myanmar, and Viet Nam, where these NTMs constitute around 40% of total NTMs. In Lao PDR, approximately 60% of NTMs are under E, F, and P. The heavy use of these measures highlights the need for smooth and effective implementation. Governments can achieve this by improving institutional capacity and infrastructure.

The use of NTMs varies not only across countries but also across products. Some products such as food, chemicals, machinery, and electrical machinery are heavily regulated to protect consumers and the environment. Others are less regulated due to their nature. Table 3 reports the number of NTMs, ASEAN-wide, by 1-digit Harmonised System (HS) sectors. Agricultural products, including animal products and vegetables, account for the lion's share of NTMs. Most NTMs in this sector are governed by ministries of agriculture as SPS measures and TBT for health and safety concerns. Food products are subject to tighter regulations for the same reason. On top of that, sensitive products such as rice and sugar are subject to quantity or price controls.

For non-food and non-agricultural products, TBT are more popular. Top-ranked sectors are chemicals and allied industries, machinery and electrical machinery, and mineral products. The first group accounts for around 11% of total NTMs, the second and third each for about 7%. Chemical products, including pharmaceuticals, fertilisers, explosives, and others, affect health and safety, so it is not surprising that they are heavily regulated. Indeed, the ministry of health is amongst the top issuing agencies for NTMs on chemical products. As for machinery and electrical machinery and mineral products, it is worth noting that they are trade-intensive.⁶ The prevalence of NTMs on these products reflects the need to monitor trade. Such regulations can reduce information asymmetries and enhance the quality of imported final or intermediate inputs, but can also have trade-distorting effects if not well-designed and implemented.

Table 3: NTMs by Sector, 2015 and 2018

Sector	2015		2018	
	Total (number)	Share (in %)	Total (number)	Share (in %)
Animal & Animal Products	1,762	21.4	2,069	21.8
Chemicals & Allied Industries	936	11.4	1,089	11.5
Foodstuffs	1,148	13.9	1,226	12.9
Footwear / Headgear	20	0.2	23	0.2
Machinery / Electrical	520	6.3	636	6.7
Metals	202	2.5	223	2.3
Mineral Products	483	5.9	685	7.2
Miscellaneous	202	2.5	225	2.4
Plastics/Rubbers	213	2.6	239	2.5
Raw Hides, Skins, Leather, & Furs	9	0.1	7	0.1
Stone / Glass	178	2.2	194	2
Textiles	43	0.5	45	0.5
Transportation	164	2	214	2.3
Vegetable Products	2,242	27.2	2,488	26.2
Wood & Wood Products	115	1.4	139	1.5
Total	8,237	100	9,502	100

Note: Sectors are as defined by HS 2017 2-digit sections.

Source: Authors' (unweighted) calculations based on ERIA–UNCTAD Raw NTMs in ASEAN Database, version 2019.

⁶ In 2017, electrical machinery and mechanical appliances accounted for approximately 35% of ASEAN exports and imports. Mineral fuels and mineral oils contribute to over 10% of ASEAN trade (ASEAN Secretariat, 2018).

NTM count statistics are not, per se, indicative of NTMs' potential impact on trade. Efforts have been made to measure the trade effect of NTMs, utilising trade data at the country-product level and, to some extent, the firm level. Since this report sets the scene for further analysis of NTMs, we utilise only simple indicators based on the inventory approach – in particular, we rely on frequency index, coverage ratio, and prevalence score.

The frequency index measures the share of traded products affected by at least one NTM. Since all products are treated equally, the frequency index does not reflect the importance of each product in the export or import basket. For example, if NTMs are applied to a small number of products, the frequency index is small. But if these products are trade-intensive, the NTMs' effect on trade can be large. The coverage ratio overcomes this weakness by measuring the share of trade value, instead of counting the number of products, affected by at least one NTM.

Notwithstanding their straightforward interpretation, the frequency index and coverage ratio suffer from one drawback: they do not count the number of NTMs per product. It is rare to observe a single NTM imposed on each traded product. Usually, several measures are combined. A product can be subjected to a sanitary standard under SPS chapter A, plus a technical measure on quality in TBT chapter B, together with non-automatic licensing under E. Within a chapter, different measures can also be applied in parallel. For TBT reasons, for instance, labelling, production requirement, product safety requirement, and conformity assessment can be applied simultaneously to a single product. Arguably, the more NTMs applied to the same product, the larger the potential trade effect on that product (Nicita and Gourdon, 2013).⁷ The prevalence score is thus introduced to capture the average number of NTMs per product.

Finally, these indicators, despite being informative, do not capture the stringency of NTMs. Two countries may apply the same technical NTM to the same product. Yet, more often than not, there is a gap in the strictness of NTMs. Whilst risk to consumers is an important concern, stricter-than-necessary standards burden traders. Some countries may take advantage of the gap to use standards as a disguised trade barrier.

Figure 1 and Figure 2 compare the pattern of import NTMs by country in 2015 and in 2018. Both figures demonstrate significant cross-country differences in NTM prevalence. Imports tend to be more heavily regulated in less developed economies. NTMs regulated more than 80% of imports – measured by number of products and import value – in Cambodia, Lao PDR, Myanmar, and Viet Nam in 2018. Myanmar exhibits a remarkable surge. Within 3 years, its frequency index and coverage ratio have increased by

⁷ The appendix explains the methodology.

approximately 50 and 20 percentage points, respectively, partly reflecting the country's effort to reintegrate into the global market after decades-long political turmoil. The Philippines' frequency index and coverage ratio are close to 80%. The four countries show little discrepancy between coverage ratio and frequency index indicators.

In Singapore, Brunei Darussalam, and Malaysia, in contrast, NTMs are more concentrated. The frequency index is about 50%, whilst the coverage ratio is noticeably larger. The gap between the coverage ratio and frequency index suggests that NTMs focus on more trade-intensive products.

The low prevalence of NTMs in Thailand seems to be in conflict with its large NTM count. Its NTMs target specific products that can only be partially defined by the 8-digit product code.⁸ At the aggregate HS level, therefore, the actual range of products affected by NTMs remains relatively narrow.

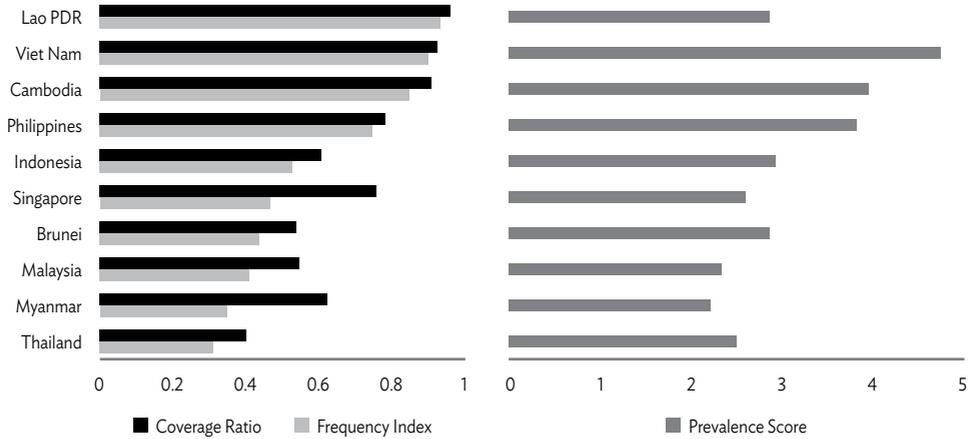
Figure 1 and Figure 2 suggest a positive correlation between the trade value affected by NTMs and the average number of NTMs per product. On average, all countries apply multiple NTMs to a single product, whilst countries with larger coverage ratios and frequency indices tend to have larger prevalence scores. Viet Nam takes the lead, with approximately five NTMs per product, followed by Cambodia, Indonesia, and the Philippines. No country applies fewer than two NTMs per product. Cross-country discrepancy should be interpreted with caution: a large number may be evidence of heavy regulation, but differences may originate from how detailed a regulation is. In certain cases, the text is not detailed enough to allow the distinction of NTMs at the most disaggregated level. Then, measures are classified under a broader code, lowering the prevalence score.

