

# Non-tariff measures

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Impacts, trends and effects  
on exports from New  
Zealand

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## Key points

- Non-tariff measures (NTMs) are often beneficial, protecting consumers from risks and expanding trade by giving consumers confidence about product quality.
- There are more than 2.5 million product NTMs affecting more than 78% of world trade. The vast majority of these are, ostensibly, risk management measures.
- Exports from New Zealand face an above-average number of NTMs, largely because primary sector products face high numbers of NTMs:
  - 83% of exports from New Zealand face NTMs
  - products exported from New Zealand face an average of 9 NTMs.
- NTMs add to producers' costs, raise consumers' prices, and can be used for protectionist purposes:
  - globally, NTM compliance costs are 12% of the value of world trade, amounting to trillions of dollars of costs annually, excluding benefits from NTMs
  - in most countries, NTMs raise consumers' prices by more than tariffs do
  - NTM compliance costs are over 20% of the value of New Zealand exports, and more than \$12 billion annually, although a substantial amount of this cost is from risk management measures that can expand trade.
- Compliance costs are highly concentrated, with moderate costs in most cases and very high costs for a minority of products and destinations.
- Trends in the use of NTMs over the past decade show:
  - moderate and unremarkable growth in the use of conventional technical risk management measures
  - a concerning and rapid rise in the use of subsidies, export measures, and contingent trade protection.
- New Zealand exporters have been insulated from the worst of recent increases in restrictive and distortionary NTMs, because these measures have mainly been targeted at manufactured products that make up a small share of exports from New Zealand.
- This high-level analysis of NTMs is for context only. Detailed product- and market-specific analyses are needed to properly understand the effects of NTMs and identify and prioritise actions to reduce costs from NTMs.



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# 1. Context and scope

This report provides a high-level summary of the prevalence of non-tariff measures (NTMs) and their impacts on New Zealand exporters.<sup>1</sup>

Non-tariff measures are policy measures, other than customs tariffs, that can have an economic effect on international trade in goods, changing quantities traded, or prices, or both.<sup>2</sup>

As a piece of high-level analysis, this report makes no judgement as to the net costs of NTMs or their legitimacy from a trade law perspective. Although, we do comment on trends that are concerning in our opinion.

## 1.1. NTMs are an increasing focus of trade policy

NTMs have become an increasingly prominent part of trade policy over the past two decades as import tariffs have been reduced due to a proliferation of FTAs and a broadening of membership of the World Trade Organisation (WTO).

In the past 5 years there has also been a significant increase in the use of protectionist NTMs. This was due to a period of tit-for-tat protectionist and reactive trade policies between large economies such as China and the United States of America (USA).

There is some evidence of a long-run trend increase in NTMs. Although, apparent increases in the use of NTMs also reflects increased attention to identifying and cataloguing NTMs.

## 1.2. NTMs have both positive and negative effects

NTMs can have positive or negative effects depending on how they are implemented and their intent. This is summarised in Figure 1 below.

On the positive side of the ledger, NTMs are an important part of risk management. The vast majority of NTMs are intended to manage risk. For example:

- product standards are used to address consumers' concerns about food safety
- prohibitions are used to safeguard human, animal and plant health (i.e. biosecurity risks)
- technical standards are used to ensure products are compatible with domestic operating systems, such as electricity networks.

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<sup>1</sup>This report is an update and extension of a previous New Zealand analysis of NTMs in the Asia-Pacific region by Ballingall and Pambudi (Ballingall, J. and D. Pambudi (2016) "Quantifying the costs of non-tariff measures in the Asia-Pacific region", NZIER public discussion paper, Working paper 2016/4, November 2016, NZ Institute of Economic Research Available at [nzier.org.nz](http://nzier.org.nz).)

<sup>2</sup> Non-tariff measures do not include de facto procedures and practices that impact on trade costs, such as slow processing of administrative approvals or port capacity, though these factors can have a material effect on trade costs.

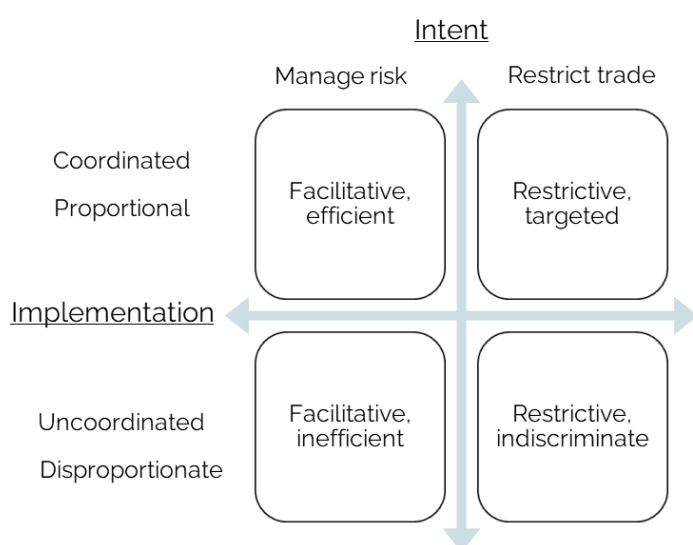


Effective risk management confers benefits to consumers. It can also benefit producers by avoiding a 'race to the bottom' in terms of product quality or standards.

Research shows that some risk management measures can boost trade, by reducing uncertainty about product quality and improving consumer confidence. This is mainly for product packaging and labelling requirements.<sup>3</sup>

On the negative side of the ledger, NTMs almost always impose compliance costs on firms and increase prices faced by consumers. And even measures that are imposed for sound risk management reasons can be implemented inefficiently – imposing unnecessarily high transaction costs.

FIGURE 1: NTM SPECTRUM



Inefficiently high transaction costs arise when, for example:

- measures are not proportional to the risk being managed, i.e. more restrictive than required to meet a risk management objective
- policies are uncoordinated internationally where different countries adopt different risk management measures, compounding compliance costs
- policies are uncoordinated or incoherent domestically, and imports are treated differently to domestic products or like-products for no logical reason.

A minority of NTMs exist to restrict or distort trade. These include trade prohibitions, subsidies, taxes, or charges on traded goods only, or other measures intended to favour domestic producers.

Some trade restrictive measures are considered legitimate if properly coordinated and targeted. This includes measures taken to safeguard domestic industry from a sudden surge

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<sup>3</sup> Gourdon, J., Stone, S., Tongeren, F. van, 2020. Non-tariff measures in agriculture (Working Paper No. 147), OECD Food, Agriculture and Fisheries Papers. OECD, Paris. <https://doi.org/10.1787/81933f03-en>



in imports or imports being sold below cost, known as dumping. The economic justification for such protective trade policies is tenuous, but they are considered a bona fide policy measure in most if not all countries if they follow agreed international rules.

### 1.3. High level measures of NTMs

The scope of this report is high-level measures of the global prevalence and impacts of NTMs and relevance of those NTMs to NZ exporters.

Three high-level measures are considered:

- the stock of NTMs affecting trade today (section 2)
- empirical estimates of the impacts of NTMs on trade costs and prices (section 3)
- recent trends in the use of NTMs (section 4)

These sorts of measures provide context for more detailed analysis of NTMs – analysis which is outside the scope of this summary report.

NTMs span a very wide range of often very detailed rules and regulations that differ between countries and by products. In this regard, more detailed analysis is needed to ultimately understand the effects of NTMs and whether specific NTMs are, on balance, costly or beneficial to consumers or producers.

In the next section, we describe the breadth of NTMs, and their standardised classifications and descriptions.



## 2. Stock of NTMs

Assessing the stock of NTMs – a snapshot of NTMs at a point in time – provides an indication of the overall regulatory intensity of NTMs in global trade, by sector, and by origin or destination of trade.

### 2.1. There are more than 2.5 million product NTMs in the world

A common way of estimating the prevalence of NTMs is to count the number of measures in place. But counts of numbers of rules and regulations provide a limited picture of the prevalence of NTMs because some measures have wide application and others have very narrow application.

That is, some NTMs affect only a few products or a few countries or a limited amount of trade. Others affect almost all products and apply to all exporters and to the most highly traded products.

Our approach to counting NTMs better captures the scope of NTMs affecting trade than simple counts.<sup>4</sup> It distinguishes unique applications of an NTM by product and importing country.<sup>5</sup> In this report we define a “product” as a 6-digit item in the Harmonised Commodity Description and Coding System (HS).<sup>6</sup>

Using this approach, we estimate more than 2.5 million product NTMs are in operation in the world (see Table 1). This is the number of NTMs multiplied by the number of products affected by the NTM.<sup>7</sup>

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<sup>4</sup> Other measures that are used to analyse the complexity of NTMs understate the complexity of NTMs and their prevalence in world trade.

<sup>5</sup> For example, if the USA applies a phytosanitary (SPS) standard on imports of apples from any WTO member, that will count as one NTM. If that SPS standard also applies to other products, each additional application to a product will count as a unique NTM. If, in addition, the USA applies a similar but slightly different SPS standard to apples imported from New Zealand, then that is counted as another unique NTM. To place higher weight on NTMs affecting trade from many countries, against bilateral or regional measures, the counts of NTMs are weighted by the share of a product's imports that are affected by the NTM. So, if New Zealand exports of apples to the United States make up 10% of USA apple imports from the world, then a bilateral NTM imposed on imports of apples from New Zealand would be given a value of 0.10 in our trade-weighted count of NTMs.

<sup>6</sup> There are 5,200 HS 6-digit products. If we used a more detailed product classification, such as 8- or 10-digit, the number of product NTMs would, by definition, increase significantly. We use HS 6-digit as this provides a standard and consistent basis for inter-country comparison because product classifications are harmonised across countries. The number of 8- or 10-digit products, and their codes, differs significantly between countries.

<sup>7</sup> This measure counts the number of bilateral NTMs by taking the trade-weighted sum of bilateral NTMs, e.g. if half of Australian apple imports come from China and half from New Zealand, and if apple imports from China face 10 bilateral NTMs and New Zealand imports 5 NTMs, then the bilateral count of NTMs on imports of apples into Australia will be counted as  $7.5 = 10 \times 0.5 + 5 \times 0.5$ . Multilateral/most favoured nation (MFN) NTMs are counted without any weighting. Thus if Australia applied 10 MFN NTMs on apples, the total NTMs on apple imports would be 17.5.



Our measure of the prevalence of NTMs is an underestimate. The precise number of NTMs is not known because many NTMs are not counted.

However, our estimate of the number of product NTMs in operation in the world is much larger than other measures due to different ways of counting an NTM. For example, the United Nations (UN) (2018) estimated that there are approximately 50,000 NTMs based on a catalogue of unique trade policies or regulations affecting trade in 109 countries.<sup>8</sup> Unlike our estimate, the UN measure of the prevalence of NTMs does not account for the breadth of products or trade affected by NTMs.

