



# ABARES Insights

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## Non-tariff barriers: A multi-billion dollar burden

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Better market access benefits Australia's exporters and supports market diversification goals. Australian agricultural exporters are long term beneficiaries of the removal of trade barriers globally through World Trade Organization mechanisms and Australia's free trade agreements. As average applied tariffs on Australian exports fell in recent decades, the number of non-tariff barriers rose, raising concerns that tariffs are being replaced by protectionist non-tariff barriers. New modelling shows that these non-tariff barriers, sometimes referred to as technical market access barriers, are equivalent to a 19% tariff, and are a multi-billion dollar burden on Australian agricultural exports, and warrant concerted and strong efforts to combat their rise.

## The rise of non-tariff barriers

This report outlines changes in global trade barriers over time including the sustained rise of non-tariff policy measures. Non-tariff policy measures are particularly prominent in agricultural trade, provoking special interest among agricultural exporters. These measures are challenging to quantify, partly because they can either facilitate trade or form barriers to trade. New ABARES research on the quantification and modelling of non-tariff policy measures shows a significant and growing impact of certain non-tariff barriers (NTBs). In order to properly understand the impact of NTBs on agricultural trade, considerations must extend to international market dynamics such as trade diversion. Benefits from the removal of NTBs can be achieved by understanding these market dynamics and continuing to maintain and target efforts appropriately.

### What are NTBs?

The Department of Foreign Affairs and Trade defines a non-tariff barrier (NTB) as “any kind of ‘red tape’ or policy measure, other than tariffs or tariff-rate quotas, that unjustifiably restrict[s] trade.” (DFAT 2024). In this report, a non-tariff measure (NTM) is defined as a trade policy measure other than a tariff, without regard to whether it is justifiable under international trade law.

Whether a policy measure increases or reduces trade is a separate question to whether a measure is justified.

Non-tariff measures (NTMs) can be separated into categories, such as sanitary and phytosanitary (SPS; food safety and plant/animal health-related), technical barriers to trade (TBTs) and quantitative restrictions. Reducing NTM compliance burden is sometimes referred to as ‘technical market access’ and can include “biosecurity, food safety, sanitary or phytosanitary treatment, testing, labelling, and certification” (DAFF 2024). The removal of non-tariff measures can reduce the cost of exporting, and supports diversification objectives by reducing barriers to entry into a wider number of markets at a lower cost.

**This report refers to NTMs, rather than NTBs, to avoid assessment of justification of “barriers”**

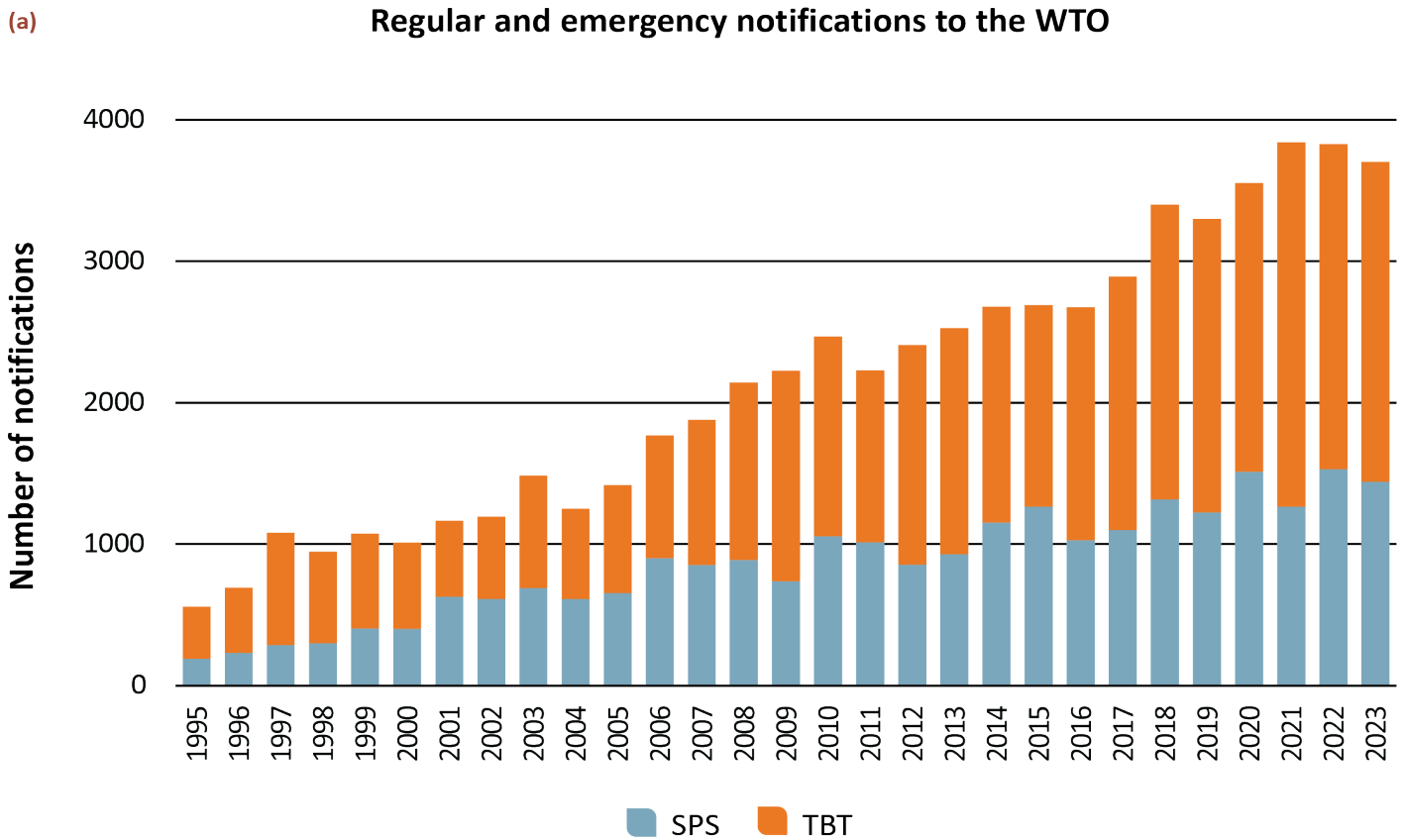
**Non-tariff barriers are any kind of ‘red tape’ or policy measure, other than tariffs or tariff-rate quotas, that unjustifiably restrict trade**

### The number of NTMs has been increasing over time

Data from the World Trade Organization (WTO) and the UN Conference on Trade and Development (UNCTAD) indicate that the number of NTMs across all commodities has been increasing over time. Mandatory notifications of NTMs from each WTO member are shown in panel (a) of Figure 1, and the number of trade concerns, which reflect concerns raised formally at the WTO about issues with another member’s NTMs, are shown in panel (b). These show a growing trend in the use of NTMs globally.