Turning to exports, the patterns in Figure 3 and Figure 4 are different. Whilst Cambodia, Lao PDR, Myanmar, the Philippines, and Viet Nam are still amongst the most rigorous users of NTMs, the application of NTMs to exports is more diverse than to imports across countries. The coverage ratio is remarkably larger than the frequency index for most countries, suggesting that NTMs concentrate on export-intensive products. Brunei shows a clear deviation, however, as about 40% of its export products are subject to NTMs but less than 5% of its export value is affected. This different pattern may be due to the concentrated structure of Brunei exports; oil and gas are the largest exports, contributing more than 90% of total export revenue.

⁸ Please refer to chapter 9 for more detailed explanation.

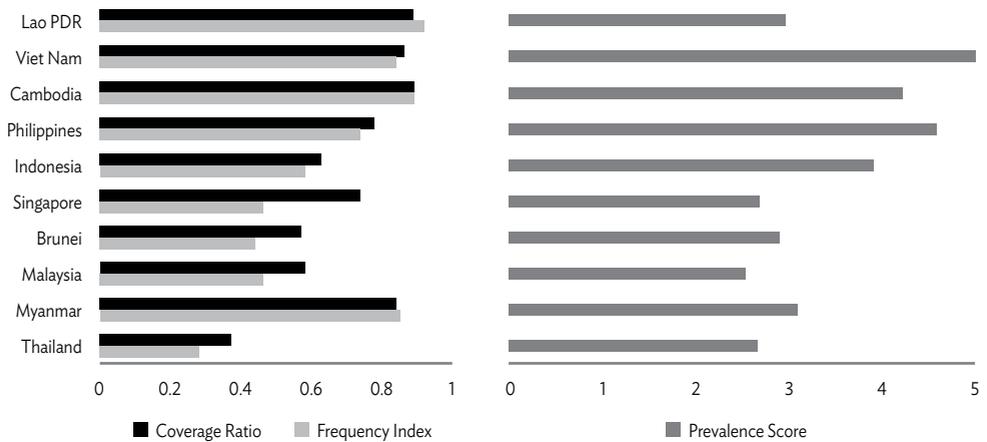
The largest NTM count per product is around 2.7. Half the countries apply fewer than one NTM per product.

Figure 1: Incidence and Prevalence of Import Non-tariff Measures, by Country, 2015



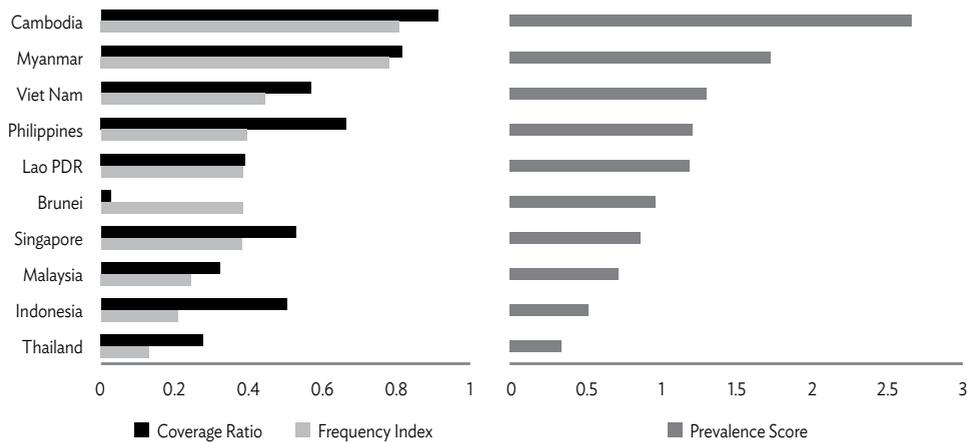
ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People's Democratic Republic, NTM = non-tariff measure.
 Note: Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
 Source: Authors' calculations based on the ERIA-UNCTAD Raw NTMs in ASEAN Database, version 2019

Figure 2: Incidence and Prevalence of Import Non-tariff Measures by Country, 2018



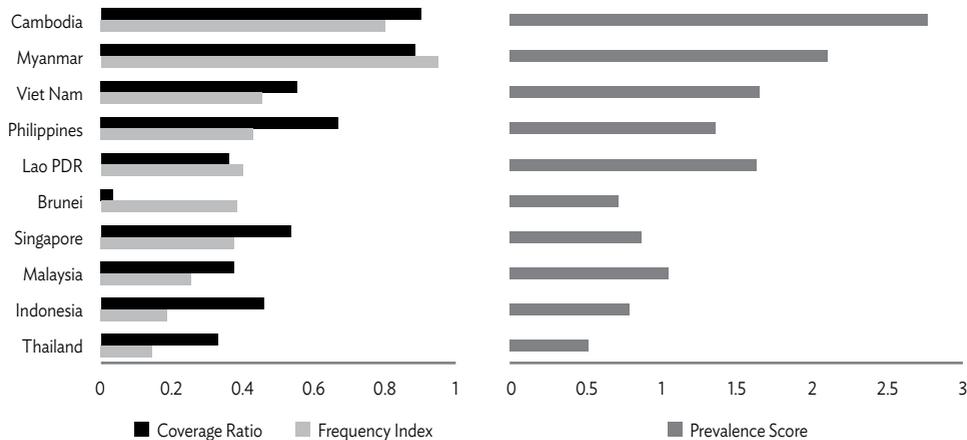
ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People's Democratic Republic, NTM = non-tariff measure.
 Note: Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
 Source: Authors' calculations based on the ERIA-UNCTAD raw NTMs in ASEAN Database, version 2019.

Figure 3: Incidence and Prevalence of Export Non-tariff Measures, by Country, 2015



ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People’s Democratic Republic, NTM = non-tariff measure.
 Note: Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
 Source: Authors’ calculations based on the ERIA-UNCTAD raw NTMs in ASEAN Database, version 2019.

Figure 4: Incidence and Prevalence of Export Non-tariff Measures by Country, 2018



ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People’s Democratic Republic, NTM = non-tariff measure.
 Note: Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
 Source: Authors’ calculations based on the ERIA-UNCTAD raw NTMs in ASEAN Database, version 2019.