## 2.2. More than 78% of world trade is subject to at least one NTM

The most prevalent NTMs are technical barriers to trade (TBT). TBT measures also affect the largest amount of trade. The second most prevalent NTMs, globally, are sanitary and phytosanitary (SPS) measures.

TABLE 1: GLOBAL PREVALENCE OF NTMS AFFECTING TRADE

Count is the sum of the trade-weighted count of NTMs by importing country and product.

NTM category	Count	Global		Count	New Zealand	
		Affected trade (NZD \$b)	% of trade		Affected trade (NZD \$b)	% of trade
SPS	825,438	4,387	16%	788,540	38	70%
TBT	871,669	19,030	70%	857,563	43	78%
Border	74,430	3,887	14%	66,965	16	29%
Contingent protection	14,162	1,692	6%	7,181	4	8%
Quotas	242,916	10,679	39%	225,612	29	53%
Taxes and charges	113,403	4,460	16%	112,481	28	52%
Finance	12,993	955	4%	12,960	1	1%
Competition measures	7,568	1,010	4%	7,568	1	2%
Investment measures	3,038	148	1%	3,038	0.1	0%
Export measures	411,457	9,873	36%	355,890	32.0	58%
Total	2,577,074	21,315	78%	2,437,798	46	83%

TBT, SPS and border measures are referred to as “technical measures.” They are typically risk management measures related to regulation of product characteristics.<sup>9</sup>

For example, SPS measures are used to manage food safety and mitigate spread of disease and pests. They mainly affect trade in agricultural and food products and so affect ‘only’ 16%

<sup>8</sup> United Nations Conference on Trade and Development (UNCTAD), World Bank, 2018. The Unseen Impact of Non-Tariff Measures: Insights from a new database. United Nations and World Bank, Geneva.

<sup>9</sup> There is some ambiguity about this, in the sense that border procedures are often requirements with administrative, fiscal, or commercial purposes. However, the UN classification for NTMs lists border measures as technical measures.



(NZD 4,387 billion) of world trade. There are many SPS measures in operation and a single product will typically attract several NTMs.<sup>10</sup>

Table 1 suggests around 20% of world trade is *not* affected by NTMs. Yet the true figure is likely to be very close to 0% of world trade is not affected by NTMs, because:

1. Our stocktake in Table 1 shows only a subset of the range of measures classified as NTMs.<sup>11</sup> Table 2 in the appendix provides a complete list of types of NTMs and the data sources used in this analysis.
2. Other policies and procedures that affect trade are not captured by our source of NTMs. Whether a policy or procedure is counted as an NTM is often arbitrary.

On the second point, all commerce is subject to rules of trade and there are no products not subject to such rules – whether they are simple customs formalities or complex product chemical composition or testing requirements.

For example, rules of origin are measures that affect trade that are not tariffs. All trade is affected by rules of origin even if only to a very minimal degree. However, rules of origin are very often excluded from NTM analysis and are not catalogued in widely-used NTM databases. Customs procedures, such as customs declarations, are universal, and are also not typically counted as NTMs, presumably because they are considered indispensable to the regulation of trade or accounting for trade flows.

## 2.3. More than 83% of NZ exports are subject to at least one NTM

New Zealand exports face more NTMs than the world average. This reflects a combination of products that face an above-average number of NTMs and destination markets with above-average numbers of NTMs.

The influence of product composition can be seen very clearly in the significant difference in Table 1 between the share of exports from New Zealand affected by SPS NTMs (70%) compared with the global average (16%).

## 2.4. NTMs by product

Primary sector and processed food products have the highest numbers of NTMs globally (see Figure 2, where products are grouped by HS section). Animal products – meat, fish, dairy, and live animals – are subject to more than 20 NTMs per product on average.

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<sup>10</sup> SPS measures do also affect non-agricultural or food products, such as vehicle import fumigation requirements.

<sup>11</sup> The full classification for NTMs is: UNCTAD, 2019. International Classification of Non-Tariff Measures 2019. UN. <https://doi.org/10.18356/33bf0bc6-en>



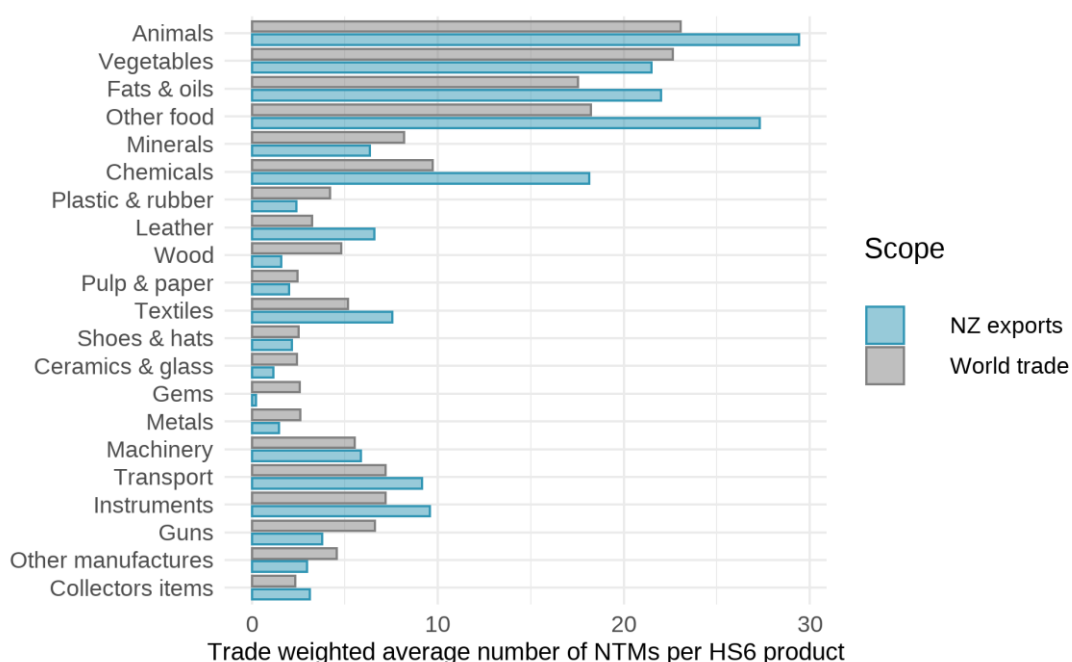
Vegetables, fats and oils, and other food products – including processed meat and vegetables and beverages, including alcoholic beverages – face high numbers of NTMs compared to other product groups, with more than 15 NTMs per product on average.

The prevalence of NTMs on New Zealand exports by product group is like that of world trade. Figure 2 plots the average NTMs by broad product for world trade (grey bars) and for products and countries in New Zealand's export trade profile (blue-green bars), giving higher weight to countries that New Zealand exports to.

Countries apply NTMs to their imports and to their exports (e.g. export bans or quotas). For clarity, the data presented in this report includes only import NTMs unless otherwise stated.<sup>12</sup>

FIGURE 2: PREVALENCE OF NTMS BY BROAD PRODUCT GROUP

Trade-weighted average number of import NTMs by HS section



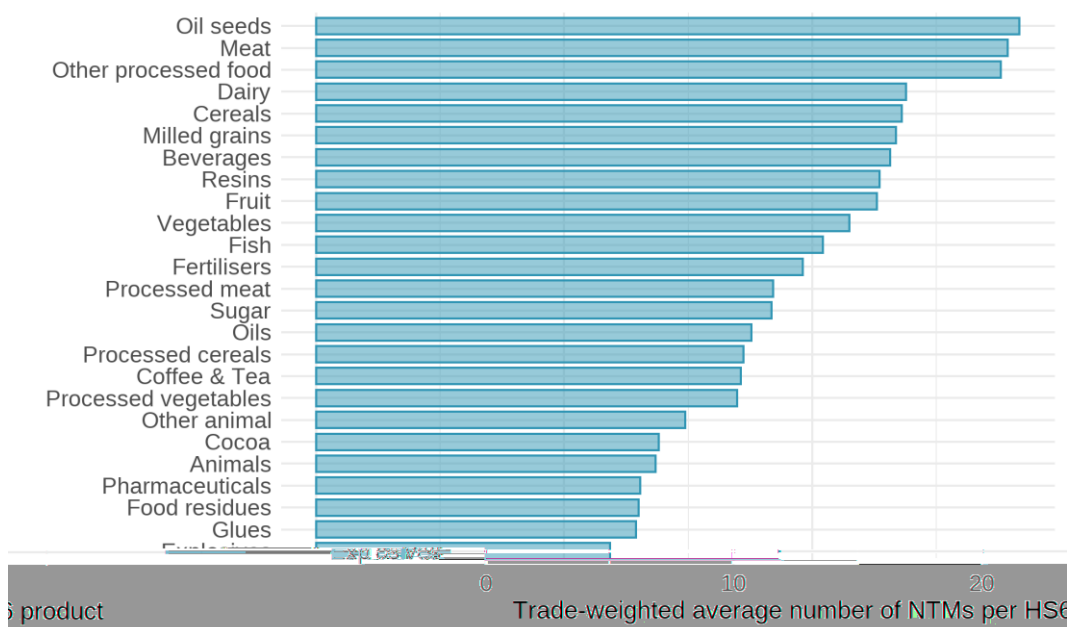
There is substantial variation in the frequency or intensity of NTMs within broad product groups. This can be seen in Figure 3, which charts trade-weighted averages of NTMs at the level of HS chapters (2-digit or HS2), for the top 25 HS chapters ranked by the average number NTMs per product.

Within the broad product grouping (HS section) of animal products, we can see that meat products (HS2) face noticeably higher numbers of NTMs (28 per product) on average than dairy products (24 per product) and fish products (20 per product).

<sup>12</sup> This report adopts, by default, an exporter's perspective of NTM impacts. From that perspective, export NTMs are harder to summarise or compare with import NTMs as there is no obvious basis for weighting counts of NTMs, at least not without giving substantially and inappropriately higher weights to export NTMs over import NTMs.



FIGURE 3: PREVALENCE OF NTMS ON WORLD TRADE BY HS CHAPTER  
Top 25 HS 2-digit chapters ranked by weighted average number of NTMs on global trade



## 2.5. Product NTMs by export group: New Zealand

New Zealand's export trade profile also shows significant variation in the prevalence of NTMs by HS chapter (see Figure 4).

Exports of other food products from New Zealand face a weighted average of 27 NTMs per product.

Within that broad grouping, weighted-average numbers of NTMs are highest for the processed meat chapter (HS2) with 39 NTMs per product on average.

That compares to a global average of 18 NTMs per product for processed meat products and a global ranking of 13th in terms of average number of NTMs by HS chapter (see Figure 3).

This difference in average numbers of NTMs between world exports and New Zealand exports reflects a combination of higher numbers of NTMs on the types of processed meat products exported from New Zealand, relative to the global average, and the countries that New Zealand exports to.