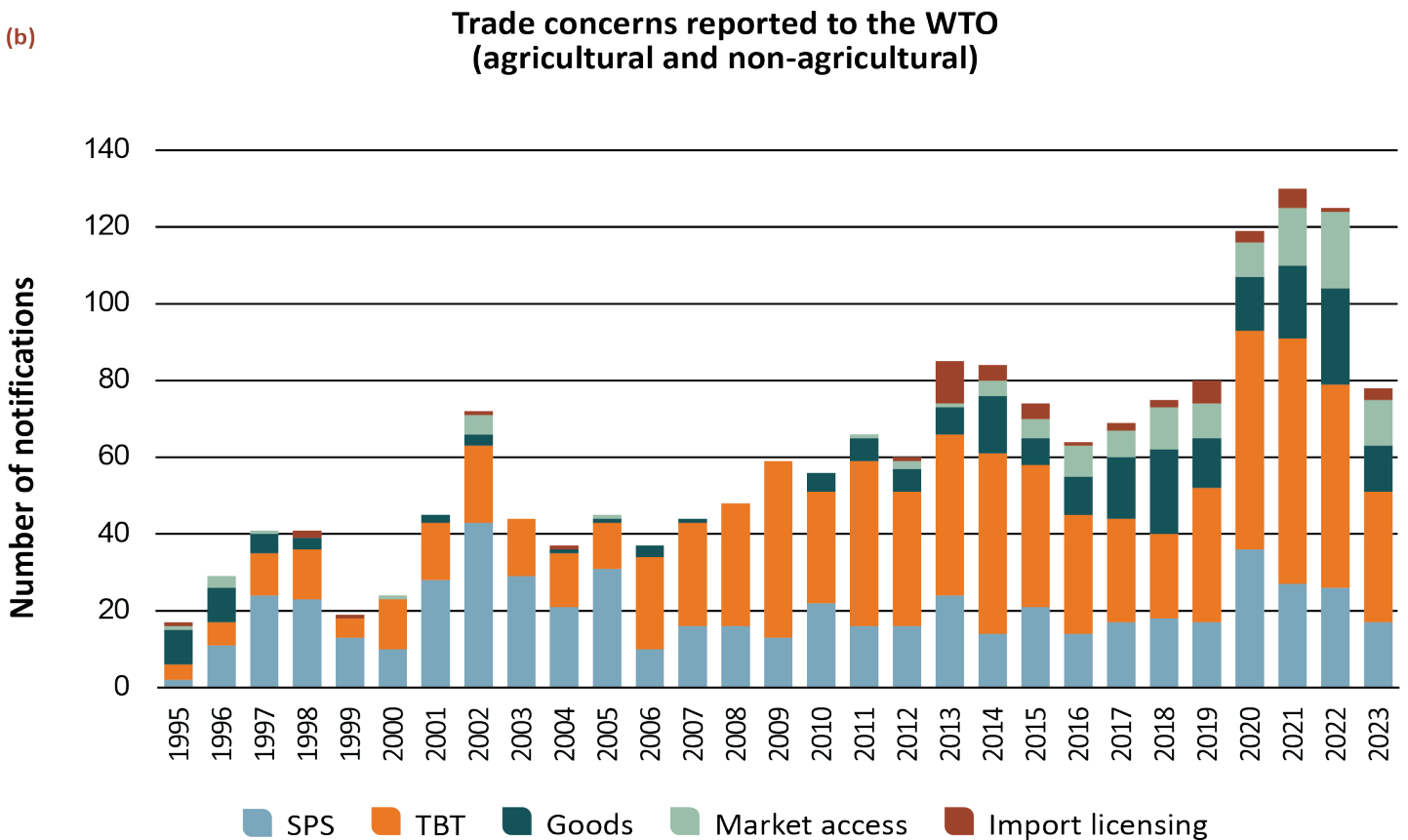
UNCTAD also collects data on NTMs, via consultants who collect and report measures for each country. These are reported on a commodity, exporter and importer basis, allowing a time series on a bilateral basis to be created. These data (panel (c)) show an increase in the number of NTMs recorded, including for agriculture. Although none of the datasets are perfect measures of the change in NTMs over time, they all show a consistent upward pattern.

**Figure 1** Across multiple measures, the number of NTMs has been increasing over time



**Note:** SPS = sanitary and phytosanitary. TBT = technical barriers to trade.

Source: WTO ePing (2024)

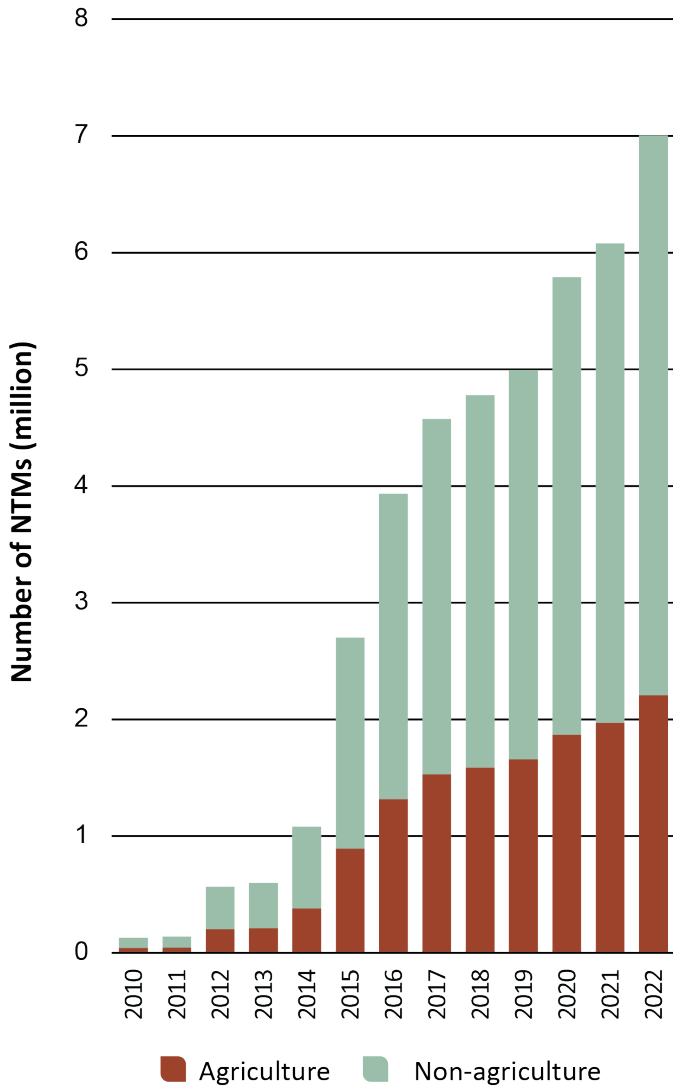


**Note:** Categories displayed here represent the respective WTO committee in which the concern is raised. SPS = sanitary and phytosanitary. TBT = technical barriers to trade.