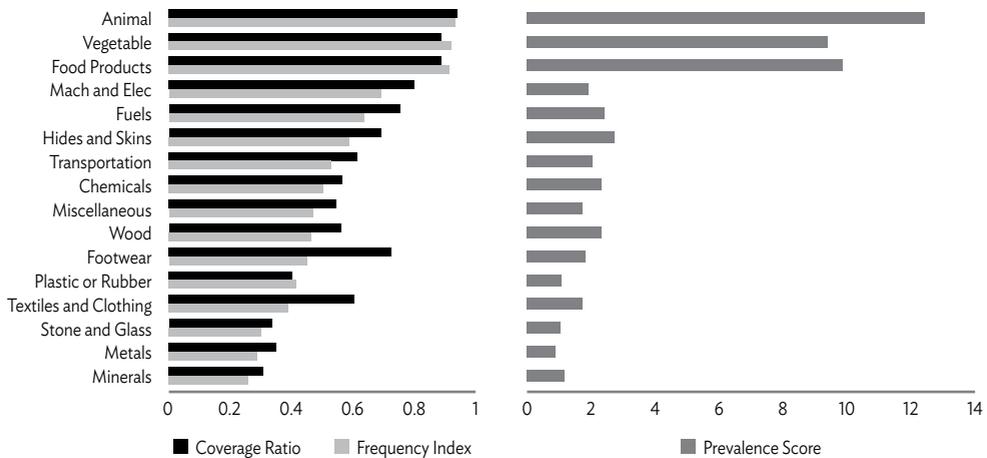
Figure 5 and Figure 6 provide a snapshot of import NTMs by product group, giving rise to three notable observations. First, animal, vegetable, and food products are the most regulated sectors, with NTMs affecting more than 80% of their imports. The average number of NTMs per product in these sectors is substantially higher than average – exceeding 10 measures each. The NTMs on agriculture and food products address health and safety concerns.

Second, trade-intensive manufacturing sectors, including those with deeper participation in global value chains, such as machinery and electrical machinery and transportation, are heavily regulated. As the impact of NTMs is compounded when a semi-finished product moves back and forth across borders, the high incidence of NTMs in these sectors could raise trade costs for exporters and importers at different stages along the supply chain.

Finally, NTMs are less prevalent in resource-based sectors such as stone and glass, minerals, and metals, which are relatively homogeneous and require fewer specific standards.

Figure 7 and Figure 8 illustrate the incidence of NTMs by export sector. Like imports, agricultural products are subject to a large incidence of NTMs. In manufacturing, NTMs are prominent in machinery and electrical machinery. However, the number of NTMs per export product and the ratio of exports affected by NTMs are generally smaller than those of imports. Resource-based products such as fuels and wood also exhibit a large incidence of NTMs, which may reflect the need to preserve natural resources.

Figure 5: Incidence and Prevalence of Import Non-tariff Measures in ASEAN, by Sector, 2015



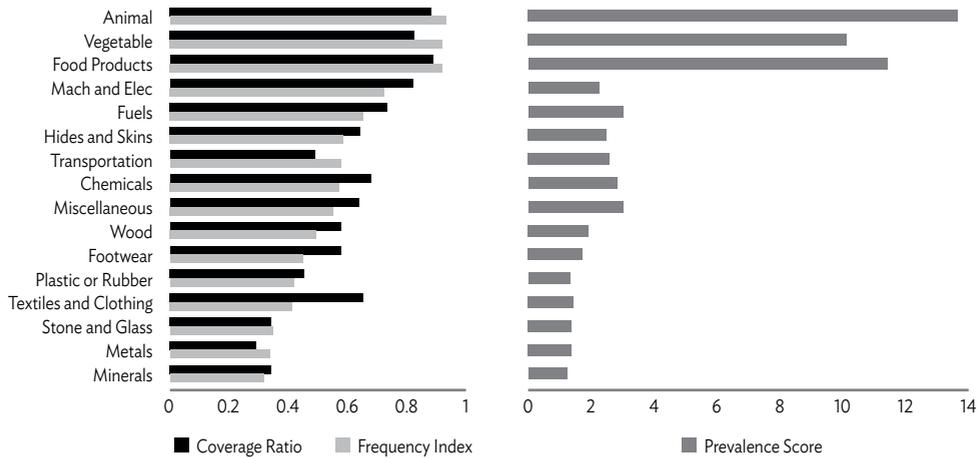
ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People's Democratic Republic, NTM = non-tariff measure.

Notes:

1. Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
2. Sector as defined in HS 2017 2-digit sections (World Customs Organisation, 2017).

Source: Authors' calculations based on the ERIA-UNCTAD raw NTMs in ASEAN Database, version 2019

Figure 6: Incidence and Prevalence of Import Non-tariff Measures in ASEAN, by Sector 2018



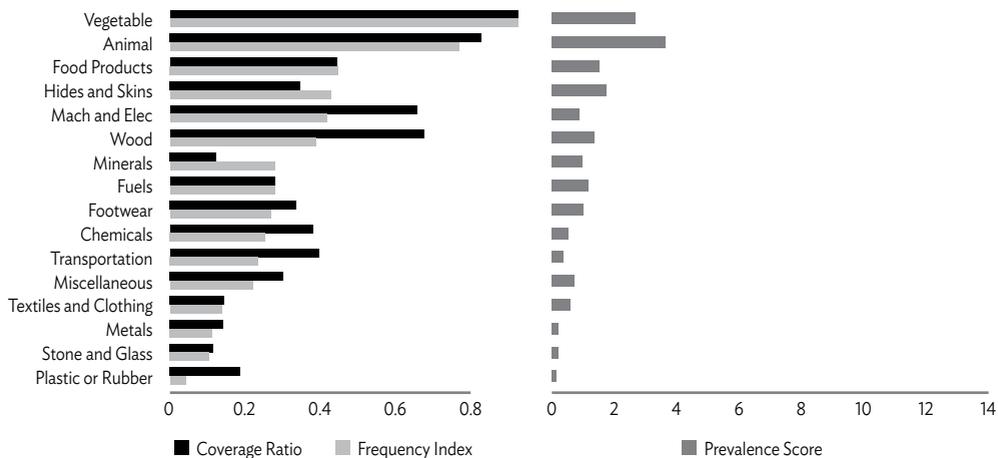
ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People’s Democratic Republic, NTM = non-tariff measure.

Notes:

1. Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
2. Sector as defined in HS 2017 2-digit sections (World Customs Organisation, 2017).

Source: Authors’ calculations based on the ERIA-UNCTAD raw NTMs in ASEAN Database, version 2019.

Figure 7: Incidence and Prevalence of Export Non-tariff Measures in ASEAN, by Sector, 2015



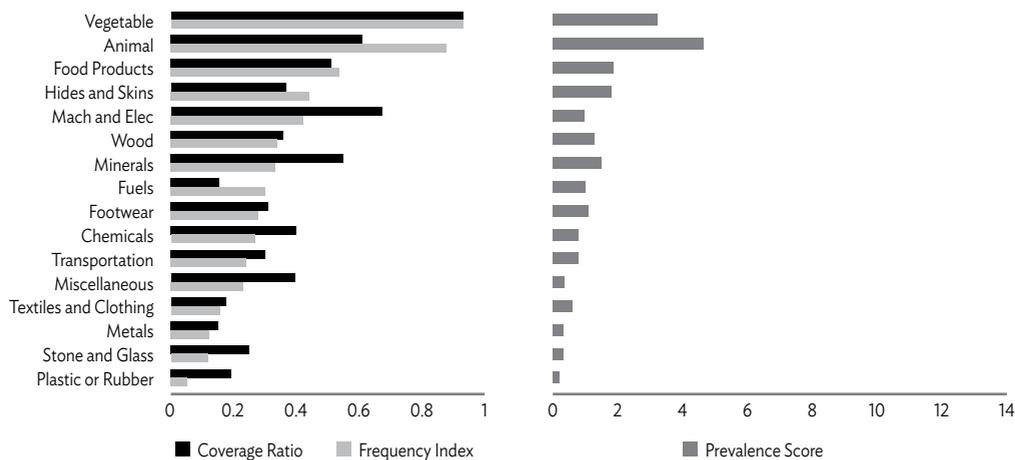
ASEAN = Association of Southeast Asian Nations, Lao PDR = Lao People’s Democratic Republic.