New Zealand exports tend to face higher numbers of NTMs relative to the world average in those products where exports from New Zealand exhibit comparative advantage (higher shares of exports than the world average). Although, there are exceptions to this, such as the average number of NTMs for fish exports from New Zealand; a group of products in which New Zealand exports exhibit comparative advantage.

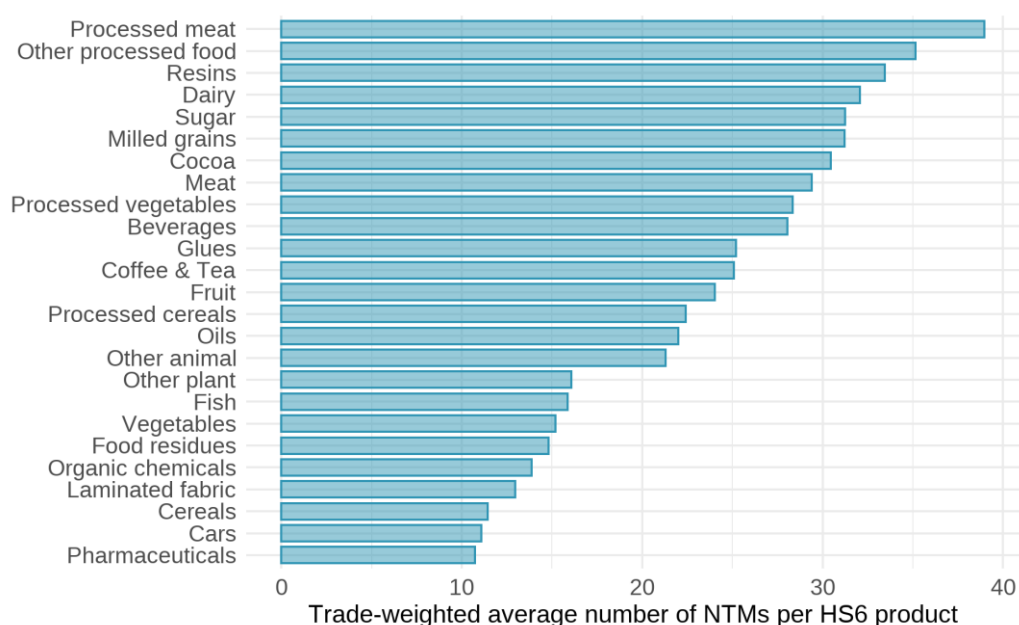


Trade in fish (HS Chapter 3) faces a trade weighted average of 20 NTMs per product globally, while exports of fish from New Zealand face a trade-weighted average of 16 NTMs per product.

Although, an average of 16 NTMs per product for fish is high relative to other HS chapters, with fish ranking in the top 25 chapters in terms of the average number of NTMs (18<sup>th</sup> of 96 HS chapters, see Figure 4).

FIGURE 4: PREVALENCE OF NTMS ON NZ TRADE BY HS CHAPTER

Top 25 HS 2-digit chapters ranked by weighted average number of NTMs on NZ trade



## 2.6. Use of NTMs varies widely across countries

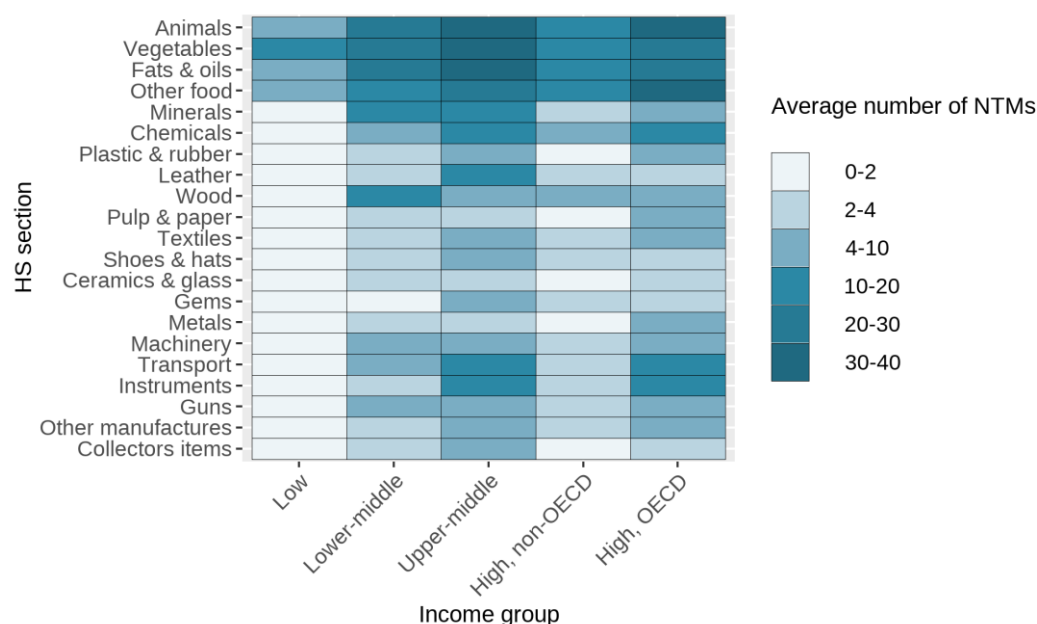
In general, developed countries apply more NTMs than developing and least developed countries (see Figure 5); however, there are important exceptions to that rule of thumb.

Several developing countries have high numbers of product NTMs. The highest number of NTMs by country are in Brazil and Argentina, and seven out of ten of the top ten highest users of NTMs are in the Latin America and Caribbean area.

The USA is also in the top ten users of NTMs. Thus, as shown in Figure 6, the Americas are the region with the highest frequency of NTMs.

High rates of NTM use in some developing countries is offset by numerous developing countries that are observed implementing very few NTMs, thus leading to the general observation that developed countries implement more NTMs.

FIGURE 5: GLOBAL AVERAGE NTMS BY INCOME<sup>13</sup> AND BROAD PRODUCT GROUP  
Average number of NTMs per product, trade-weighted



The lowest rate of use of NTMs is in countries in Africa. This is based on a trade-weighted average of four NTMs per product across all countries in Africa. That is followed by Europe<sup>14</sup>, with an average of six NTMs, Asia with an average of eight NTMs, Oceania with an average of ten NTMs, and the Americas with an average of 15 NTMs.

Countries with more NTMs do not equal countries with more restrictive NTMs. More NTMs may mean more carefully differentiated or targeted NTMs. Countries with fewer NTMs may well have more stringent NTMs that are applied without exception across all countries.<sup>15</sup>

More NTMs may reflect, for example:

- greater transparency around the application of NTMs, or
- more vigilant trading partners taking steps to ensure that the NTMs their exporters face are captured in international NTM databases, or
- greater risks to be managed through NTMs.

<sup>13</sup> Countries grouped using World Bank income groupings.

<sup>14</sup> For Europe, these numbers exclude NTMs applied by EU members that are not reported as EU member measures but rather unilateral measures. This exclusion is applied to avoid unduly dragging down averages in Europe because many EU members have very few unilateral NTMs.

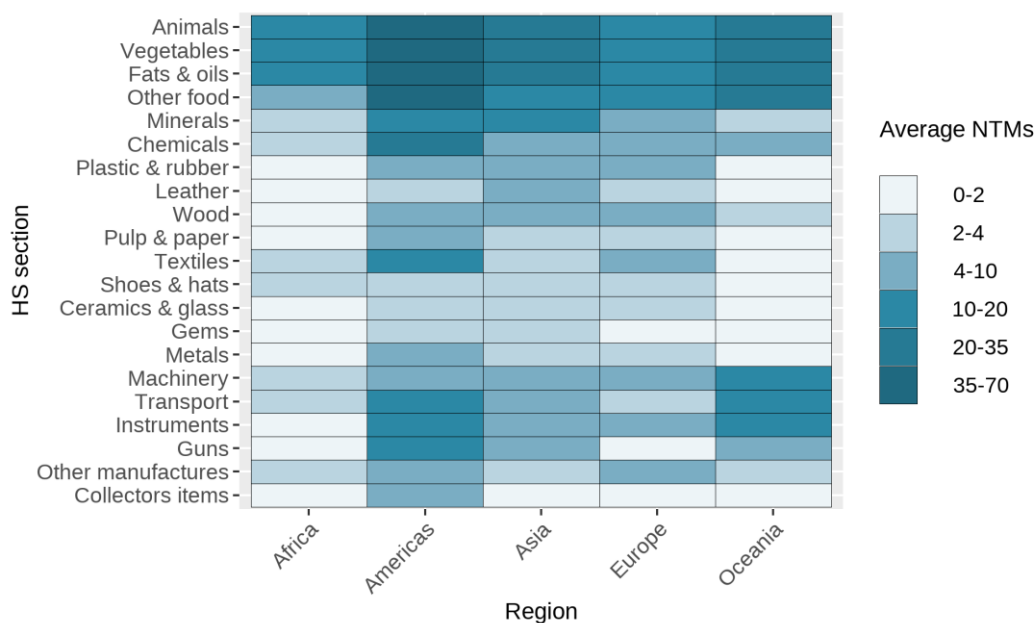
<sup>15</sup> In addition, countries with fewer NTMs may simply have fewer formal or codified NTMs, while informal rules and procedures may be having significant unobserved impacts on trade. Those sorts of NTMs are beyond the scope of this report.



The only way to tell if high rates of use of NTMs means restrictive or inefficient use of NTMs is to investigate specific markets or NTMs on specific goods.

While the intensity or frequency of use of NTMs varies substantially across countries, patterns of application across products are broadly similar, with animal and food products facing the highest number of NTMs, as shown in Figure 6.

FIGURE 6: GLOBAL AVERAGE NTMS APPLIED BY REGION AND BROAD PRODUCT GROUP  
Average number of NTMs per product, trade-weighted based on global trade flows

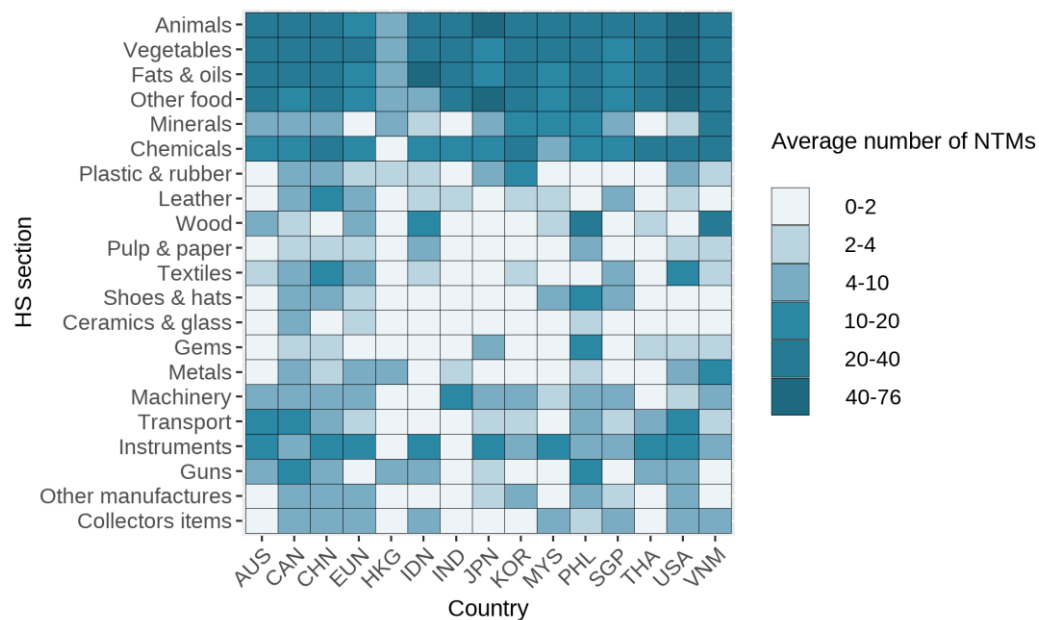


For the sorts of products New Zealand firms export, the USA is the trading partner with the highest number of NTMs per product. Animal and food product exports to the USA average more than 40 NTMs per product (see Figure 7).