Source: WTO Trade Concerns (2024)

(c)

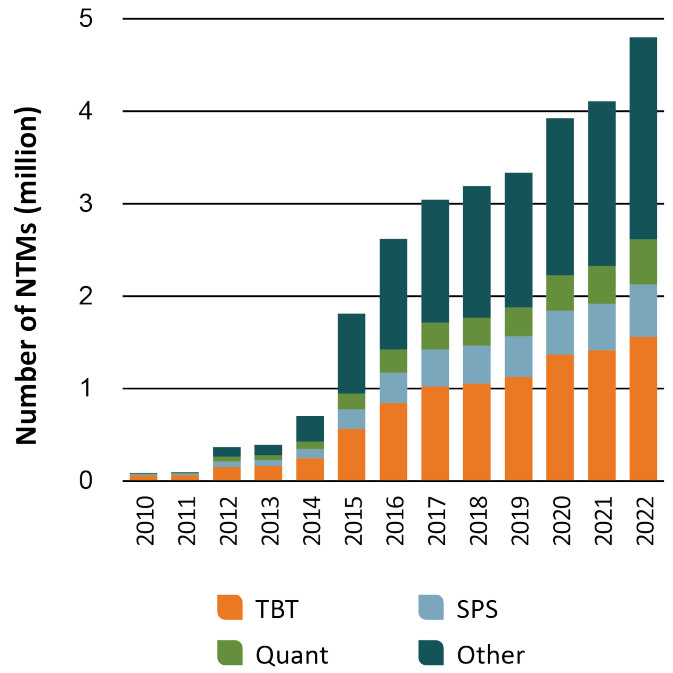
### NTMs recorded by UNCTAD, faced by Australia



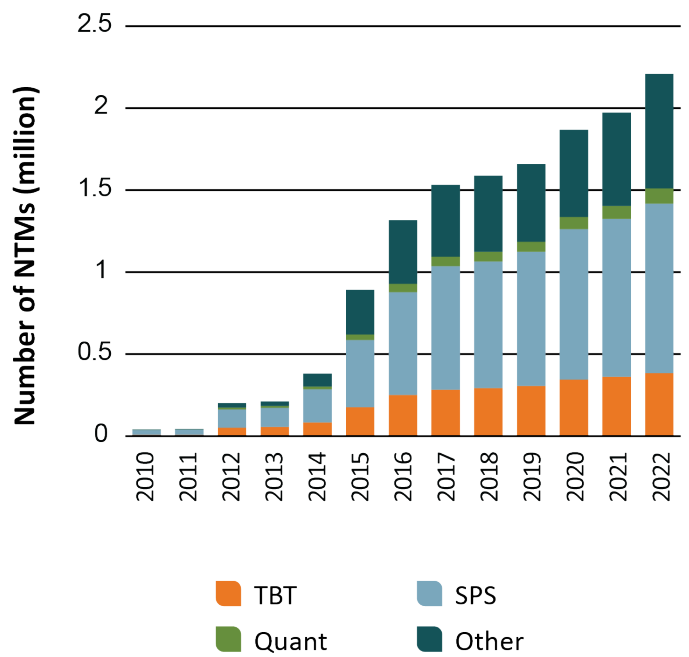
**Note:** The large number of NTMs in the chart is due to expansion of each unique NTM to a bilateral and HS code basis. Each measure is weighted according to the number of HS6 products and countries that it applies to. Multilateral NTMs (i.e. measures applied by an importer to all countries) are assumed to apply to 248 regions, which is the number of regions defined in the UN Statistics Division's 'Standard country or area codes for statistical use (M49)' (UNSD 2024). Agriculture is defined using the WTO Agreement on Agriculture (WTO 1994). Increases in the number of NTMs recorded can be caused by improved awareness and improved recording of NTMs, rather than a real-world rise in NTMs. SPS = sanitary and phytosanitary, TBT = technical barriers to trade, Quant = quantitative restrictions.

Source: ABARES analysis of UNCTAD (2024) data.

### Non-agriculture NTMs recorded by UNCTAD, faced by Australia



### Agriculture NTMs recorded by UNCTAD, faced by Australia

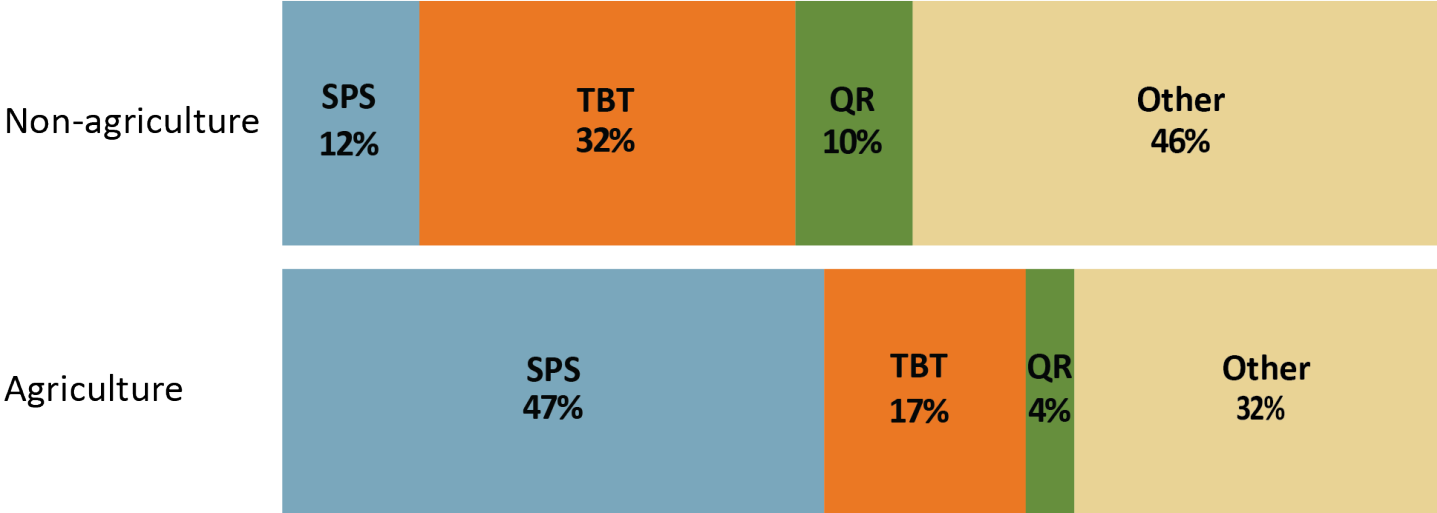




## Most agricultural trade policy measures are SPS and TBTs

The agriculture sector faces a different profile of measures, when compared to non-agricultural sectors (Figure 2). This largely reflects the nature of agricultural products, and their role as inputs into food production. As biosecurity and food safety are major concerns in many markets, the largest category of NTMs in agriculture is SPS measures. This contrasts significantly to non-agricultural goods, where TBTs are the most prominent.