Notes:

1. Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).
2. Sector as defined in HS 2017 2-digit sections (World Customs Organisation, 2017).

Source: Authors’ calculations based on ERIA-UNCTAD Raw NTMs in ASEAN Database, version 2019.

Figure 8: Incidence and Prevalence of Export Non-tariff Measures in ASEAN by Sector, 2018



Notes:

1. Trade year used is based on the latest available import data at the HS 6-digit level (World Customs Organisation, 2017).

2. Sector as defined in HS 2017 2-digit sections (World Customs Organisation, 2017).

Source: Authors' calculations based on ERIA-UNCTAD Raw NTMs in ASEAN Database, version 2019.

Overall, the pattern of NTM application in ASEAN countries is largely in line with international practice, where most NTMs are SPS measures or TBT. Agricultural products and manufacturing sectors with deep participation in global value chains – such as machinery, electronics, and transportation – are amongst the most heavily regulated.

4. Complementarity Between Tariffs and Non-tariff Measures

NTMs can sometimes be used to achieve the same policy outcomes as tariffs: to protect domestic producers and to reclaim revenue loss due to tariff liberalisation. The expanding imposition of NTMs in the context of tariff reduction suggests that they might be used as a substitute for tariffs (Ing, Cordoba, and Cadot, 2016). If low tariffs are found alongside heavy NTM use, a country may likely be replacing tariffs with NTMs for protection.⁹

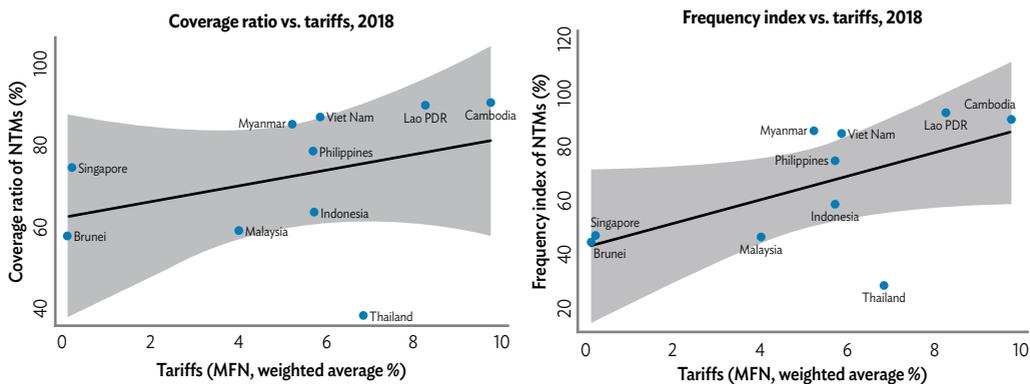
To explore whether NTMs are levied to complement or substitute for tariffs, we compute simple correlation between tariffs and indicators of NTM pervasiveness at the country level. Results are in Figure 9. Contrary to the opposite movement found at the aggregate

⁹ The interpretation of the opposite case, when high tariffs couple with low NTM counts, is not straightforward. The modest use of NTMs could be a sign of under-regulation, amongst others.

level, Figure 9 demonstrates complementarity between NTMs and tariffs. Although large variance exists across countries, a positive correlation is observed. Countries with more protective tariff regimes tend to impose more NTMs, and vice versa. A clear deviation is Thailand, where a relatively high tariff level pairs with significantly lower NTM imposition.

Richer countries, particularly Singapore and Brunei, are at the lowest end of the shaded area, which might suggest that they are more committed to reducing all types of trade barriers. In contrast, a combination of high tariffs and large NTM prevalence in countries at the higher end in the panels, such as Cambodia and Lao PDR, may indicate stronger protection.¹⁰

Figure 9: Complementarity between tariffs and Non-tariff Measures



MFN = most favoured nation, NTM = non-tariff measure.

Note: The fitted line is obtained from a linear regression of coverage ratio or frequency index of NTMs on tariffs. The shaded area captures confidence interval of the mean.

Source: Authors' calculations based on ERIA-UNCTAD Raw NTMs in ASEAN Database, version 2019.

5. Addressing Non-tariff Measures in ASEAN – The Way Forward

5.1 Regional Initiative

Mechanism at Work

ASEAN's efforts to address NTMs is manifested in various agreements, strategic action plans, and guidelines. Four areas have been the focus of ASEAN in relation to NTMs: (1) ATIGA, (2) AEC 2025 Trade Facilitation Strategic Action Plan (SAP), (3) Guidelines for

¹⁰ Figure 9 does not indicate a causality relationship.

the Implementation of ASEAN Commitments on Non-Tariff Measures on Goods, and (4) Good Regulatory Practice (GRP) Core Principles.

First, the ATIGA, which contains several provisions relevant to ensuring transparency and management of NTMs: Article 11 (Notification Procedures), Article 12 (Publication and Administration of Trade Regulations), Article 13 (ASEAN Trade Repository), Article 40 (Application of Non-Tariff Measures), and Article 42 (Elimination of Other Non-Tariff Barriers). These provisions are similar to the AMS obligations in the WTO agreement.

For instance, Article 11 of the ATIGA contains the notification procedures that an AMS must follow for any measure, including NTMs, that may potentially affect the ATIGA's operation. This provision allows other AMSs to comment within a certain period before the measure takes effect. Any notification of the measure shall be made to the ASEAN Senior Economic Officials Meeting (SEOM) and the ASEAN Secretariat.

Articles 12 and 13 set the obligations for ensuring transparency of trade-related information. Article 13 provides for the establishment of a trade repository, in which NTM information is a key component.¹¹ The original idea was to have a centralised ASEAN trade repository, to be maintained by the ASEAN Secretariat. Later, however, the consensus was that establishing the national trade repositories (NTRs) would serve as an interim step towards developing the ASEAN trade repository.

Article 40 stipulates that AMSs shall not adopt or maintain any NTMs on intra-ASEAN export and import activities, unless such action is consistent with AMS rights and obligations under the WTO or ATIGA. Article 40 also notes that any application of measures should be consistent with other related provisions in the ATIGA, particularly Articles 11, 12, and 13.

Article 42 obligates AMSs to review the ASEAN NTM database mentioned in Article 40 to identify, with a view to eliminating, NTBs other than those identified as quantitative restrictions. NTBs will be eliminated through various ASEAN bodies such as the Coordinating Committee for the Implementation of the ATIGA (CCA), ASEAN Consultative Committee on Standards and Quality (ACCSQ), and ASEAN Committee on SPS, where these bodies will submit a recommendation to the ASEAN Free Trade Area (AFTA) Council through the SEOM. The provision indicates the tranches and timelines

¹¹ Nine areas of trade-related information include (1) tariff nomenclature; (2) most favoured nation tariffs, preferential tariffs offered under this Agreement and other Agreements of ASEAN with its Dialogue Partners; (3) Rules of Origin; (4) NTMs; (5) national trade and customs laws and rules; (6) procedures and documentary requirements; (7) administrative rulings; (8) best practices in trade facilitation applied by each AMS; and (9) list of AMS authorised traders.

by which AMSs will eliminate the identified NTBs, and such elimination shall be agreed by the AFTA Council.