Japan also employs more than 40 NTMs on average for animal products – meat, dairy, fish as well as live animals – and for other food products which include processed meat, vegetables and wine.



FIGURE 7: AVERAGE NTMS APPLIED TO NZ EXPORTS BY DESTINATION  
Average number of NTMs, trade-weighted. Top 15 export destinations.<sup>16</sup>



<sup>16</sup> Destinations labelled using 3 digit ISO codes: AUS = Australia, CAN=Canada, CHN = China, EUN = European Union (in 2019), HKG = Hong Kong China, IDN = Indonesia, IND = India, JPN = Japan, KOR = Republic of Korea, MYS = Malaysia, PHL = Philippines, SGP = Singapore, THA = Thailand, USA = United States of America, VNM = Vietnam.



### 3. Estimated costs of NTMs

NTMs are estimated to have a substantial impact on trade transaction costs. Some researchers have gone so far as to say that increases in the use of and stringency of NTMs mean that trade costs have not declined over the past two decades despite declining tariff barriers (Niu et al, 2018).<sup>17</sup>

#### 3.1. Global compliance costs in the trillions

We estimate NTMs increased trade costs by 12% on average globally in 2019. That amounts to a NZ\$2.4 trillion increase in trade costs.

This is likely to be an underestimate because the research used to construct the estimate (Gourdon et al, 2020)<sup>18,19</sup> is restricted to a subset of NTMs (albeit a substantial subset.)<sup>20</sup>

This estimate is a measure of direct compliance costs. It ignores trade-enhancing benefits of NTMs from, for example, reduced uncertainty about product quality. It also ignores benefits from safer or healthier products. As noted in Gourdon et al (2020, p.6), higher ad-valorem equivalents (AVEs):

*... do not necessarily reflect more severe distortions to economic welfare. High AVEs imply that producers must incur substantial costs to comply with requirements of the destination market. However, high costs do not automatically equate with lower welfare. If the unregulated market equilibrium is far away from the social optimum, the costs associated with the NTM are a price to pay to get closer to desired outcomes. This is most obviously the case in foodstuffs, where consumer safety hazards are arguably high.*

Direct compliance costs are not a measure of welfare costs. They do not take account of the fact that consumer welfare costs of higher prices can be partially offset by substituting from higher-priced products to lower-priced products.

Given those caveats, these estimates should be interpreted as indicative of the scale of effects and importance of NTMs in world trade. That is, NTMs are pervasive and have large effects, and thus are a very important part of trade and economic policy, and worthy of scrutiny.

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<sup>17</sup> Niu, Z., Liu, C., Gunessee, S., Milner, C., 2018. Non-tariff and overall protection: evidence across countries and over time. *Rev World Econ* 154, 675–703. <https://doi.org/10.1007/s10290-018-0317-5>

<sup>18</sup> Gourdon, J., Stone, S., & Tongeren, F. van. (2020). Non-tariff measures in agriculture (Working Paper No. 147; OECD Food, Agriculture and Fisheries Papers). OECD. <https://doi.org/10.1787/81933f03-en>

<sup>19</sup> We have estimated costs using 2019 trade values by country at the HS6 level and by importing country and applying HS6 level ad-valorem equivalent NTM costs estimated by Gourdon et al (2020). Although the Gourdon et al (2020) report only provides results for agricultural products, we have used an unpublished dataset of results produced in the course of that research.

<sup>20</sup> The NTMs captured in these estimates include SPS, TBT, border control, and quantitative restrictions. It excludes the other 12 of the 16 categories of NTMs classified in the (chapters of the) MAST NTM classification. However, the measures captured here are the most widely applied and most often applied across all imports regardless of origin.



## 3.2. Costs correlate with volumes of trade affected

The costs of different types of NTMs broadly follow the share of global trade affected by those NTMs. That is, when investigating NTMs, the amount of trade impacted by NTMs is a reasonable proxy for the highest-cost NTMs in terms of total costs.

TBT measures impose the highest global costs on trade, amounting to NZ\$1.8 trillion in 2019. TBT NTMs make up around 90% of trade impacted by NTMs and 77% of the compliance costs estimated here.

SPS-related NTMs, which make up only 20% of trade impacted by NTMs, are estimated to impose global costs of NZ\$435 billion in 2019.

Figure 8 breaks down the costs of NTMs by high-level NTM category, showing the total cost of each measure – the figures at the end of the bars in billions of NZ dollars – and the average percentage or AVE cost of the NTMs.

The categories of NTMs presented here are grouped by<sup>21</sup>:

- TBT and SPS, so-called ‘technical measures’, broken down by
  - restrictions, e.g. quantity limits
  - regulations, encompassing the majority of standards-based NTMs, e.g. labelling and packaging, treatments, processes, and hygiene
  - conformity, i.e. processes and documentation required for proving compliance with regulations
- border controls, e.g. pre-shipment inspection requirements and restrictions on geographic movement of products, whether port of departure or port of entry
- quantity controls, e.g. import licensing, quotas and tariff-rate quotas (TRQs).

TBT regulations are estimated to impose the highest overall costs and the highest average or AVE costs – averaging 3.6% of trade value. These are the most frequently applied NTMs and encompass the largest number of potential NTMs.

SPS regulations are estimated to impose costs of NZ\$40 billion. This category of SPS NTMs is the most pervasive and broadest category of SPS measures in terms of counts of NTMs and products affected. However, the estimated compliance cost is smaller than the costs of SPS conformity measures (NZ\$170 billion) and SPS restrictions (NZ\$230 billion).

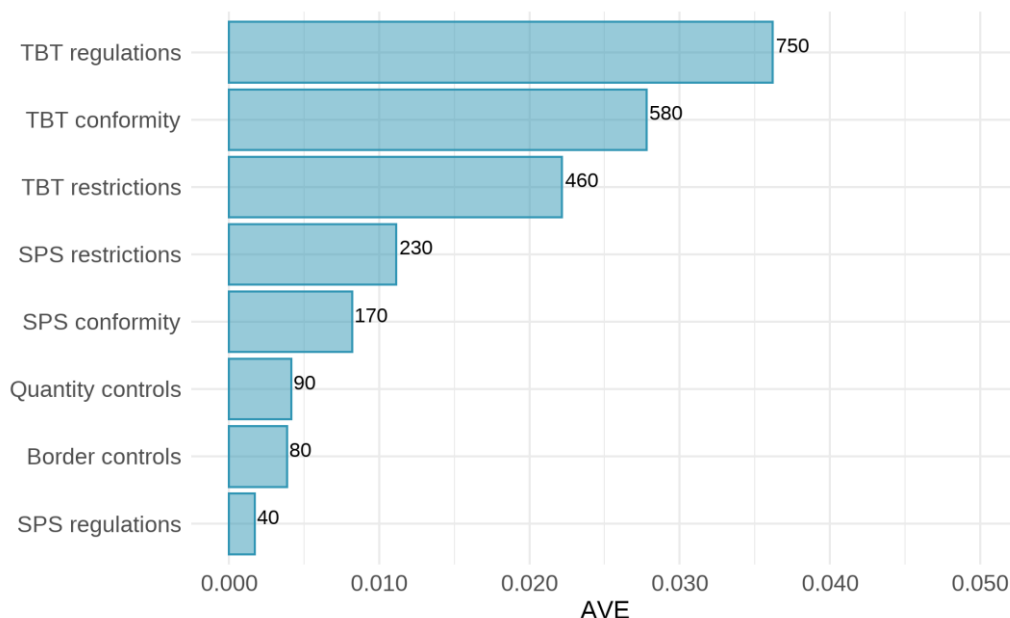
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<sup>21</sup> These categories reflect the categories used in Gourdon et al (2020) for differentiating different types of NTMs.



FIGURE 8: ESTIMATED GLOBAL COST OF NTMS BY TYPE OF MEASURE

Costs to consumers from higher prices from NTMs. Excludes benefits from trade-enhancing NTMs. Values at ends of bars are total costs in NZ dollar billions, 2019.



### 3.3. NTM costs vary significantly geographically

There is substantial and non-linear variation in the costs of NTMs geographically. This can be seen in Figure 9, where the 20% trade-weighted average NTM AVEs in Eastern Asia<sup>22</sup> are 6.5 times larger than the 3.0% NTM AVEs in South-eastern Asia.<sup>23</sup>

Countries with high NTM AVEs tend to have low tariffs and high incomes – giving some weak support to the notions that NTMs and tariffs are trade policy substitutes, and NTMs are more stringently and widely applied by developing countries.<sup>24</sup>

At a regional level and on a trade-weighted basis, the negative correlation between goods tariffs and NTM AVEs can be seen in the distance between the bar lengths (NTM AVEs) and dots (tariffs) in Figure 9.<sup>25</sup> At a country level, without trade weighting, the correlation between NTM AVEs and tariffs is -0.15 – a negative correlation but not a strong one.

<sup>22</sup> The UN classification Eastern Asia is often referred to as North Asia, including China, Japan, and Republic of Korea.

<sup>23</sup> The UN classification Southern-eastern Asia corresponds to ASEAN member countries, with the addition of Timor-Leste.

<sup>24</sup> This observation should not be taken as a claim to causality. It is merely a summary description of the data.