**Figure 2** Food safety and biosecurity influence the profile of trade policy measures faced by agriculture



**Note:** SPS = sanitary and phytosanitary, TBT = technical barriers to trade, QR = quantitative restrictions. Data are shown for 2022. Agriculture is defined using the WTO Agreement on Agriculture (WTO 1994)

Source: ABARES analysis of UNCTAD (2024) data.

## Is the impact of NTMs getting worse?

Figure 1 shows NTMs increasing in number. However, an increase in the overall count of NTMs does not necessarily equate to a worsening effect on trade. To answer the question of whether the impact of NTMs is getting worse, it is necessary to have a robust method for quantification of the trade effects.

Counts of NTMs can be misleading. For example, additional measures could be frivolous and impose no burden on exporters and importers. Likewise, the addition of new NTMs may have no additional impact, as earlier policies may have already been prohibitive. Similarly, not all trade policy measures are equal – one measure could have a greater impact on trade than one hundred measures combined.

**Counts of NTMs are not sufficient evidence that the NTM burden is getting worse – robust quantification of trade effects is required**

Additionally, data collection and reporting practices can influence the count of NTMs. Improved awareness of what constitutes an NTM, improved reporting capacity and recording knowhow all impact the count of NTMs, even if there were no change in trade policy. When measures are counted on a commodity basis (i.e. trade code basis), as per the analysis above, an increase in the number of trade codes, resulting from 5-yearly reviews by the World Customs Organization, could also trigger an apparent increase in the number of NTMs. If an NTM applies to a broad group of codes (e.g. red meat), then an increase in HS codes in that group would lead to an apparent increase in the number of NTMs.

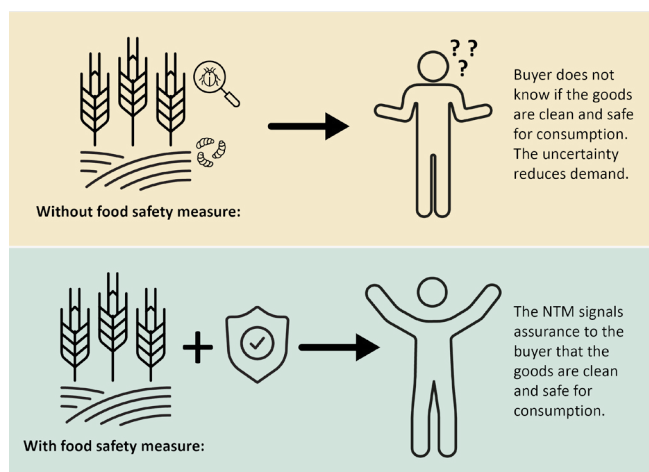
Lastly, just because the count of NTMs increases, it does not mean that the trade effects are getting worse. An increase in the count of NTMs could be the result of an increase in trade-promoting measures, rather than trade-reducing measures.

## Trade policy measures can promote trade

When an importing country introduces an NTM, the targeted good needs to comply. This means NTMs can reasonably be expected to impose a compliance cost on the export supply chain. At the same time, the NTM may boost demand for the export goods if, for example, the NTM signals additional information to the buyer, such as product safety, traceability or sustainability. If the additional demand outweighs the adverse effect of increased costs in the supply chain, then an NTM may promote trade.

Fell & Duver (2024) found that many SPS measures in grains markets in the period 2011 to 2018 were trade-promoting. Importantly, a trade-promoting NTM may still be excessively burdensome if the same outcome can be achieved in an alternative way with lower compliance costs. Whether a measure promotes trade or not does not indicate whether it is justified.

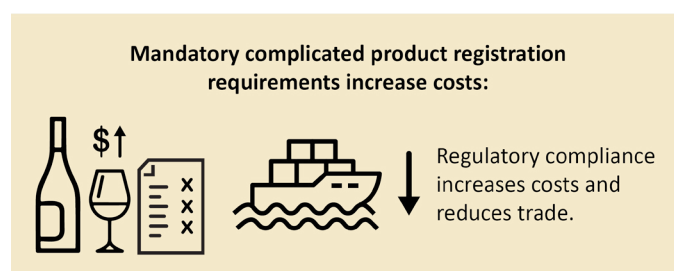
**Figure 3** Example of a trade-promoting NTM



## Trade policy measures can reduce trade

The cost of compliance with an importing country's NTM raises costs in the supply chain, reducing profitability and the supply of exports to that market. It can also raise the prices of goods faced by consumers in importing countries. When the increased costs outweigh any (if any) trade-promoting characteristics, an NTM reduces trade.