In addition to the general provisions on NTMs, the ATIGA contains provisions on standards, technical regulations, and conformity assessment procedures. Chapter 7, particularly Articles 73–76, outlines procedures and requirements to address TBT through (1) Harmonisation of Standards, Technical Requirements and Conformity Assessment Procedures; (2) Mutual Recognition Arrangements (MRAs); and (3) Development of Single Regulatory Regime in certain priority integration sectors (ASEAN Secretariat, 2004). The objective of the ASEAN Agreement for the Integration of Priority Sectors is to identify measures to be implemented by AMSs, with clear timelines, to integrate the priority sectors into ASEAN in a progressive, expeditious, and systematic manner. Of the 11 priority sectors, there are only 4 – air travel, e-ASEAN, fisheries, and tourism – that the TBT Agreement does not cover as part of the work of ACCSQ. In addition to the seven remaining sectors, ASEAN has confirmed the inclusion of building and construction materials as a priority sector under the purview of the ACCSQ (for the TBT Agreement).

Second, the SAP (ASEAN Secretariat, 2017), particularly item 3, which provides a strategic objective that ‘Put[s] in place an effective and responsive regional approach to efficiently address the trade distorting effect of NTMs with a view to pursuing legitimate policy objectives whilst reducing cost and time of doing business in ASEAN’ (ASEAN Secretariat, 2017).

The SAP sets five key goals related to NTMs: (1) update the ASEAN NTM database, utilising the ERIA–UNCTAD NTMs in ASEAN database as a primary input; (2) cross-notify NTMs in case an AMS comes across an NTM issued by another AMS that has not been properly notified; (3) enhance the ASEAN Solutions for Investments, Services and Trade (ASSIST) mechanism – an Internet-based platform and non-binding mechanism that allows the private sector to submit complaints about NTMs, amongst other components; (4) strengthen AMS national trade facilitation committees (NTFCs) to provide a regulatory oversight function to review existing NTMs; and (5) establish a mechanism to provide the opportunity for AMSs to comment, to a certain extent, on proposed new or revised laws and regulations on border measures before their adoption.

The SAP aims to harmonise technical requirements and simplify administrative procedures based on international standards and MRAs (ASEAN Secretariat, 2017), to help traders reduce time and cost in complying with rules and procedures for trading products in ASEAN.

Third, the Guidelines for the Implementation of ASEAN Commitments on Non-Tariff Measures on Goods, which provide a general framework to improve the transparency and management of NTMs. The recently adopted non-binding guidelines provide for operationalising key ATIGA elements and provisions related to NTMs, such as Article 11 (Notification Procedures), Article 12 (Publication and Administration of Trade Regulations), Article 13 (ASEAN Trade Repository), Article 40 (Application of Non-Tariff Measures), and Article 42 (Elimination of Other Non-tariff Barriers). The guideline provisions endorsed by the AFTA Council will cover new NTMs but may not sufficiently address the need to review the barrier effect of current NTMs.

Fourth, adoption of the ASEAN GRP Core Principles.¹² AMSs recently undertook a regional initiative to help improve approaches in preparing laws and regulations at the national level. Given renewed emphasis for better regulations and to follow through on the importance of GRP in the AEC Blueprint 2025 on GRP, the ASEAN Economic Ministers (AEM) adopted the ASEAN Work Plan on GRP 2016–2025 at the 23rd AEM Retreat in March 2017, and the AEC Council Ministers endorsed it in April 2017. It has also been underscored that enhanced regulatory practice and capacity of individual AMSs are key to the successful delivery of national development agendas, and to implementing regional commitments and achieving ASEAN’s long-term competitiveness.

ASEAN Institutions Related to Non-tariff Barriers

Overseeing the implementation of these measures and initiatives mostly falls under the ASEAN Trade Facilitation Joint Consultative Committee (ATF-JCC), the CCA, and the ACCSQ.

In relation to NTMs, the CCA, as provided in Article 42 (Elimination of Other Non-Tariff Barriers) of the ATIGA, and in consultation with the relevant ASEAN bodies, is tasked to ‘review any non-tariff measure notified or reported by any other Member State or by the private sector with a view to determining whether the measure constitutes as a NTB’. If the review results in identification of an NTB, the AMS imposing it shall eliminate it in accordance with the provisions of the ATIGA.

¹² The elements of the ASEAN GRP Core Principles are (1) achieve clarity on policy rationale, objectives, and institutional frameworks; (2) produce benefits that justify costs and are least distortive to the markets; (3) be consistent, transparent, and practical; (4) support regional regulatory cooperation; (5) promote stakeholder engagement and participation; and (6) be subject to regular review for continued relevance, efficiency, and effectiveness.

The ATF–JCC should develop a strategic action plan for trade facilitation; draft, periodically review, and update the ASEAN Work Programme on Trade Facilitation, which will set out clear targets and timeframes for implementation, factoring in all initiatives pursued by the relevant bodies; and direct and coordinate the trade facilitation activities of all relevant ASEAN bodies playing a role in trade facilitation.

The ACCSQ was established to facilitate the removal of TBT amongst AMSs to expand intra- and extra-ASEAN trade by harmonising standards, identifying and initiating sectoral MRAs, and harmonising sectoral regimes. This is in line with monitoring implementation of the ATIGA in relation to standards, technical regulations, and conformity assessment procedures, amongst others. The work is extended to partners outside ASEAN that provide support on standards, technical regulations, and conformity assessment procedures such as the ASEAN free trade agreements and cooperation with dialogue partners. The focus of ASEAN’s work is on agreed priority areas or sectors, which cover capacity building and institutional strengthening (ASEAN Secretariat, 2010).

Preliminary Assessment

ASEAN has provided pathways to addressing NTMs through the various ATIGA provisions, the SAP, implementing guidelines, and other initiatives related to NTMs. However, progress in populating the NTM sections of AMSs’ trade repositories varies substantially. Some AMSs have a centralised trade repository where the NTMs can be found, whilst others only link NTMs to government agency websites.¹³

As stipulated in Article 13 of the ATIGA, NTRs should contain all trade information, including on NTMs, in a single repository to ease updating and monitoring of NTM implementation. For example, some import NTMs provide for a detailed list of requirements, including forms to be used or filled up, whilst others have more general information. Sharing the updated ERIA–UNCTAD database on NTMs will help AMSs populate their NTM section and verify the NTMs in the database.

ASEAN needs to work further on obligating AMSs to notify NTMs before they are implemented. Although Article 11 (Notification) of the ATIGA is mandatory, we are not aware of any consequences for an AMS that fails to comply with it. Stakeholders might not, therefore, be able to make informed decisions on trade.

¹³ Please refer to individual country’s chapters for more details.

The enhanced version of ASSIST allows the private sector to report an NTM or trade-related barrier elements of NTMs, but information is still confined to parties involved in the complaints. Although complaints can be filed anonymously, companies may fear reprisals from government agencies, which could discourage private companies from using the facility.

The ACCSQ oversees standards and conformance with obligations under TBT and has put in place MRAs and a harmonised regulatory regime (Box 2), but implementation is uneven across AMSs. Some have yet to establish an accreditation body, relying instead on accredited testing facilities in other AMSs to fully benefit from MRAs.