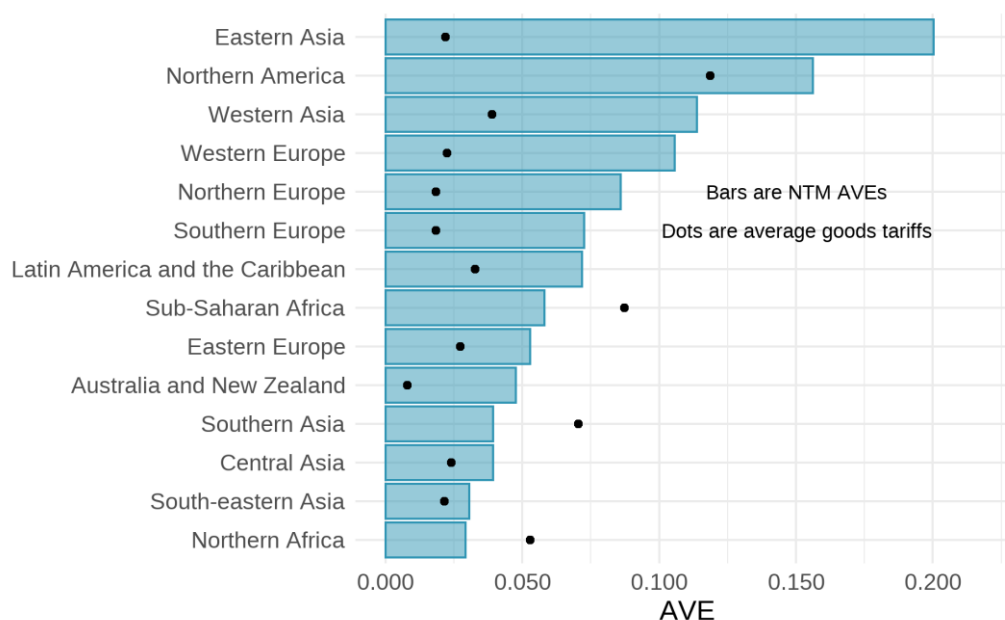
<sup>25</sup> Note that average trade weighted tariffs increased considerably in 2019 in North America due to significant and most likely temporary trade policy changes in the USA in that year. Prior to 2019 the average tariff in North America was around the same level as Western and Northern Europe.



There is a stronger positive relationship between development and NTM compliance costs. The correlation between gross national income per capita<sup>26</sup> and NTM AVEs is 0.32.<sup>27</sup>

FIGURE 9: ESTIMATED NTM PRICE EFFECTS BY REGION

Dots are trade-weighted average applied tariffs, for comparison to AVEs.



There is considerable variation in NTM AVEs within regions (see Figure 10). High regional trade-weighted average NTM AVEs obscure instances of very low AVEs and low trade-weighted average AVEs obscuring high AVEs.

The Latin America and the Caribbean region, for example, has below average NTM AVEs (7% in Figure 9, relative to a trade-weighted global average of 12%). But within that region:

- Argentina and Brazil have high average trade-weighted NTM AVEs of 16% and 23% respectively – the fifth-highest and second-highest estimated NTM AVEs by country, respectively
- the four lowest NTM AVEs globally are in Central America (Costa Rica, El Salvador, Honduras, and Guatemala).

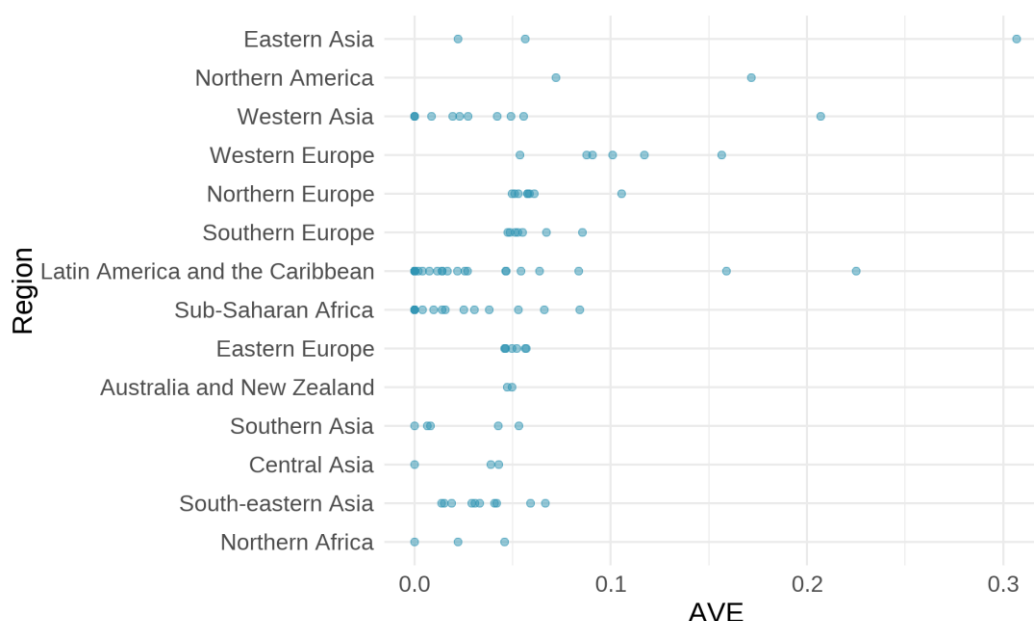
The top five countries with the highest trade-weighted NTM AVEs are China (31%), Brazil (23%), the United Arab Emirates (21%), the USA (17%), and Argentina (16%).

<sup>26</sup> World Bank purchasing power parity gross national income per capita in constant dollars.

<sup>27</sup> Unweighted correlation coefficient across the 109 countries in our sample.



FIGURE 10: ESTIMATED NTM PRICE EFFECTS BY COUNTRY



### 3.4. Costs on NZ exports differ from global averages

The high share of primary products in New Zealand exports means that the costs of NTMs looks quite different to global average.

Compliance costs are over 20% of the value of New Zealand exports, as compared to 12% of global trade, amounting to costs of more than NZ\$12 billion annually.

SPS restrictions make up 59% of NTM costs imposed on exports from New Zealand, relative to 10% on average globally. TBT regulations make up 9% of costs on exports from New Zealand and 33% of costs globally.

New Zealand's large amount of trade with China and other countries in Eastern Asia means more than half of NTM costs are concentrated in that region (52%). Globally, Eastern Asia makes up a third of NTM costs.

Conversely, North America makes up only 21% of NTM costs on New Zealand exports while comprising 25% of NTM costs globally.

Unit costs of NTMs on New Zealand exports to North America are high. That can be seen in Figure 12, where aggregate NTM costs by region are plotted against trade volumes. A dashed line indicates where NTM costs are proportional to exports, i.e. where a 1% increase in trade would be expected to result in a 1% increase in NTM costs. Points above (below) the line indicate costs that are high (low) relative to exports.

One of the main drivers of high unit costs – high AVEs – for NTMs are exports of alcoholic beverages – mainly wine. Trade in alcoholic beverages face high numbers of NTMs in many markets, particularly in the USA.



FIGURE 11: ESTIMATED COSTS OF NTMS BY TYPE OF MEASURE, NZ EXPORTS

Costs to consumers from higher prices from NTMs. Excludes benefits from trade-enhancing NTMs. AVE is the proportional increase in price due to NTMs, e.g. 0.05 = 5% price increase. Values at ends of bars are total costs in NZ dollar millions, 2019.

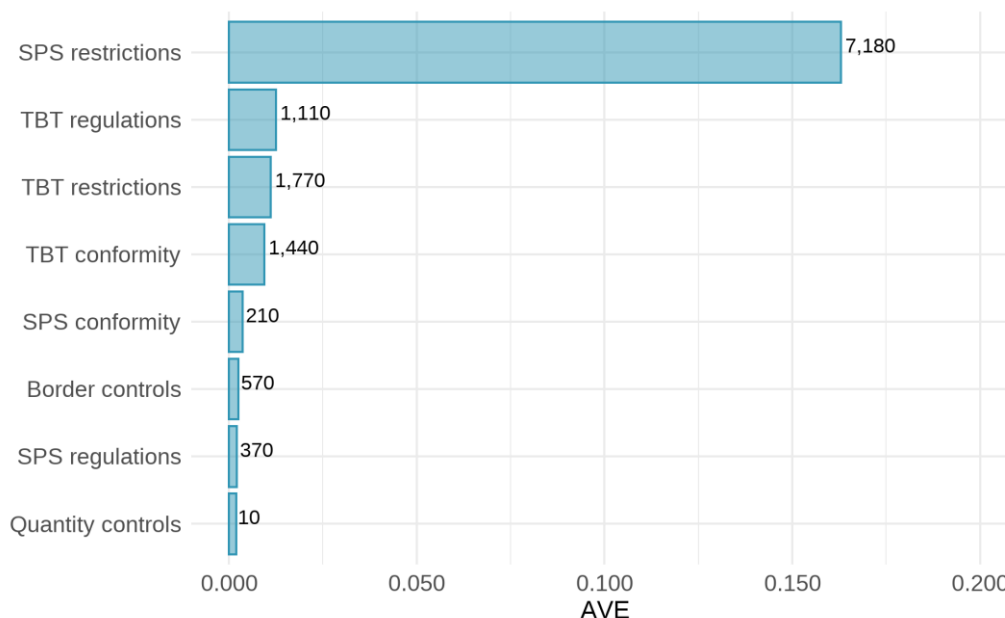
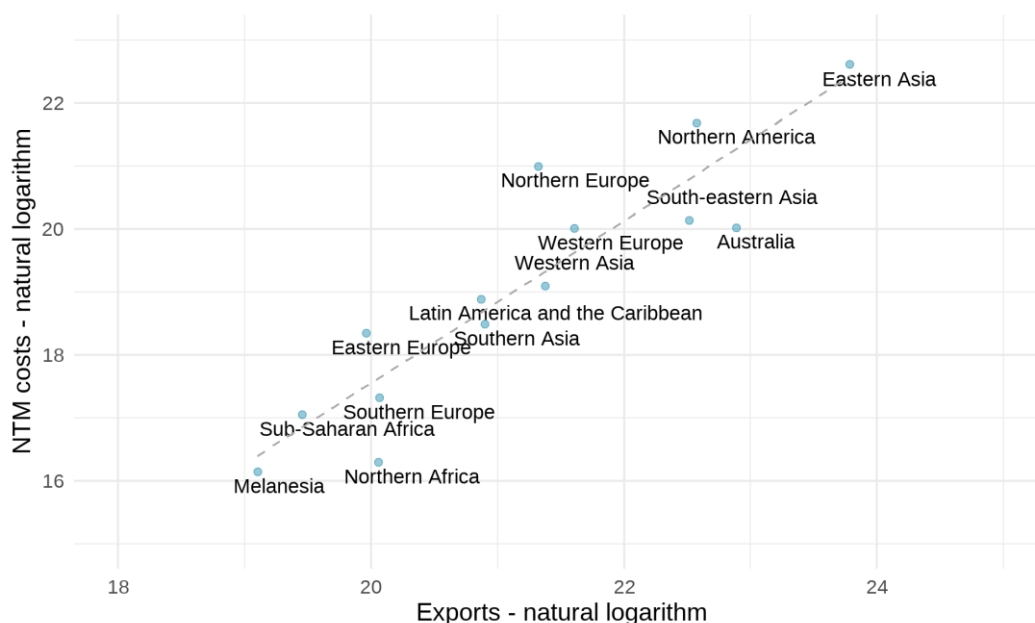


FIGURE 12: ESTIMATED NTM COSTS ON NEW ZEALAND EXPORTS BY REGION

Share of trade vs share of NTM costs



Globally, beverages have the highest average NTM AVEs of any product group (by HS chapter) and the second highest total NTM costs behind cars (see Figure 14). Across all beverage exports from New Zealand to all markets, the costs of NTMs are estimated to be 1.5 times (150%) of total trade value and totalling \$3.3 billion New Zealand dollars (see Figure 13).