**Figure 4** Example of a trade-reducing NTM

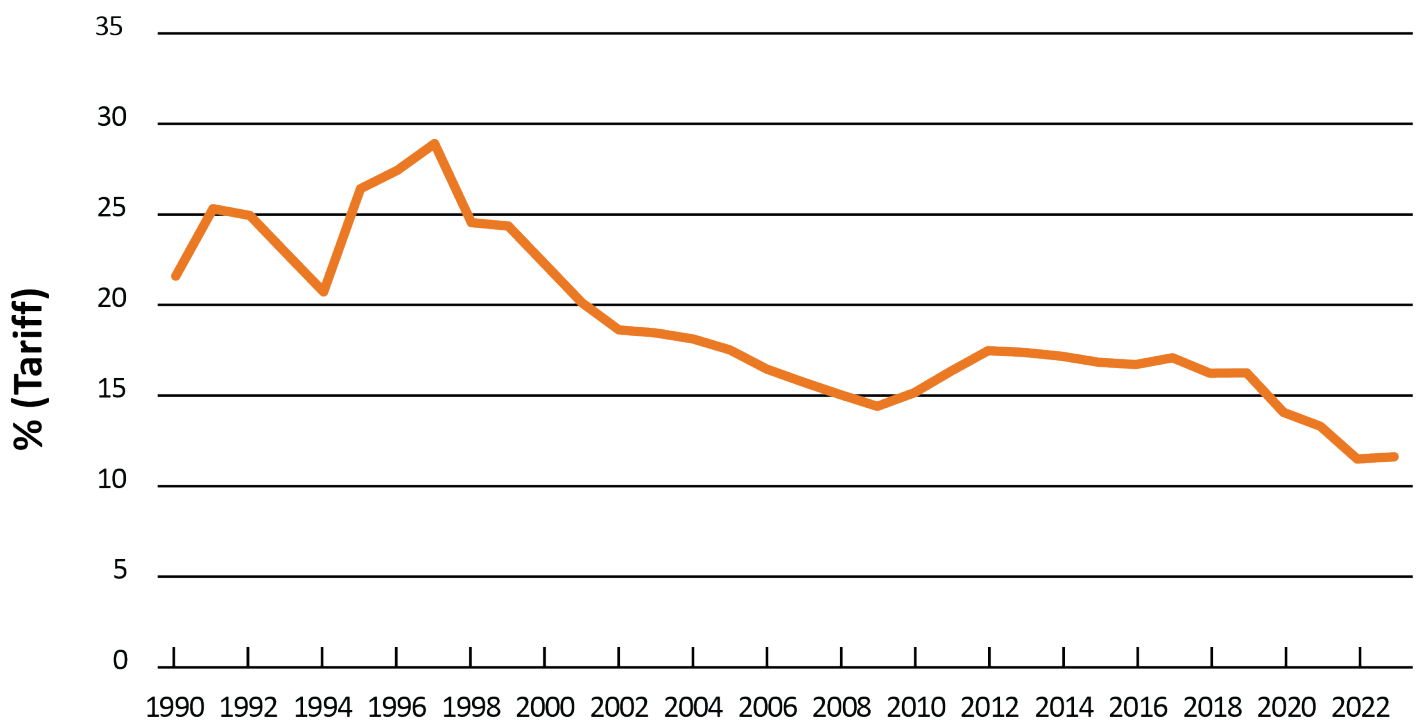




## Are NTMs replacing tariffs as trade barriers?

Since the completion of the World Trade Organization’s Uruguay Round of negotiations in 1994, average applied tariffs have fallen globally (Figure 5). This raises the question of whether NTMs are serving a protectionist purpose and replacing tariffs as a trade barrier. Answering this question requires quantification of the effect of NTMs on agricultural trade and comparing it to the effects of tariffs.

**Figure 5** Since the 1990s, average applied tariffs have fallen in agriculture



**Note:** Agriculture is defined using the definition in the WTO Agreement on Agriculture (1994). Methodology for the compilation of the tariffs dataset is available in Fell (2023) and additionally incorporates the Global System of Preferences. Simple averages of minimum tariffs on bilateral routes across each HS6 code are calculated, then simple averages for each HS chapter, then simple averages across each chapter for each reporting country, and then simple averages across countries. A 3-year moving average is used to smooth out sporadic data reporting for some countries.

Source: ABARES analysis of UNCTAD TRAINS tariff data available from WITS (2024), WTO ePing (2024)

## Quantification requires a robust methodology

Quantification of NTMs on a bilateral commodity basis is technically challenging, as most NTMs are imposed by an importing country multilaterally (i.e. the NTMs generally apply to all countries). When expanded to a bilateral basis, 97% of the measures in the UNCTAD Trains NTMs database are applied multilaterally. This poses a statistical challenge to isolating the effect of NTMs on a bilateral commodity basis, because other factors exist that also do not vary based on the importer at a given point in time (e.g. importer's GDP, importer's population, importer's WTO tariffs). This makes it difficult to isolate the effects of NTMs on trade from the effects of these other factors.

### Commodity-level quantification of NTMs, between individual exporters and importers, is technically challenging

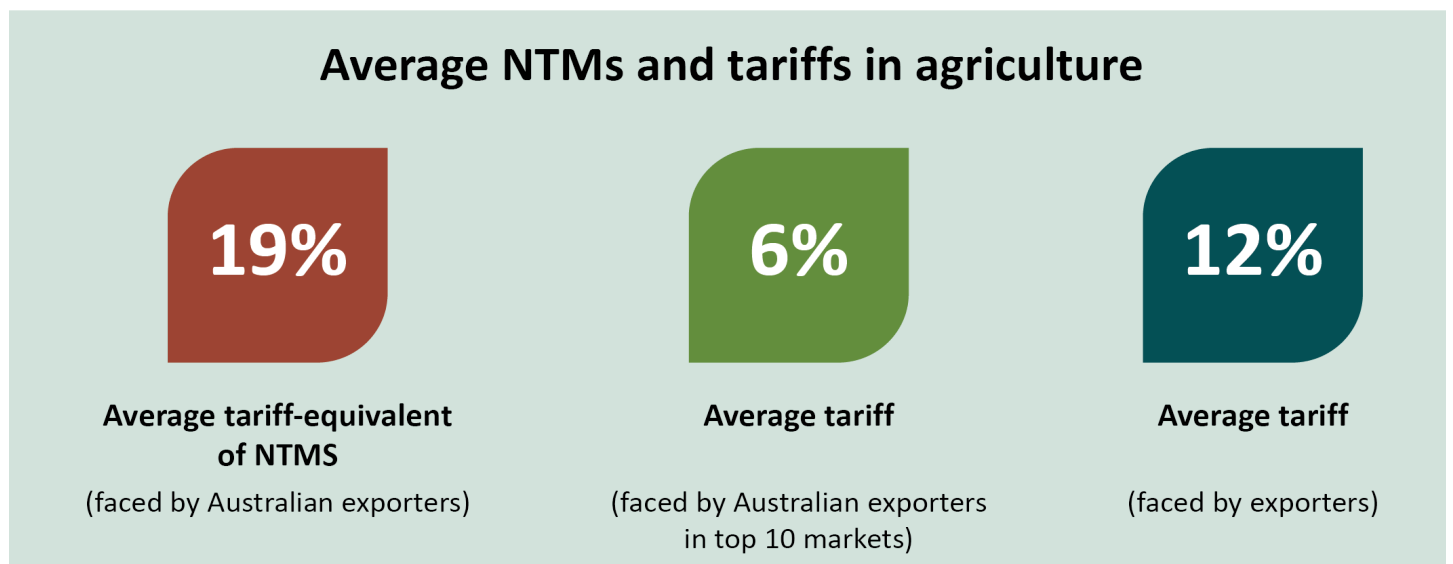
Recognising the challenges associated with the bilateral quantification of NTMs, ABARES developed an academically peer-reviewed and defensible quantification methodology (Fell & Duver 2023). The approach quantifies the trade effects of NTMs on a bilateral commodity basis and finds the equivalent tariff that achieves the same change in trade. Fell & Creed (2024) improved the approach, to better represent exporters' behavioural response to NTMs and improve the underlying dataset to account for a richer set of international tariff data that incorporates the Global System of Preferences (tariff arrangements that mostly apply to developing country exporters).