Remaining challenges include enhancing of AMSs' technical infrastructure capability to support adoption of harmonisation standards; the ability to support local industry by making available accredited testing and certification of products in some AMSs; and continuous training of personnel to support and sustain the work on standards, technical regulations, and conformity assessment.

Box 2: Sectoral Initiatives to Address Technical Barriers to Trade

Existing Mutual Recognition Arrangements (MRAs)

- ASEAN Sectoral MRA for Electrical and Electronic Equipment (2002)
- ASEAN Sectoral MRA for Good Manufacturing Practice Inspection of Manufacturers for Medicinal Products (2009)
- ASEAN MRA on Bio-Equivalence Study Report (2017)
- MRA on Inspection and Certification System on Food Hygiene for Prepared Foodstuff (two more AMSs to sign)

Forthcoming MRAs

- ASEAN MRA on Type Approval for Automotive Products (for finalisation in 2019)
- ASEAN MRA on Building and Construction Materials (for finalisation in 2019)

Harmonised Regulatory Regimes and Directives

- Agreement on the ASEAN Harmonised Cosmetic Regulatory Scheme (2003) with ASEAN Cosmetic Directive
- Agreement on the ASEAN Harmonised Electrical and Electronic Equipment Regulatory Regime (2005)
- ASEAN Medical Device Directive (2014)

Agreement on Harmonised Technical Requirements (forthcoming)

- ASEAN Agreement on Regulatory Framework for Traditional Medicines
- ASEAN Agreement on Regulatory Framework for Health Supplements

As the NTM database country reports found, no single authority in AMSs ensures that NTMs are implemented effectively. The absence of a coherent mechanism and institution could create difficulty not only for collecting and classifying data but also for drafting good regulations. The lack of coordination could create inconsistency in regulations issued by government agencies across ministries.

The NTFCs, which were envisaged to coordinate all regulations and policies, are still under development in various AMSs. A related issue is the need to ensure that government bodies consider the views of the private sector and other stakeholders on preparing and implementing regulations or NTMs.

5.2 Non-tariff Measures as Part of National Competitiveness Agendas

Recognising the importance of GRP in coming up with coherent, efficient, and cohesive regulations and measures, individual AMSs have embarked on initiatives to improve their regulatory environments.¹⁴ The initiatives include Malaysia's PEMUDAH Task Force, Thailand's Guillotine Committee, the Philippines' Project Repeal, and Viet Nam's Project 30.

Malaysia's PEMUDAH is a public-private task force established by ministries. It is mandated to reduce bureaucracy in business-government dealings and improve how government regulates the business sector. PEMUDAH is mandated to monitor, review, and recommend changes to the laws, regulations, and administrative procedures to reduce the burden on the private sector. Working with PEMUDAH is the Malaysia Productivity Corporation (MPC), which is identified in the 10th Malaysian Plan to support the work of the private sector and 'unleash its growth potential' (Semman and Majid, *forthcoming*). The MPC is tasked to spearhead the comprehensive review of business regulations, including improvement of procedures to increase the productivity and competitiveness of major economic sectors. Malaysia launched the National Policy on the Development and Implementation of Regulations in 2013 and formalised it in 2014. This was an important

¹⁴ These initiatives aim to reduce regulatory burden in general, of which NTM-related regulations are one component.

step in establishing a whole-of-government commitment to improve regulatory practices, where GRP was embedded in preparing or amending regulations. The policy aims to ensure that regulations are developed in accordance with international best practices in regulatory management.

The MPC and PEMUDAH review and revise regulations and procedures through a large number of public and private sector working groups and task forces. The NPIDR mandates the use of regulatory impact analysis and regulatory impact statements for all new regulations. All regulations are reviewed every 5 years using the ‘reducing unnecessary regulatory burden’ methodology, where reviews are comprehensive, in-depth, and transparent. The regulatory tools to review regulations – business process re-engineering and NTM stocktaking – are not adopted directly by the agencies but are centralised in the MPC and PEMUDAH. Malaysia’s efforts to advance GRP include establishing the United Public Consultation Portal to provide the public easy access to regulatory consultations through a single website.

In 2017, **Thailand** launched the Guillotine Project to fast-track the review of laws and regulations. It is an initiative of the Fast Action Law Reform Committee, established in 2018 by the Prime Minister’s Office. Phase 1 focused on reviewing laws and regulations to reduce or amend some of them to improve Thailand’s World Bank ‘ease of doing business’ ranking. Work permits and visas were reviewed and initial recommendations issued in October 2018. Other areas covered included eliminating the requirement that business organisations have a company seal before investing in Thailand, eliminating the regulatory framework requiring business organisations to get approval from the labour department, and introducing an automated risk-based system to help select companies for a risk audit. Phase 2 focused on reviewing laws and regulations relating to the issuance of 1,500 permits and licenses, to eliminate redundant licences and streamline burdensome, complex procedures for starting new businesses, and to promote efficient business activity and economic development (Srisangnam and Tinkan, *forthcoming*).

The private sector recommended priority issues or areas. The inventory of laws and regulations, including the regulatory guillotine process, where about 1,000 regulations were examined for reform, repeal, or deletion, was undertaken under the First Action Law Reform Committee. The committee proposed enhancing the conduct of regulatory impact analysis to be in line with international standards and practices.

The reform led to Thailand’s rise to 26th out of 190 economies in the 2018 ‘ease of doing business’ ranking, up from 48th in 2017. The World Bank recognised Thailand as one of the top-10 most improved economies in 2018.

Regulatory reforms in the **Philippines** have seen notable progress over the past years. In 2016, the Philippines, through the National Competitiveness Council (NCC), launched an anti-red-tape challenge called Project Repeal, a government-wide initiative to repeal outdated rules and reduce the cost of doing business (Llanto and Ortiz, 2019). The NCC is a public-private sector task force on competitiveness, created under Presidential Executive Order No. 571, which was amended by Executive Order No. 44 in June 2011, giving the task force its present name and expanding its membership.

On the 1st Repeal Day in June 2016, only 8 government agencies participated but, in 2017, a total of 86 government line and attached agencies joined. The NCC reported that 3,777 rules and issuances were repealed on the 1st Repeal Day, 1,098 on the 2nd, and 976 on the 3rd.

The government's commitment to continue improving the regulatory environment was manifested in Republic Act No. 11032 or the Ease of Doing Business and Efficient Government Service Delivery Act of 2018, which amended Republic Act No. 9485 or the Anti-Red Tape Act of 2007. The law aims to simplify and expedite the processing and delivery of government services – related to business or not – in all government offices, and to promote transparency. The law established the Anti-Red Tape Authority, 'the primary institution that will head the implementation of the national policy on anti-red tape and EODB [ease of doing business] as well as monitor and evaluate the compliance of government agencies and offices to such policies' (Llanto, 2019).

Viet Nam's Project 30 is a key regulatory reform to simplify at least 30% of administrative procedures, amongst others. It seeks to reduce administrative costs by at least 30% and close implementation gaps between the domestic regulatory system and international commitments, particularly the WTO. The reform plans to establish the first unified national database for administrative procedures and help improve the country's competitiveness by encouraging investment and increasing productivity.

The results of Project 30 were remarkable, including setting up an electronic database containing more than 5,000 administrative procedures accessible to the public; reducing administrative burdens on businesses and citizens, especially regarding invoicing (saving US\$20 million a year), tax declarations and collections (US\$50 million), and customs procedures (US\$30 million) (Vo, 2019; and encouraging investment and boosting investor confidence by simplifying administrative procedures.