The vast majority of the total cost of NTMs on beverage exports from New Zealand come from trade with the USA and the United Kingdom (UK).

Exports of wine to the USA and the UK make up approximately 75% of the estimated costs of NTMs to beverage trade, reflecting both high AVEs of NTMs affecting wine trade with these countries and the high value of New Zealand exports to these markets. New Zealand exports of wine to the USA and the UK totalled approximately \$1 billion in 2019 and exports to those countries made up over half of New Zealand wine exports in 2019.

Exports of dairy products from New Zealand face the highest total costs from NTMs – \$5.4 billion – followed by beverages (\$3.3 billion) and meat (\$1.3 billion). Although, dairy and meat NTM AVEs are ranked 4<sup>th</sup> and 13<sup>th</sup> out of the top 25 products (see Figure 13).

Fruit exports face a relatively low NTM cost (\$460 million), with an average AVE of 19% relative to the global average of 30% – the fourth highest AVE by product group globally. Further investigation of NTMs on exports of fruit from New Zealand is required to determine if these results are due to trade going to markets with relatively low NTMs or trade concentrated in products that have low NTMs relative to global averages.

### 3.5. These numbers are indicative only

Caution needs to be applied in the interpretation of these numbers. The ultimate effects of these costs on New Zealand exporters are ambiguous. Further market- and product-specific research is needed before drawing conclusions.

One reason for caution is that compliance costs are unlikely to fall equally on all exporters in all countries. Our estimates of NTM costs are based on NTM AVE averages across all exporters. In practice, some exporters will have capacity to comply with NTMs at relatively little cost while others may have difficulties and face higher costs. That being so, high NTM AVEs can confer a competitive advantage on some exporters. Established traders from countries that have strong commercial, social and cultural connections (i.e. better networks) may well be less affected by NTMs than those in less well-connected countries.

Another reason for caution is that NTM AVEs will be overstated in situations where products attract premiums (on average) because of unmeasured attributes such as differences in quality of imported product relative to domestic production (on a trade- or production-weighted basis). And these measurement errors will tend to be most problematic for product groups where there are substantial variations in consumer preferences for products within that group, such as is the case for wine or for spirits.



FIGURE 13: CONCENTRATION OF COSTS BY EXPORT PRODUCTS, NEW ZEALAND  
Top 25 products ranked by NTM AVE. AVE is the proportional increase in price due to NTMs (1.00 = 100%). Values at ends of bars are total costs in NZ dollar millions, 2019.

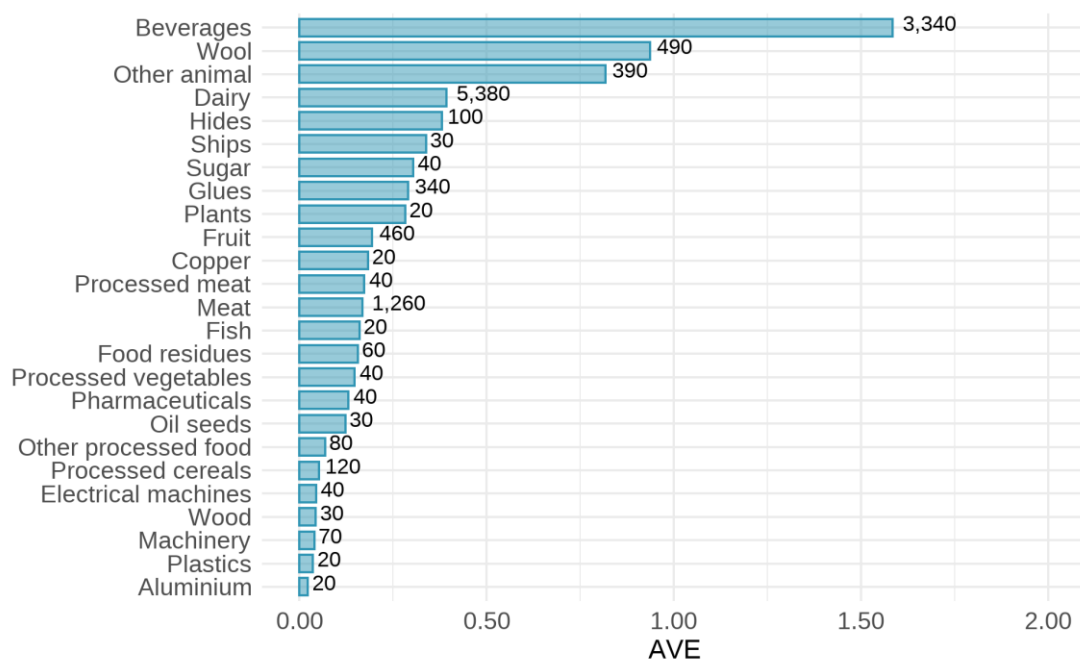
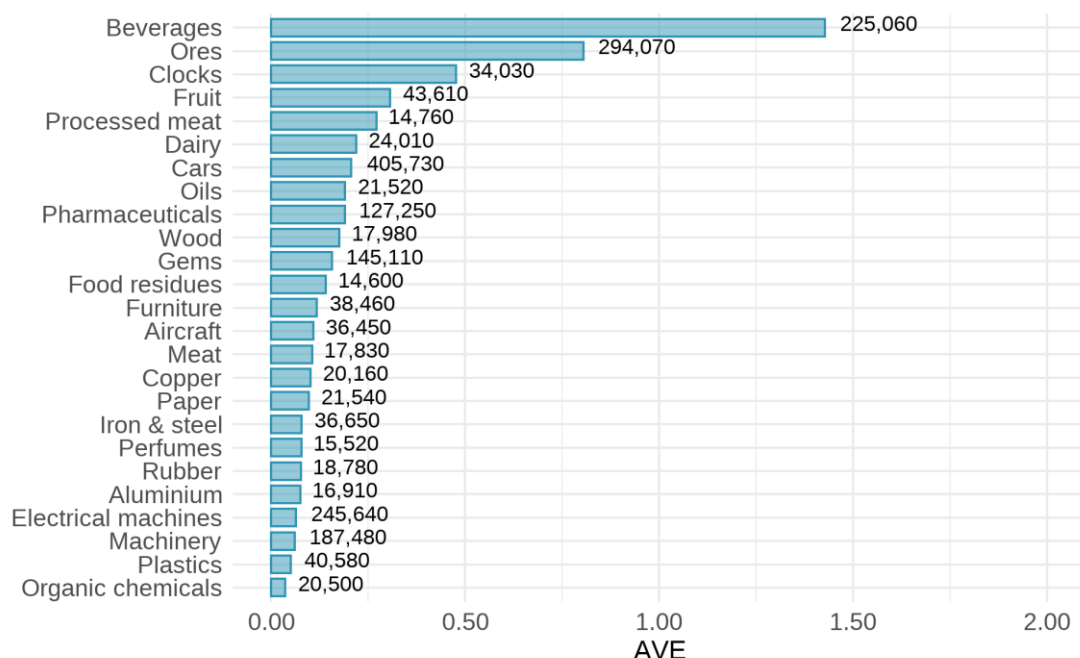


FIGURE 14: CONCENTRATION OF COSTS BY EXPORT PRODUCTS, GLOBAL  
Top 25 products ranked by NTM cost. AVE is the proportional increase in price due to NTMs (1.00 = 100%). Values at ends of bars are total costs in NZ dollar millions, 2019.





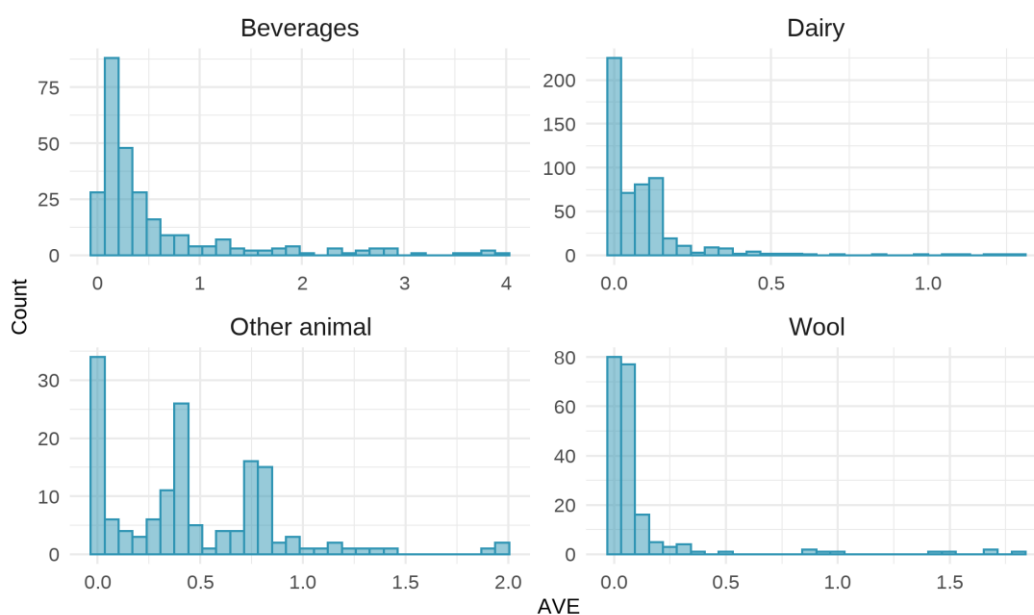
### 3.6. A small number of NTMs impose large costs

From a compliance cost perspective, NTMs are typically concentrated in a small number of products and markets. This can be seen in Figure 15, which charts variation in NTM AVEs within the four product categories (HS chapters) that have the highest average NTM AVEs. The variation in NTM AVEs shown in Figure 15 reflects different AVEs by product (HS 6-digit) and by export destination. All four products exhibit a distribution with long right-hand tails of very high AVEs (greater than 1).

That being so, any policy response to high-cost NTMs ought to be based on careful country- and product-specific analysis of NTMs, rather than high-level descriptions of the kind presented here.

FIGURE 15: VARIATION OF NTM EFFECTS WITHIN PRODUCT CATEGORIES

Top 4 product groups, ranked by AVE price effect of NTMs. Vertical axis is count of exports by unique combinations of product (HS6) and destination.



## 4. Recent trends

Data on changes in the use of NTMs over the past decade show:

- moderate and unremarkable growth in the use of conventional technical NTMs
- a concerning and rapid rise in the use of subsidies, export measures, and contingent trade protection.