## Quantification reveals that NTMs in agriculture are restricting trade more than tariffs

The effect of NTMs on agricultural trade is significant. Recent ABARES analysis (Fell & Creed 2024) shows that by 2022 NTMs had an effect on Australian agricultural export quantities equivalent to a 19% tariff, on average (Figure 6) compared to a 6% average applied tariff into Australia's top 10 agricultural export markets, and a global applied average agricultural tariff of 12%. Caution is required with the interpretation of

tariff-equivalent estimates: these results do not suggest that prices rise 19% on average. Rather, the estimates refer to a tariff that would cause the same change in trade. NTMs would have a different influence on trade to a tariff, as NTMs affect behaviour in the supply chain, and different players in the supply chain could react differently to the way that an exporter responds to a tariff.

**Figure 6** NTMs appear to be reducing trade more than tariffs



**Note:** For average tariff estimates, agriculture is defined using the definition in the WTO Agreement on Agriculture (1994). Methodology for the compilation of the tariffs dataset is available in Fell (2023) and additionally incorporates the Global System of Preferences. Simple averages of minimum tariffs on bilateral routes across each HS6 code are calculated, then simple averages for each HS chapter, then simple averages across each chapter for each reporting country, and then simple averages across countries. For NTMs, the tariff-equivalents are averaged across grains, red meat and horticulture (represented by fruit and vegetables) equally.

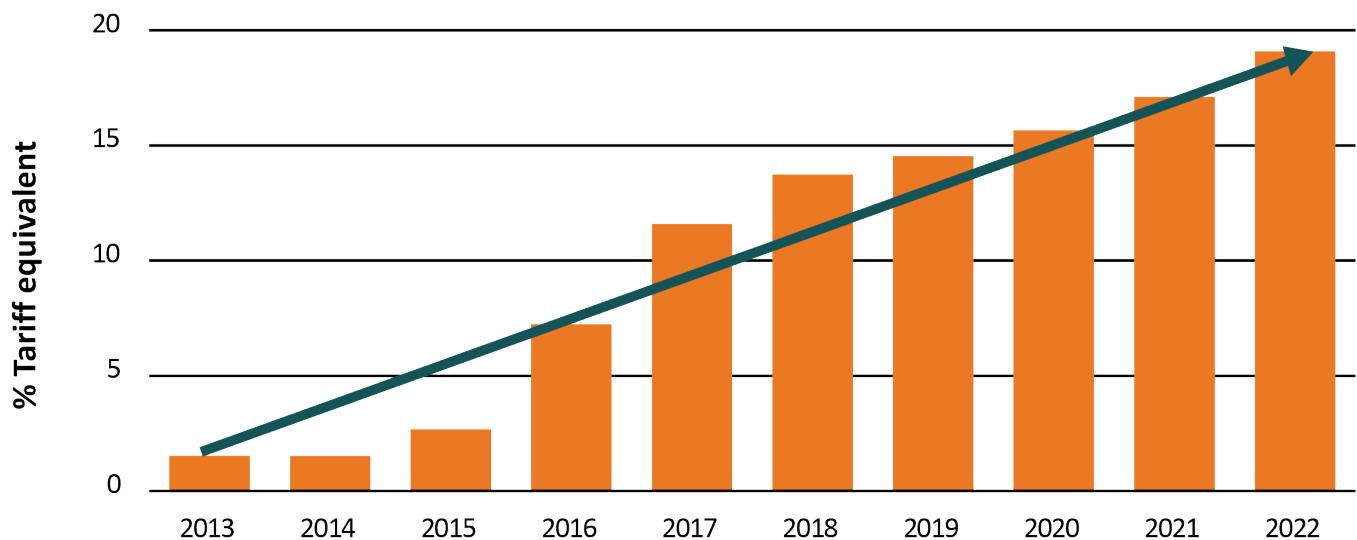
Source: ABARES analysis of UNCTAD TRAINS tariff data available from WITS (2024), WTO ePing (2024)

## The impact of NTMs is getting worse

Over time, the effect of NTMs on Australia's agricultural export quantities has been worsening (Figure 7). This may be due to the increased use of NTMs and/or a worsening trade impact of existing NTMs. The blue columns in Figure 8 show tariff-equivalents of NTMs when bilateral trade routes with no NTMs are excluded, and the orange columns show tariff-equivalents of NTMs when bilateral trade routes with and without NTMs are included. The blue columns rise slowly, suggesting a slow increase in NTM impact when NTMs already exist. The orange columns rise faster, suggesting that countries that were NTM-free have gradually introduced NTMs. This suggests that the stronger driving force behind a worsening NTM impact is the increasing number of NTMs.