6. Conclusion and Policy Recommendations

We present the key findings drawn from the updated ERIA–UNCTAD NTMs in ASEAN database, and provide a snapshot of ASEAN’s on-going initiatives to deal with NTMs at the regional and country levels.

We observe an increase in NTMs across all 10 countries. Within 3 years, the total number of NTMs has risen by approximately 15%. Technical measures account for the lion’s share of NTMs, which is in line with the pattern observed in developed countries. SPS measures are highly targeted at agricultural and food products, whilst TBT are often used for non-food manufacturing products. Export-related measures and quantity and price controls also contribute to a non-trivial fraction of NTMs.

Given the complexity of NTMs, their increasing use should be interpreted with caveats. The increase in NTMs reflects the dynamics of regulatory reform in AMSs. In certain circumstances, however, NTMs have also served as disguised barriers to international trade and become a convenient tool to provide undue protection to certain products or industries.

More important, regardless of their objectives, NTMs can contribute greatly to increasing trade costs, reducing an economy’s competitiveness. Addressing NTMs, especially in the context of declining tariffs, should, therefore, be a priority in national competitiveness agendas.

ASEAN, through various frameworks, principles, and agreements, has taken steps to address and manage NTMs. Although initiatives are region-wide, harmonisation and enforcement of NTMs require strong institutional commitment at the national level. Whilst significant progress is not yet observed, effective implementation of existing initiatives could produce promising results.

Several areas are identified to help address or manage NTMs.

First, **enhance the capacity of issuing and enforcement agencies.**¹⁵ For issuing agencies, technical assistance includes collecting NTMs, classifying them using an internationally comparable classification, validating NTM data, and uploading new NTMs to a public database.¹⁶ The technical knowledge of enforcement agencies, particularly those in charge

¹⁵ The two groups may overlap.

¹⁶ ERIA has shared the 2019 updated NTM data from the ERIA–UNCTAD database, which AMSs will refer to when populating their NTRs and linking them to the ATR. The capacity building provided by ERIA and UNCTAD will help ensure the sustainability of the NTM section of NTRs and enhance transparency.

of technical inspection and accreditation, will be improved by good education and training. The development of testing and accreditation facilities would contribute significantly to enhancing the overall efficiency of NTM management, given the prevalence of conformity assessment for both SPS and TBT purposes.

Second, **establish an institutional mechanism similar to NTFCs** to oversee and manage the implementation of NTMs to ensure consistency of regulations and avoid overlapping amongst enforcement authorities. A dedicated national institution to validate regulatory impact analyses or regulatory impact statements could accelerate public access to them and ensure they are updated on NTRs. The institution, supported by a competent workforce, could also carry out NTM regulatory review and stocktaking.

Third, **strengthen engagement with the private sector and research institutions** on possible approaches to managing NTMs. NTMs are neutral and, more often than not, eliminating them is not an option. A pragmatic approach should consider the costs and effectiveness of NTMs from the perspective of governments and producers, with evidence-based support from academia.

Fourth, **apply GRP core principles to ensure good regulatory management**. Some AMSs have made good progress in institutionalising GRP principles in their regulatory management system by adopting regulatory stocktake tools such as regulatory impact analysis or regulatory impact statement before new laws or regulations are adopted or implemented.

References

ASEAN Secretariat (2018), *ASEAN Statistical Yearbook 2018*. Jakarta: ASEAN Secretariat. <https://asean.org/storage/2018/12/asyb-2018.pdf> (accessed 19 April 2019).

ASEAN Secretariat (2018), *ASEAN Community Progress Monitoring System 2017 – Tariff Liberalisation*. Jakarta: ASEAN Secretariat. <https://www.aseanstats.org/wp-content/uploads/2018/10/Tariff-Liberalisation.pdf> (accessed 18 April 2019).

ASEAN Secretariat (2017), 'AEC 2025 Trade Facilitation Strategic Action Plan'. <https://asean.org/storage/2012/05/AEC-2025-Trade-Facilitation-SAP-FINAL-rev.pdf>

ASEAN Secretariat (2012), 'Non-Tariff Measures Database'. https://asean.org/?static_post=non-tariff-measures-database (accessed 27 April 2019).

- ASEAN Secretariat (2010), 'ASEAN Trade in Goods Agreement'. <http://agreement.asean.org/media/download/20140119034633.pdf> (accessed 12 March 2019).
- ASEAN Secretariat (2004), 'ASEAN Framework Agreement for the Integration of Priority Sectors Vientiane, 29th November 2004'. https://asean.org/?static_post=asean-framework-agreement-for-the-integration-of-priority-sectors-vientiane-29th-november-2004
- Beestermöller, M., A. C. Disdier, and L. Fontagné (2018), 'Impact of European Food Safety Border Inspections on Agri-food Exports: Evidence from Chinese firms', *China Economic Review*, 48, pp.66–82.
- Chen, M. X. and A. Mattoo (2008), 'Regionalism in Standards: Good or Bad for Trade?' *Canadian Journal of Economics/Revue canadienne d'économique*, 41(3), pp.838–63.
- Disdier, A-C., L. Fontagné, and O. Cadot (2015), 'North-South Standards Harmonization and International Trade', *World Bank Economic Review*, 29(2015), pp.327–52.
- Fontagné, L. and G. Orefice (2018), 'Let's try next door: Technical Barriers to Trade and multi-destination firms', *European Economic Review*, 101, pp.643–63.
- Fugazza, M., M. Olarreaga, and C. Ugarte (2018), 'On the Heterogeneous Effects of Market Access Barriers: Evidence from Small and Large Peruvian exporters', *CEPR Discussion Paper*, No. DP12876, London: Center for Economic Policy Research.
- Hoekman, B. and A. Nicita (2011), 'Trade Policy, Trade Costs and Developing Country Trade', *World Development*, 39(12), pp 2069–79.
- Ing, L.Y, S. Cordoba, and O. Cadot (eds.) (2015), *Non-tariff Measures in ASEAN*. Jakarta: Economic Research Institute for ASEAN and East Asia. Geneva: United Nations Conference on Trade and Development.
- International Trade Center (2015), 'The Invisible Barriers to Trade – How Businesses Experience Non-tariff Measures'. <http://www.intracen.org/uploadedFiles/intracenorg/invisiblebarriers.pdf> (accessed 26 April 2019).
- Kee, H. L., A. Nicita, and M. Ollarreaga (2009), 'Estimating Trade Restrictiveness Indices', *The Economic Journal*, 119, pp.172–99.

