



Quantifying the costs of non-tariff measures in the Asia-Pacific region

Initial estimates

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Authorship

Each year NZIER devotes resources to undertake and make freely available economic research and thinking aimed at promoting a better understanding of New Zealand's important economic challenges. This paper was funded as part of this public good research programme.

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All opinions and any omissions or errors in this report are those of the authors alone.



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Key points

Asia-Pacific trade is characterised by the increased use of non-tariff measures

- As tariff levels fall over time, the use of non-tariff measures (NTMs) has become more common in the Asia-Pacific region.
- NTMs are regulatory tools, other than standard border tariffs, that can have potential economic effects on trade – either a decrease in quantities traded, an increase in their price, or some combination of both.
- The total number of NTMs within APEC has increased by 74% from 814 in 2004 to 1,414 in 2015.

All NTMs impose costs on businesses and households

- While some NTMs are put in place for legitimate public policy reasons, such as consumer safety or for protecting human, animal and plant health, others are used for more nefarious, intentionally trade-distorting purposes.
- Even the legitimate NTMs impose costs on domestic and foreign firms and households, which can often outweigh their domestic welfare benefits.
- Asia-Pacific economic integration is characterised by multi-country Global Value Chains, and the costs of NTMs accumulate along these chains
- Reducing the costs of NTMs is therefore important for lowering firms' transaction costs and improving competitiveness.
- Ultimately this will benefit consumers through lower prices for traded goods and services.

NTMs in the APEC region are three times as costly as tariffs; imposing costs of US\$790 billion per year

- We estimate that the *ad valorem equivalent* of NTMs in APEC is 9.7%, compared to an average APEC tariff of 2.9%.
- NTMs are particularly costly in sectors like dairy, rice, meat and horticultural products.
- NTMs cost APEC economies some US\$790 billion each year, around three times as much as tariffs.

New Zealand's exporters face NTM costs of US\$5.9 billion

- The overall cost of NTMs on New Zealand's primary sector exports to APEC economies is US\$4.7 billion (based on 2011 trade). For our overall export portfolio, the cost is US\$5.9 billion.
- The vast majority of these costs are imposed on the dairy (US\$2.7 billion), beef (US\$768 million) and food products sectors (US\$717 million).
- Our initial estimates of the costs of NTMs point to the potential gains that could be made through researchers and policymakers more proactively addressing the most trade-distorting, discriminatory and hence welfare-reducing NTMs.

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1. Objectives and scope

1.1. Origin of this analysis

NZIER was engaged by the New Zealand Ministry of Foreign Affairs and Trade to provide technical assistance to feed into New Zealand's contribution to the APEC 'Collective Strategic Study on Issues related to the Realisation of the Free Trade Area of the Asia Pacific'. The focus of this assistance was on quantifying the costs of non-tariff measures in the APEC region.

1.2. What is a non-tariff measure?

Non-tariff measures (NTMs) are regulatory tools, other than standard border tariffs, that can have potential economic effects on trade. These effects are either a decrease in quantities traded, an increase in their price, or some combination of both.

Common NTMs include:

- Prohibitions
- Quotas
- Sanitary and phytosanitary (SPS) measures
- Technical Barriers to Trade (TBT)
- Pre-shipment inspection.

1.3. Why are non-tariff measures used by governments?

NTMs are often imposed by a government for genuine policy reasons, such as protecting human, plant or animal life or health (mainly SPS measures) or protecting the environment and consumer safety (mainly TBT) or even national security.

As such, these measures can be seen as delivering benefits in terms of domestic welfare gains, which at least partly compensate for the additional costs that they impose on all other businesses and consumers.

Other NTMs are used for more nefarious purposes – largely to protect domestic producers from international competition, much in the same way that punitive tariffs do. These are often referred to as non-tariff barriers or NTBs.

Well-known examples of the use of NTBs in the New Zealand context are the restrictive quarantine measures that the Australian government had until recently kept in place since 1921 to protect its domestic apple sector from the risk of imported fireblight (a bacterial disease discovered in New Zealand in 1919) and Indonesia's use of quota restrictions on imports of beef since 2010 to promote domestic self-sufficiency in beef production.