### 4.1. Steady growth in technical NTMs

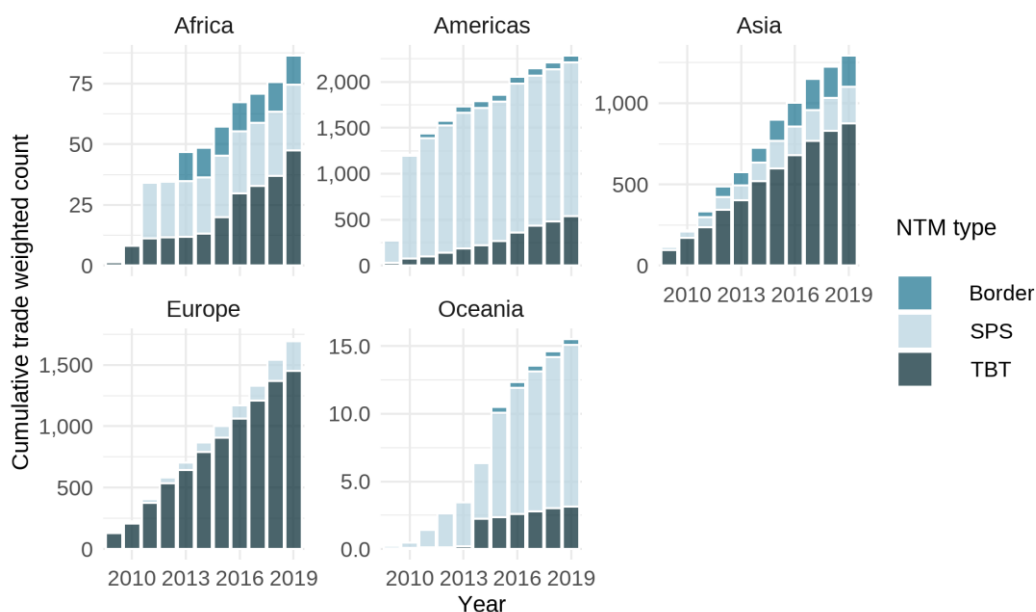
There are no particularly strong trends or features in the application of regulatory or technical NTMs (SPS, TBT, or border measures).

In the past decade, there has been a significant cumulative increase in the number of technical NTMs but the annual flow of new NTMs has not been increasing.

The cumulative increase in NTMs (see Figure 16) can appear problematic but it may not be given that technical NTMs can be beneficial. And increasing numbers of technical NTMs may simply reflect refinement of regulatory policy (e.g. improved targeting of NTMs and amendments to standards as science changes) or enhanced regulatory capacity (e.g. improved product safety standards).

FIGURE 16: TRENDS IN BORDER, SPS AND TBT MEASURES<sup>28</sup>

Cumulative counts of new NTMs since 2009, weighted by global trade value



<sup>28</sup> Based on UNCTAD TRAINS and Vienna Institute for International Economic Studies data.



Persistent additions to the stock of NTMs should not be celebrated. A case can be made for rationalisation or harmonisation of technical NTMs, to reduce compliance costs and regulatory complexity. But trends in the use of new technical NTMs are not remarkable or obviously a problem.

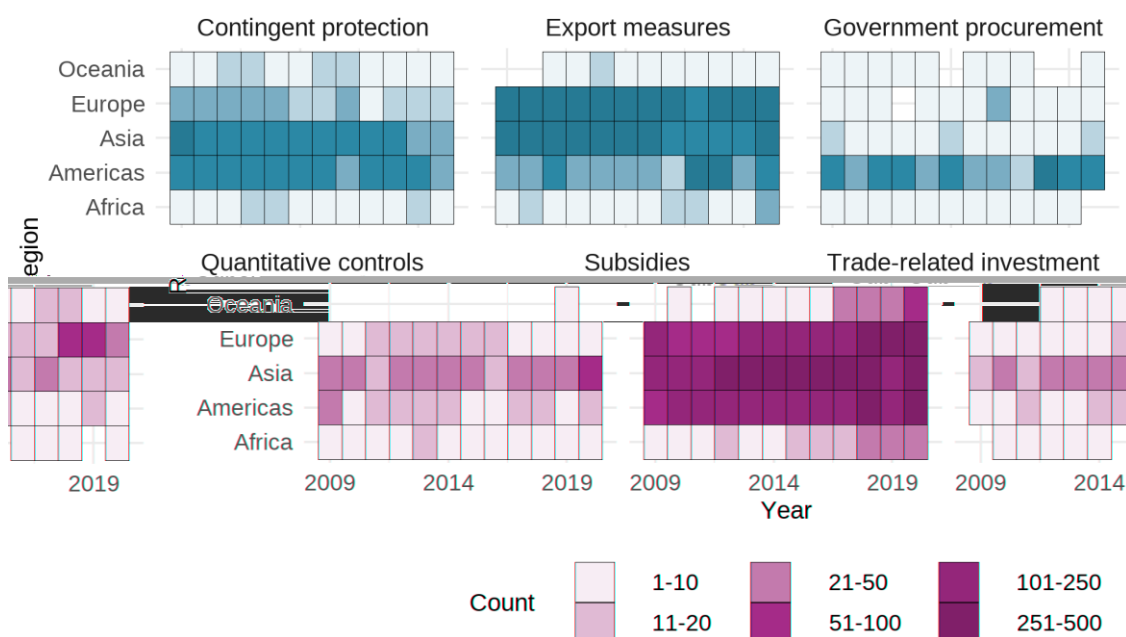
## 4.2. Significant increase in distortionary measures

Global Trade Alert (GTA) data shows a significant net increase in the number of trade-restrictive or distortive non-tariff measures being applied over the past 11 years. A cumulative 19,000 new distortionary non-technical measures have been introduced since 2008.<sup>29</sup>

The majority of new distortionary NTMs are subsidies (see Figure 17). And the number of new subsidies introduced each year has been increasing over time and spreading geographically.

This sort of trend is troubling because it can snowball by promoting reactionary policies – whether subsidies or protectionist measures – for purely political reasons. And, once in place, these policies can be hard for governments to back down from. Thus, this sort of dynamic entrenches costly distortions to global trade.

FIGURE 17: TRENDS IN NEW NON-TECHNICAL & BEHIND THE BORDER MEASURES  
New measures initiated, by year region and category



The largest economies are typically, but not exclusively, the ones that have introduced the largest numbers of measures. This is shown in Figure 18, which plots the number of new

<sup>29</sup> The number of restrictive measures introduced less the number of restrictive measures withdrawn between 2008 and 2020.



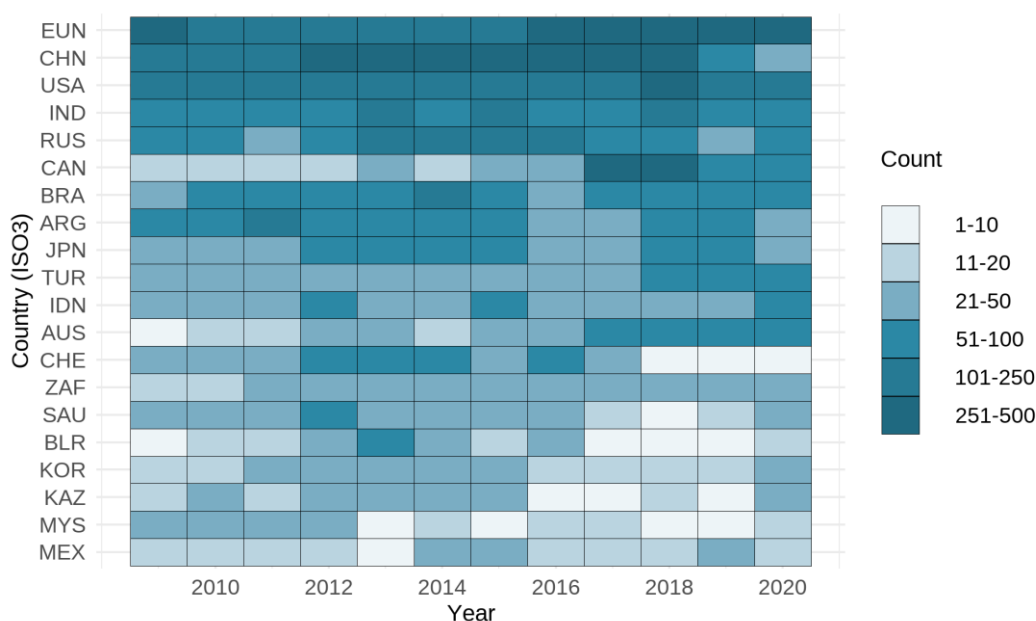
distortionary measures by country for the top 20 countries ranked by the total number of distortionary measures introduced since 2008.

The number of new measures spiked in 2018, marked by unilateral measures taken by the USA affecting a wide range of its trade partners. Retaliatory measures were widespread, but most pronounced in China and the European Union.

Much of the diplomatic heat of 2018 has now dissipated, but it may be some time before more normal service is resumed, if at all.

That said, the trend towards increased protectionist policies has been in place for some time as evidenced by the number of export-related NTMs and subsidies introduced since 2008 (Figure 17).

FIGURE 18: NON-TECHNICAL & BEHIND THE BORDER MEASURES BY COUNTRY  
Top 20 countries ranked by measures initiated since 2008. EU (EUN) treated as a country.



### 4.3. New Zealand has been somewhat insulated

New Zealand exporters have been somewhat insulated from the more perverse trade-restrictive and distortionary measures taken in the past decade because most of the measures have been targeted at manufactured goods.

The top five groups of products affected by new non-technical NTMs in the past decade have been machinery, metals, transport equipment, minerals and chemicals (Figure 19) – which make up a relatively limited share of exports from New Zealand.

Measures affecting New Zealand trade have been extremely concentrated. By count of measures applied, dairy and fruit products are by far the most affected. This is shown in Figure 20.