- Llanto, G.M. and M.K.P. Ortiz (2019), 'Regulatory Management System Baseline Survey Results and Analysis: Philippines' (unpublished).
- Melo, O., A. Engler, L. Nahuehual, G. Cofre, and J. Barrena (2014), 'Do Sanitary, Phytosanitary, and Quality-related Standards Affect International Trade? Evidence from Chilean fruit exports', *World Development*, 54, pp.350–59.
- Moenius, J. (2004), 'Information Versus Product Adaptation: The Role of Standards in Trade'. SSRN 608022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=608022 (accessed 25 January 2019).
- Seman, A.L. and Y. Majid (*forthcoming*), Towards Institutionalization of Good Regulatory Practice (GRP) and Requisite Regulatory Management System (RMS) in ASEAN: RMS Baseline Survey Results and Analysis. Unpublished.
- Srisangnam, P. and P. Tinkan (*forthcoming*), Regulatory Management System in Thailand and the Case Study of 2017–2019. Unpublished.
- United Nations Conference on Trade and Development (UNCTAD) (2019), *International Classification of Non-tariff Measures*. Geneva: United Nations. https://unctad.org/meetings/en/SessionalDocuments/ditc_tab_NTM_Week_INTERIM_2019_en.pdf (accessed 2 May 2019).
- United Nations Conference on Trade and Development (UNCTAD) (2013), *Non-tariff Measures to Trade: Economic and Policy Issues for Developing Countries*. Geneva: United Nations.
- United Nations (2019), 'International Trade Statistics Database (UN Comtrade)'. <https://comtrade.un.org/> (accessed 27 February 2019).
- Vo, T.T. (2019), 'Making Regulations Right and Effective: Viet Nam's Experience and Lessons'. In Intal, P. and M. Pangestu, *Integrated and Connected Seamless ASEAN Economic Community*, Jakarta: ERIA. Pp.255–68. http://www.eria.org/uploads/media/17.AV2040_VOL4_GRP_VietNam.pdf
- World Customs Organisation (2017), *The Harmonized Commodity Description and Coding System*. <https://unstats.un.org/unsd/tradekb/Knowledgebase/50018/Harmonized-Commodity-Description-and-Coding-Systems-HS> (accessed 18 January 2019).

Appendix : Methodology and Variable Definition

Non-tariff Measure Data

Non-tariff measure (NTM) data were collected in all 10 ASEAN countries at the reporter-year-partner-product-NTM level. The data reflect all trade regulations that were in force up to 30 March 2018, providing a snapshot of each country. Data include bilateral NTMs, recording measures applied to the world and bilaterally to one or more countries. Products are defined for all ASEAN countries using the 8-digit ASEAN Harmonized Tariff Nomenclature (AHTN) 2017. Conversely, NTMs are defined in the 3-digit Multi-Agency Support Team (MAST) Classification M4 (UNCTAD, 2019).

Tariff Data

Tariffs – effectively applied (AHS) and most favoured nation (MFN) – come from World Integrated Trade Services (WITS) and reflect unweighted country averages (across imported products defined at the Harmonised System [HS] 6-digit product level). Tariff data from 2017 are extrapolated for 2018.

Methodology

The United Nations Conference on Trade and Development (UNCTAD) processed the raw NTM data as follows to ensure cross-country consistency:

- (1) Products are defined at the 6-digit product level of HS 2017, the most disaggregated product definition with internationally comparable trade data.
- (2) Horizontal NTMs – measures that apply to all products alike in a country – are dropped. Specifically, UNCTAD defines horizontal NTMs as a single measure affecting at least 95% of products in a country. An example would be a generic import licence for any imported product.
- (3) Partial NTMs – measures that cover an HS 6-digit product only partially in a country – are dropped. Specifically, UNCTAD defines partial NTMs as measures covering only some of the national tariff lines at 8 digits per HS 6-digit product under consideration. This implies that measures with partial coverage at the AHTN 8-digit level are also dropped. Products dropped due to partial coverage are those affected partially only for a specific reporter-partner-NTM code.
- (4) NTMs for products beyond HS 6-digit 980000 are dropped because HS chapters 98 and 99 are not harmonised but reserved for national use and, therefore, are not comparable between countries.

To compute the coverage ratio, UNCTAD relies on the South–South Trade Database (SSTdb), developed in-house, for export and import values. SSTdb provides estimates of bilateral trade flows at the HS 6-digit level for all countries and periods where actual trade flows are missing (see Annex in UNCTAD [2009b]). Drawing from UN Comtrade, UNCTAD Globstat, and the World Trade Organization’s Integrated Data Base, SSTdb uses mirroring, replication, averaging, interpolation, and extrapolation of trade flows. Export and import values from SSTdb are then averaged over the last 3 available years to adjust for year-specific fluctuations.

Variable Definition

- (1) NTM count statistics. Results in Tables 1, 2, and 3 report NTM raw data, reflecting (a) NTMs at the AHTN 8-digit product level, (b) horizontal NTMs (measures that apply to all products alike in a country), and (c) partial coverage at the AHTN 8-digit product level.

The number of NTMs reflects differences in consumer protection and the structure of regulations across countries, and not trade restrictions per se. Regulations often reflect a basic and legitimate public demand for consumer protection that should be taken as given. Low NTM count statistics could reflect national gaps in countries’ consumer and environmental protection and thus potential under-regulation. The way countries issue regulation has a bearing on how many NTMs we count. For example, a country that promulgates product- or partner-specific regulations will see more NTMs than a country that uses a single law to regulate all imported products. These examples show that NTM counts should be taken with a grain of salt; they reflect differences in consumer protection and regulation structure across countries.

$$\text{Frequency index: } F_i = \frac{\sum_{j=1}^J \sum_{p=1}^{HS} NTM_{ijp} D_{ijp}}{\sum_{j=1}^J \sum_{p=1}^{HS} D_{ijp}} \times 100$$

where subscript p denotes product and i denotes the country imposing the NTM. NTM_{ijp} is a dummy variable denoting the presence of an (import) NTM in country i and product p of the selected HS aggregation level (typically HS 6) and applied to imports from country j . D_{ijp} is a dummy variable taking the value 1 when country i imports any quantity of product p from country j , and zero otherwise. Thus, the denominator measures the number of imported products.

The frequency index sums over each partner j to account for the fact that some NTMs are bilateral, i.e., applied only to some countries. When calculating the frequency index for export measures (associated with MAST NTM chapter P), D_{ijp} takes exports instead of imports, and NTM_{ijp} denotes the presence of an export NTM in country i to country j .

$$(2) \text{ Coverage ratio: } C_i = \frac{\sum_{j=1}^J \sum_{p=1}^{HS} NTM_{ijp} V_{ijp}}{\sum_{j=1}^J \sum_{p=1}^{HS} V_{ijp}} \times 100$$

where subscript p denotes product and i denotes country imposing the NTM. As in the frequency index, NTM_{ijp} is a dummy variable denoting the presence of an NTM in country i and product p of the selected HS aggregation level (typically HS 6) and applied to imports from country j . Thus, the denominator measures the value of imported products. V_{ijp} represents the import value of country i in product p used for import measures. When calculating the coverage ratio for export measures, V_{ijp} takes export values instead of import values.

$$(3) \text{ Prevalence score: } P_i = \frac{\sum_{j=1}^J \sum_{p=1}^{HS} NTM_{ijp} \#NTM_{ijp} D_{ijp}}{\sum_{j=1}^J \sum_{p=1}^P D_{ijp}} \times 100$$

where subscript p denotes product and i denotes country imposing the NTM. $\#NTM_{ijp}$ represents the number of distinct NTMs (at 3 digits) country i has in product p of the selected HS aggregation level (typically HS 6) and applied to imports from country j . As in the frequency index, NTM_{ijp} is a dummy variable denoting the presence of an NTM in country i and product p of the selected HS aggregation level (typically HS 6) and D_{ijp} is a dummy variable taking the value 1 when country i imports any quantity of product p from country j , and zero otherwise. Thus, the denominator measures the number of imported products. When calculating the prevalence score for export measures, D_{ijp} takes exports instead of imports.

NTM count statistics and the three NTM indicators computed over different aggregations represent the unweighted average for that aggregation.