The delineation between an NTM and an NTB is nearly always blurry. One country's legitimate policy justification is another's protectionism in disguise. This makes establishing the costs and benefits, and apportioning them across economies, especially challenging.

1.4. Our objective: add some empirical estimates into the NTMs debate

NTMs are becoming increasingly worrisome for businesses, including New Zealand exporters. As tariffs have decreased over time, negotiated down through multilateral, regional or bilateral trade agreements, some governments have sought to use NTMs instead as a way of creating domestic ‘policy space’. Anecdotal evidence is that these NTMs are imposing considerable costs on exporters, reducing trade volumes and eating into margins.

As such, there is renewed research and policy focus on NTMs, including in fora such as APEC.

While much excellent work has been done recently to classify and collate the number and types of NTMs in place by country, at a very detailed level of product disaggregation (right down to tariff line level), little empirical work has been done of quantifying the potential costs of NTMs.

Our paper aims to present some initial estimates of the potential costs of NTMs in the Asia-Pacific, by sector and by economy. We hope that it generates further debate and discussion, given the importance of the topic and the paucity of empirical estimates currently available.

2. The regional trade context

2.1. Our focus is on the APEC region

While the prevalence of NTMs is a global phenomenon, our analysis focuses on the Asia-Pacific region – and APEC economies in particular – because this region is likely to be the driving force behind further trade liberalisation and regional economic integration in coming years.

The multilateral liberalisation mechanism has largely ground to a halt, despite recent positive signs on issues such as export subsidies, trade in services and trade facilitation. As a result, economies are looking to regional ‘mega-FTAs’ to secure additional market access and deeper economic relationships.

While the Trans-Pacific Partnership (TPP) now seems unlikely to proceed as initially envisaged due to the election of Donald Trump as US President, some alternative version of the agreement may well proceed, comprising the remaining 11 non-US members. In addition, the Regional Comprehensive Economic Partnership (RCEP), an ASEAN-led initiative, is likely to attract more attention as a vehicle towards regional economic integration.

Both the revised version of TPP and RCEP are seen as potential ‘pathways’ to a Free Trade Area of the Asia Pacific (FTAAP), which APEC economies have been talking about and gradually moving towards for some years now. APEC’s membership is a nice balance of sufficient scale to be worthwhile without bringing too many countries to the table and thus watering down potential ambition and progress.

2.2. GVCs are driving Asia-Pacific economic integration...

Modern regional or global economic integration is characterised by fragmented international production networks, where intermediate goods and services cross numerous borders before ending up with the eventual user.¹

Modern economic integration looks very different now to how it did even two decades ago. APEC Leaders stated in 2014 that Global Value Chains (GVCs) “have become a dominant feature of the global economy and offer new prospects for growth, competitiveness and job creation for APEC economies at all levels of development”.²

2.3. ...which highlights the importance of removing costs from supply chains

In a GVC-dominated regional economy, like the APEC region, transaction costs imposed by policy and non-policy factors accumulate along supply chains. By the

¹ NZPECC (2015).

² APEC Leaders (2014).

time the final good or service is purchased by the end user, these accumulated costs will have the effect of pushing up prices.³

This has two key impacts:

- (i) Falls in households' real purchasing power and thus living standards
- (ii) Decreases in APEC businesses' competitiveness relative to non-APEC businesses.

For both of these reasons, it makes economic sense for policymakers to reduce these accumulated transaction costs as much as possible without compromising legitimate policy objectives. The aim should be to remove the grit from APEC's economic engine, allowing it to run more smoothly.

This theme has been picked up on by APEC business leaders and influencers in the PECC 2015 'State of trade in the region' survey, which has traditionally recommended that APEC focus on promoting regional and global trade liberalisation. In this year's survey, however, the top 5 issues for APEC to address were heavily GVC-centric:

- The facilitation of participation of SMEs in global value chains
- The achievement of the Bogor Goals and the Free Trade Area of the Asia-Pacific (FTAAP)
- Services sector reforms and liberalization
- The design of trade policy in response to global value chains
- How economies can move to upgrade their participation in global value chains

These findings highlight the critical importance of the services sector to trade in the 21st century. Moreover, analytical work is also showing the importance of competitive service supply in goods and agriculture as well because of the way in which global value chains operate.⁴

In recognition of the importance of GVCs and reducing transaction costs in the APEC region, APEC Leaders endorsed *The APEC Strategic Blueprint for Promoting Global Value Chains Development and Cooperation* in 2014.