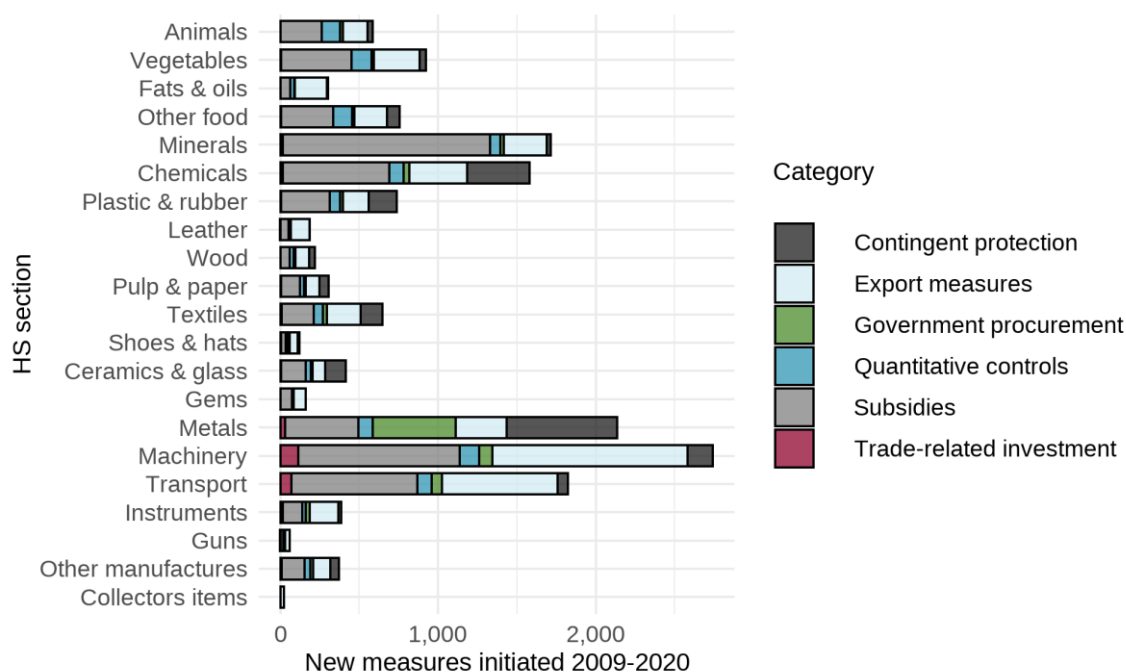
Furthermore, only the measures applying to fruit and dairy products apply to a large amount of trade. That is, if the measures counted in Figure 20 were weighted by export volumes, then all bars except fruit and dairy would become extremely small.

There are exceptions of course. The New Zealand economy has been materially impacted, both positively and negatively, by Russian log export bans and Chinese subsidies, for example.<sup>30</sup>

New Zealand exports are also, in very broad terms, highly exposed to the impacts of measures introduced and removed in China, especially subsidies (noting differences in vertical axes between markets).

But, on balance, New Zealand has been fairly insulated from the direct impact of rising number of restrictive and distortionary NTMs being applied in the past decade.

FIGURE 19: NON-TECHNICAL MEASURES BY PRODUCT, GLOBAL  
Counts of new measures, grouped by HS section.



<sup>30</sup> [Sense Partners \(2019\) 'Impact of global trade distortions: Effects on NZ exports of logs, timber and fibreboard', Report to MFAT, November 2019.](#)



FIGURE 20: NON-TECHNICAL MEASURES AFFECTING NZ TRADE, BY PRODUCT  
Counts of new measures, grouped by HS chapter, for chapters with trade over \$50 million

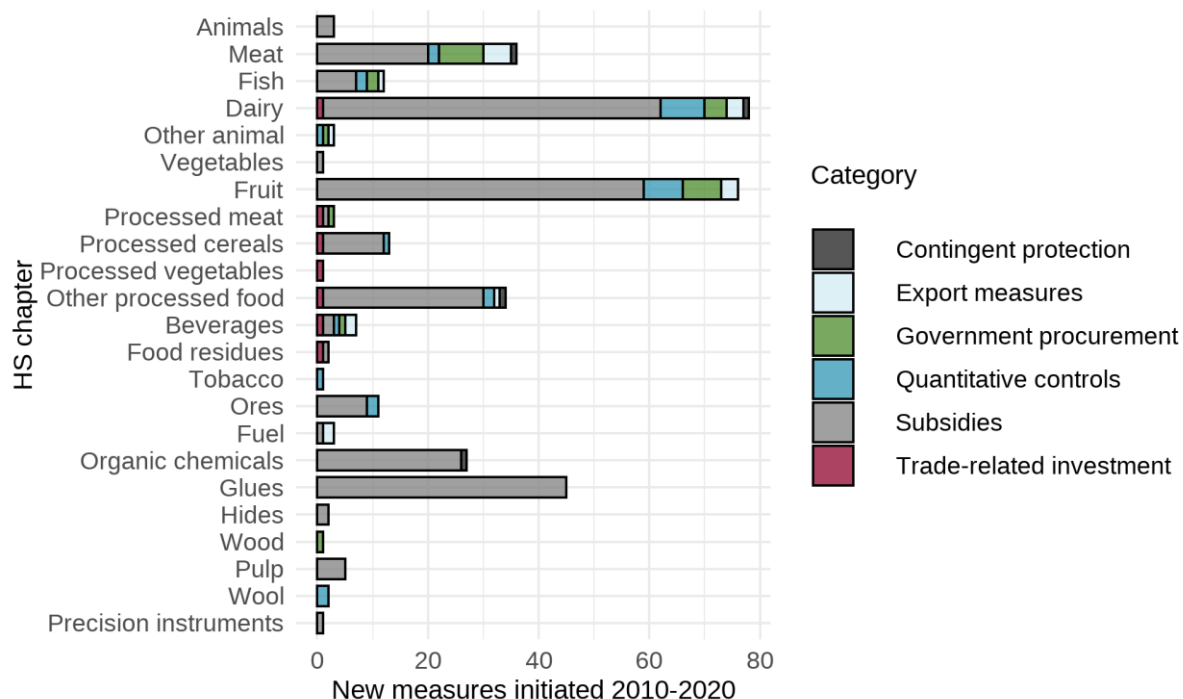
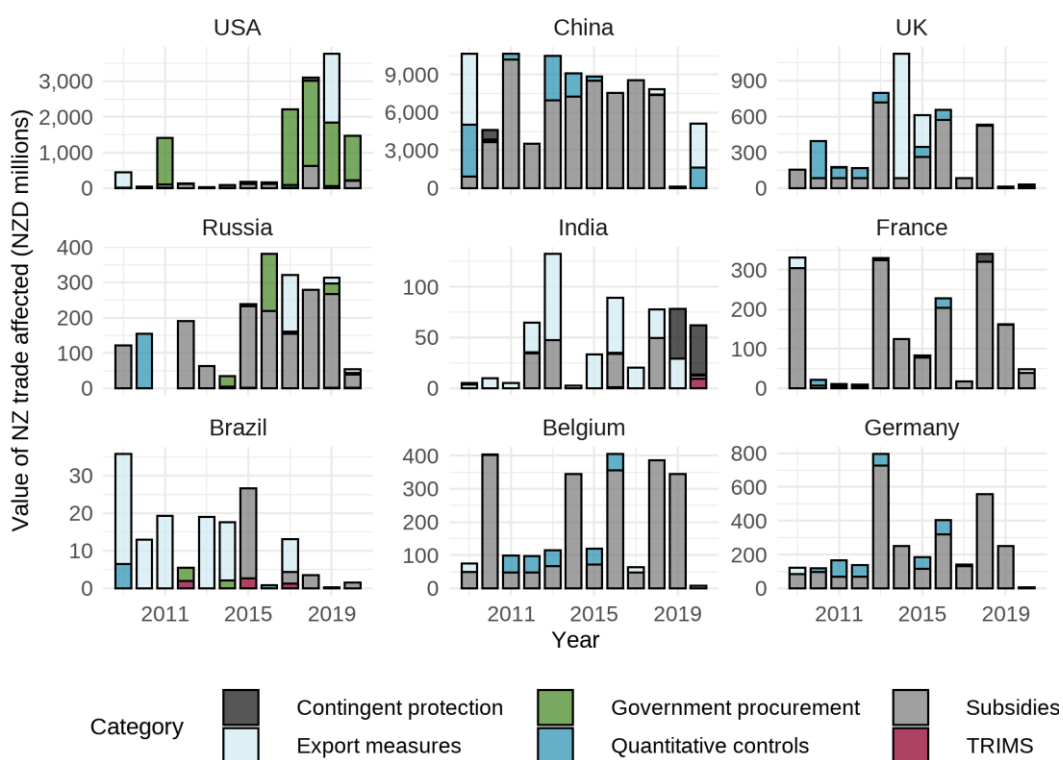


FIGURE 21: NEW MEASURES AFFECTING NZ TRADE – BY DESTINATION MARKET  
Top 9 markets ranked by trade-weighted counts of new measures





## 5. Appendix

### 5.1. Data sources

The data on NTMs used in this analysis comes from four sources:

- **TRAINS:** researcher database, by UNCTAD<sup>31</sup>
  - the most comprehensive source of data on the global stock of NTMs
- **WIIW:** Vienna Institute for International Economic Studies (**WIIW**) database on NTMs
  - based on NTMs notified to the WTO, collated in the WTO's integrated trade intelligence portal (I-TIP) and
  - temporary trade barriers collated by the World Bank<sup>32</sup>
  - collected, cleaned and augmented with information on affected products<sup>33</sup>
- **GTA:** Global Trade Alert<sup>34</sup>
  - the most comprehensive source for analysing new NTMs and other interventions since 2008
- **OECD:** estimates of the impacts of NTMs on trade.<sup>35</sup>

The trade data used in this analysis is from the UN Comtrade database.<sup>36</sup> Unless otherwise stated, the trade data is for 2019 and is in US dollars.

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<sup>31</sup> <https://trainsonline.unctad.org/home>

<sup>32</sup> <https://www.worldbank.org/en/data/interactive/2021/03/02/temporary-trade-barriers-database>

<sup>33</sup> Grübler, J., & Reiter, O. (2020). "Characterising Non-tariff Trade Policy" (Research Report No. 449; Wiiw Research Report). The Vienna Institute for International Economic Studies. <https://wiiw.ac.at/characterising-non-tariff-trade-policy-p-5375.html>

<sup>34</sup> <https://www.globaltradealert.org>

<sup>35</sup> Gourdon, J., Stone, S., & Tongeren, F. van. (2020). Non-tariff measures in agriculture (Working Paper No. 147; OECD Food, Agriculture and Fisheries Papers). OECD. <https://doi.org/10.1787/81933f03-en>

<sup>36</sup> <https://comtrade.un.org/>



TABLE 2: COVERAGE OF DATA SOURCES

Blank indicates no data. "X" indicates good coverage. "o" indicates poor coverage.

Measure	TRAINS	WIIW	GTA	OECD
Sanitary and phytosanitary (SPS) measures	X	X	o	X
Technical barriers to trade (TBT)	X	X	o	X
Pre-shipment inspections and other formalities	X			X
Contingent trade-protective measures		X	X	
Non-automatic licensing, quotas, prohibitions and quantity-control measures	X	X	X	X
Price-control measures, including additional taxes and charges	X		X	
Finance measures	X		X	
Measures affecting competition	X	X		
Trade-related investment measures	X		X	
Distribution restrictions				
Restrictions on post-sales services				
Subsidies (excluding export subsidies)			X	
Government procurement restrictions			X	
Intellectual property			X	
Rules of origin				
Export-related measures	X		X	
Countries implementing NTMs	92	148	190	110
Time period	2010-2018	1995-2019	2008-2020	2020



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