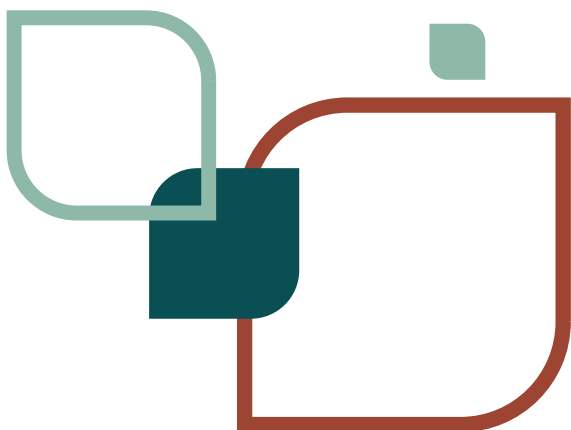


**Figure 7** The average tariff-equivalent of NTMs faced by Australian agricultural exporters has been increasing



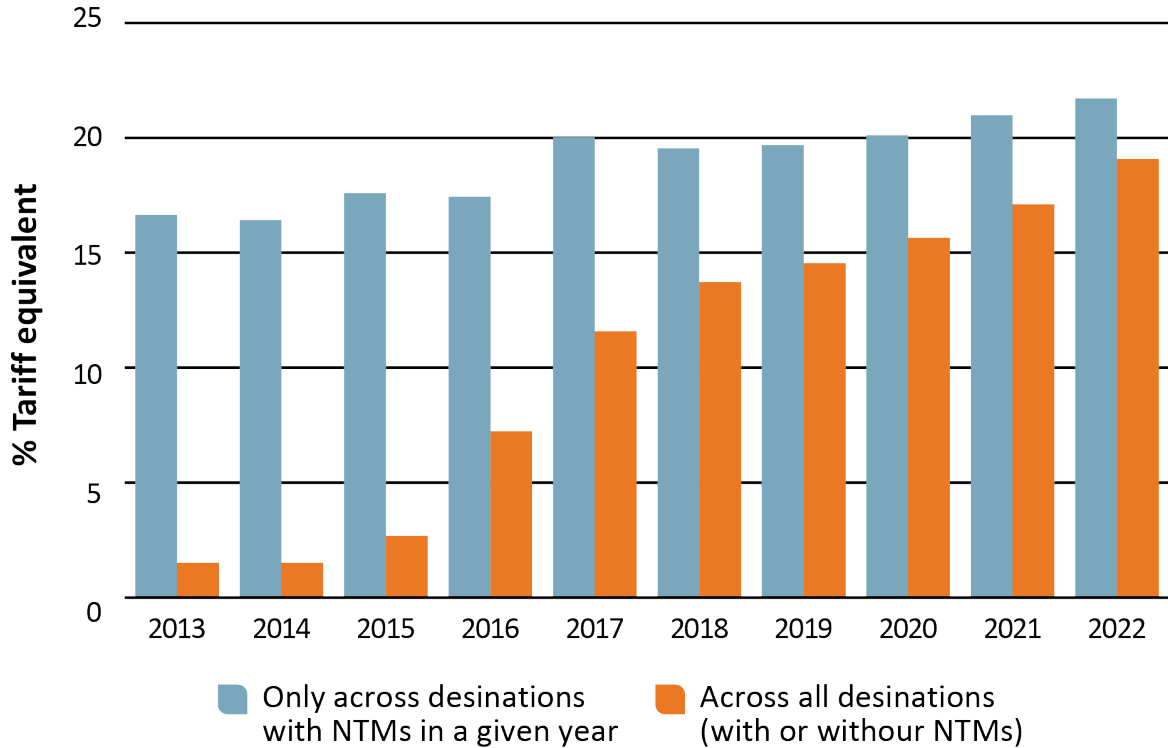
**Note:** Average across grains, red meat, fruit and vegetables, with constant weightings applied (one-third for grains, one-third for red meat, one-sixth for fruit, one-sixth for vegetables) to provide a rudimentary approximation of the share of Australian farm-gate production value across these commodities. The chart includes all commodities and bilateral routes, including routes where no NTMs exist.

Source: ABARES analysis



**Figure 8** Further analysis shows that most of the increase has been driven by additional countries introducing NTMs

**While average tariff-equivalents (across countries with NTMs) have increased slowly, impositions of new NTMs have boosted the average when calculated across countries**



**Note:** Average across grains, red meat, fruit and vegetables, with constant weightings applied (one-third for grains, one-third for red meat, one-sixth for fruit, one-sixth for vegetables) to approximate the share of Australian exports across those commodities.

Source: ABARES analysis

The worsening impact of NTMs over time presents strong implications: to combat the growing impact on agricultural exports, strong resourcing and sustained efforts will be required to combat NTMs. Successive governments have placed and continue to place priority on NTM (and NTB) reduction.

NTMs are often referred to as “technical market access”, and are not removed in traditional trade negotiations, which typically focus on tariffs and quotas. Technical market access negotiations can include biosecurity, food safety, testing, labelling and certification. In 2023–24, the Department of Agriculture, Fisheries and Forestry (DAFF) recorded a total of 88 technical market access achievements, which included opening 10 new markets, improving access to 44 markets, defending access (i.e. working to maintain access) to 29 markets and restoring access to 5 markets where it was previously blocked (DAFF 2024). DAFF and the Department of Foreign Affairs and Trade (DFAT) also pursued 13 agriculture-related matters in SPS and TBT committees at the World Trade Organization.

**Strong resourcing for technical market access negotiations will be required to combat the growth of NTMs**



## Removal of NTMs could bring multi-billion dollar benefits

The tariff-equivalents of NTMs above consider the effects on a single commodity and bilateral route in isolation to all other economic effects. They are reasonable summaries of the effects of an NTM, but they do not provide information on the economic benefits for Australia of their removal. Any benefits calculated from the removal of the NTMs need to account for broader economic effects like changes in demand, substitution between commodities, or trade diversion – where the removal of trade barriers on one route will lead to more trade on that route at the expense of another route.

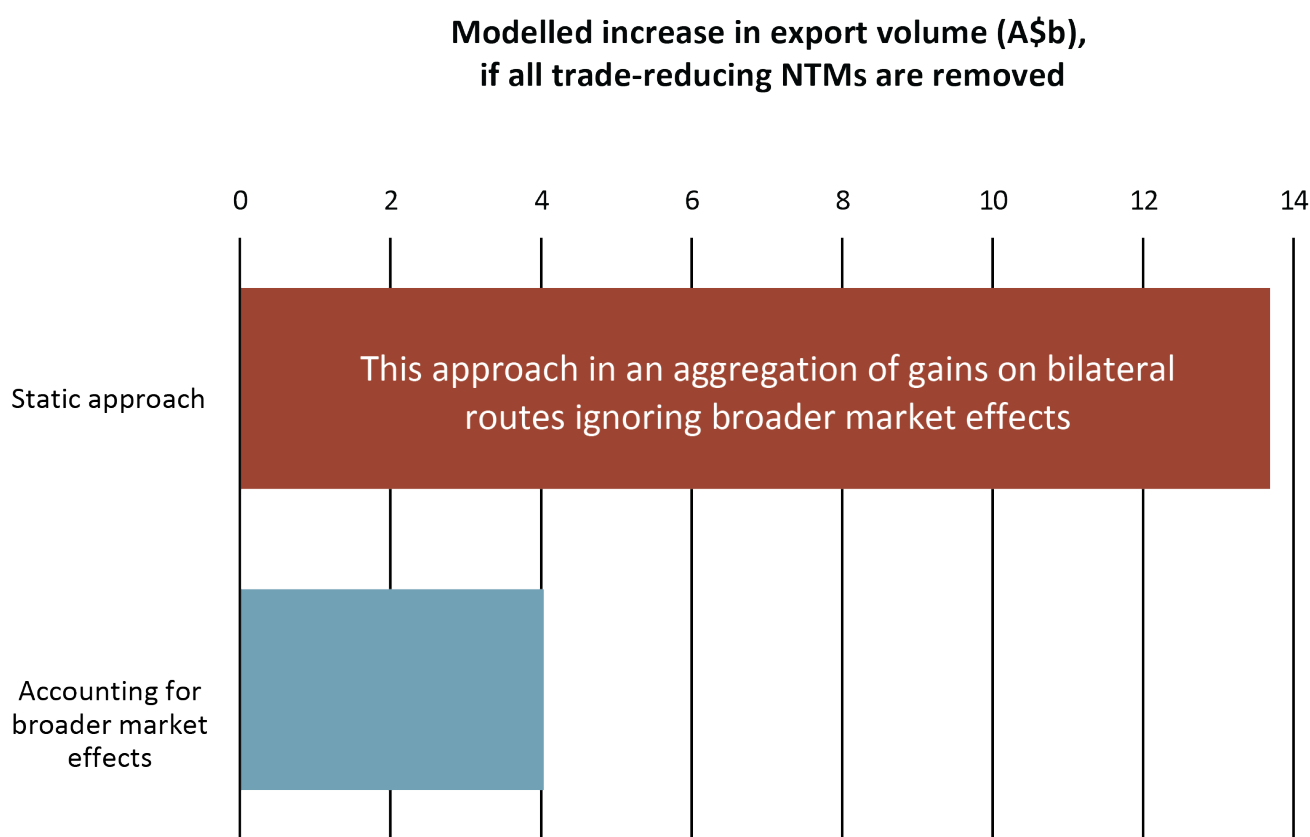
Cao (forthcoming) uses estimated tariff-equivalents of trade-reducing NTMs from Fell & Creed (2024) as an estimate for an increase in export service costs to measure the economic cost of trade-reducing NTMs (and therefore the economic benefits of their removals), while also taking into account