The Blueprint has ten key initiatives under way, recognising that an "overall policy direction guiding improved cooperation and a more focused GVC evolution is essential to facilitating sustainable, inclusive and balanced growth in the Asia-Pacific region".⁵ Progress to date has been "remarkable", according to a 2015 Progress Report.

³ WTO (2012, p140).

⁴ PECC (2015).

⁵ APEC (2015). The ten initiatives are:

- Addressing trade and investment issues that impact GVCs
- Cooperating on improving statistics related to GVCs
- Realizing the critical role of trade in service within GVCs
- Enabling developing economies to better participate in GVCs
- Assisting SMEs to benefit from GVCs
- Improving the investment climate for GVCs Development
- Adopting effective trade facilitation measures
- Enhancing the resiliency of GVCs
- Encouraging public-private partnerships for GVCs
- Strengthening collaboration with other stakeholders on GVCs.

2.4. Non-tariff measures are a key source of higher transactions costs

A core aspect of reducing transaction costs in APEC is addressing non-tariff measures (NTMs). These are “policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both”.⁶

In the past, NTMs were thought of in primarily terms of quantitative restrictions on trade, such as quotas, voluntary export restraints, and import licensing, which is reflected in the non-exhaustive list of NTMs that appears in the Osaka Action Agenda. There is now recognition that NTMs include a broader range of policies applied to goods and services that impose transactions costs along supply chains.⁷

2.5. NTMs take many forms, and serve many purposes

NTMs can comprise technical measures such as sanitary or environmental protection measures, quotas, price controls, export restrictions, contingent trade protective measures, and also other behind-the-border measures, such as competition, trade-related investment measures, government procurement or distribution restrictions.

It is important to note that NTMs vary considerably in terms of their impact on the business environment. Some are legitimately imposed for the purpose of protecting public health, safety, the environment, etc. Others act more like traditional trade barriers, raising costs for businesses and households.

The Marshall School suggests that NTMs be conceptualised in quadrants for the purpose of considering how best to address them (see Figure 1 overleaf).⁸

While the inclination of policymakers may be to focus on those trade-distorting NTMs in the top right hand quadrant, focusing specifically on them may deflect energy and attention away from identifying areas where significant improvements can be made in reducing transaction costs associated with all types of NTMs.

As always, the line between “necessary” and “unnecessary” is blurry. It will vary by economy, by sector and over time. But it is important to remember that all NTMs involve multiple trade-offs.

They may support legitimate public policy objectives such as consumer safety or animal health. Yet they also distort trade away from the economically optimal level, by definition. This can harm both domestic welfare (i.e. they must pay higher prices or have less choice) and the welfare of other economies (because exporters can’t fully exploit their comparative advantages).

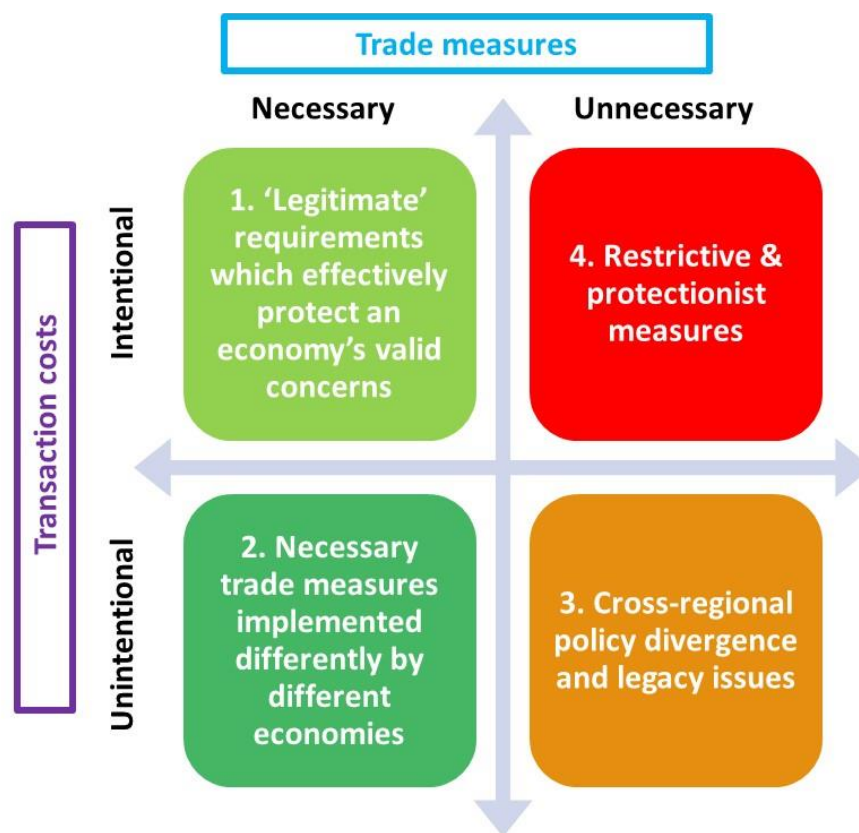
The aim then, for an institution like APEC, should be to highlight these trade-offs and push for NTMs to be used in a way that is as least trade-distorting and overall welfare –reducing as possible, while respecting the sovereign rights of governments to legislate for legitimate policy purposes.