shifts in demand created by NTMs. Other approaches to the quantification of economic effects of NTM removal are discussed by Walmsley & Strutt (2021), Jafari & Britz (2018) and Fugazza & Maur (2008).

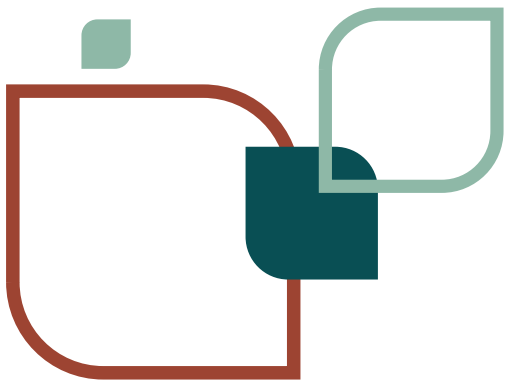
Cao (forthcoming) uses Australia’s grains, red meat, fruit and vegetable sectors to demonstrate that when trade-reducing NTMs are removed, benefits could be up to \$4 billion dollars annually over the medium term. The approach by Cao (forthcoming) takes into account the rising trade costs in the supply chain as well as the effects of NTM compliance on consumer demand.

The economic benefits from NTM removal are significant, but a comparison of approaches shows that the economic benefits need to be considered carefully. For example, the economic gain could be overestimated by \$9.7 billion (Figure 9) if second round effects are not considered such as those associated with trade diversion and competition for resources.

**Figure 9** Removal of NTMs can bring significant annual benefits, but can be easily overestimated



Source: Fell & Creed (2024), Cao (forthcoming). Note: Agricultural exports include red meat, grains, fruit and vegetable products. The estimate labelled ‘Accounting for broader market effects such as trade diversion’ from Cao (forthcoming) represents a medium term case.



## Economic benefits are only one input that inform prioritisation of negotiating resources

Negotiations to reduce or eliminate an NTM (if it is a barrier, and therefore an NTB) involves consideration of more factors than just the economic benefit of NTB reduction/elimination. For example, there is little benefit in pursuing the elimination of a large trade-reducing NTB if there is no chance of that NTB being removed. Considerations of a trade negotiator could include broad foreign policy objectives, economic benefit of reduction/elimination, government and/or sectoral market access priorities, likelihood of successful reduction/elimination, resources required for successful reduction/elimination and time required for reduction/elimination.

**Figure 10** A decision to enter negotiations on an NTB is multifaceted



## NTB reduction should remain a priority, supporting market access and diversification objectives

The adverse trade effects of NTBs in agriculture have worsened in the last decade. In agriculture, NTBs have significantly greater impact on exports than tariffs. Elimination or reduction of the compliance burden of NTBs could bring multi-billion dollar benefits to the agriculture sector. However, caution needs to be taken in the estimation of economic benefits to ensure that changes in demand, trade diversion and substitution effects are taken into account.

Resolving NTBs is a complex process requiring sustained strategic effort, often over several years. This work remains a priority across successive governments to bring real value to Australian agricultural exports. The reduction and/or elimination of NTBs supports diversification objectives by reducing the cost of doing business and by removing barriers to entry into new markets. Successive governments' continued strong resourcing to combat the growth of NTBs is critical to support Australian agricultural exporters.

## References

Cao, L, forthcoming, 'An approach to quantifying NTM impacts in CGE models', ABARES technical paper, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

DFAT 2024, Addressing non-tariff trade barriers, Department of Foreign Affairs and Trade, Canberra. Accessed 24 October 2024.

DAFF 2024, Market Access Achievements, Department of Agriculture, Fisheries and Forestry, Canberra. Accessed 24 October 2024.

ePing 2024, ePing SPS & TBT Platform, Collaboration of United Nations Department for Economic and Social Affairs, World Trade Organization and International Trade Centre. Accessed 24 October 2024.

Fell, J & Creed, C 2024, 'Non-tariff measures: a revised methodology for the quantification of bilateral trade effects of policy measures at a product level', ABARES technical paper, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

Fell, J & Duver, A 2023, 'Non-tariff measures: a methodology for the quantification of bilateral trade effects of policy measures at a product level', Applied Economics 56:36, 4374-4388, DOI: 10.1080/00036846.2023.2211336

Fugazza, M & Maur, JC 2008, 'Non-tariff barriers in CGE models: How useful for policy?', Journal of Policy Modelling, Vol. 30(3) (2008):475-490. DOI: <https://doi.org/10.1016/j.jpolmod.2007.10.001>

Jafari, Y & Britz, W 2018, 'Modelling heterogeneous firms and non-tariff measures in free trade agreements using Computable General Equilibrium', *Economic Modelling*, Vol. 73 (2018): 279–294. DOI: <https://doi.org/10.1016/j.econmod.2018.04.004>

UNCTAD 2024, Non-tariff measures data for researchers, United Nations Conference on Trade and Development, Geneva. Accessed 24 October 2024.

UNSD 2024, Methodology – Standard country or area codes for statistical use (M49), United Nations Statistics Division, New York. Accessed 24 October 2024.

Walmsley, T & Strutt, A 2021, A Comparison of Approaches to Modelling Non-Tariff Measures, *Journal of Global Economic Analysis*, Vol. 6 (2021) No. 1:1–33. DOI: <https://doi.org/10.21642/JGEA.060101AF>

WITS 2024, Bulk Download (TRAINS), World Integrated Trade Solution, World Bank, Washington DC. Accessed 24 October 2024.

WTO 1994, 'Agreement on Agriculture' in Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Parties to the Marrakesh Agreement, Marrakesh, Morocco.

WTO Trade Concerns 2024, Trade Concerns Database, World Trade Organization, Geneva. Accessed 24 October 2024.

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