⁶ UNCTAD (2009).

⁷ See UNCTAD (2013). UNCTAD’s MAST classification provides a good overview of the wide range of NTMs now used. The MAST classification has been adopted by UNCTAD, ITC and WTO.

⁸ Marshall School (2008, p.20).

Figure 1 Non-tariff measures and transaction costs



Quadrant 1: Necessary and intentional NTMs – put in place to protect against known risks and threats. Accepted as legitimate by trading partners.

Quadrant 2: Necessary and unintentional NTMs – initially put in place to protect against known risks and threats, but now applied differently by each economy. They become unintentional non-trade barriers creating unnecessary transaction costs.

Quadrant 3: Unnecessary and unintentional NTMs – designed to address risks, but applied inconsistently between trading partners. Also includes obsolete NTMs that remain in place due to bureaucratic inertia.

Quadrant 4: Intentional but unnecessary – protectionist non-trade barriers. Their public policy legitimacy is debated by trading partners.

Source: Adapted from Marshall School (2008)

2.6. As tariffs have decreased, NTMs have grown in importance

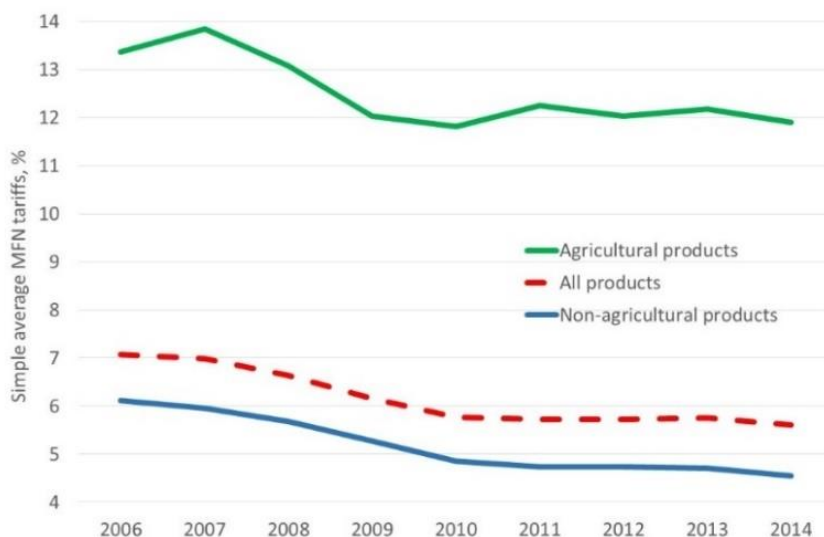
The proliferation of FTAs in APEC and the wider global economy has seen global tariffs fall steadily in recent decades. The average global tariff is now around 9%, down from around 11% twenty years ago.⁹ The average MFN¹⁰ tariff in APEC has slowly fallen from 7% in 2006 to 5.6% in 2014.

⁹ WTO (2014).

¹⁰ The Most Favoured Nation (MFN) tariff is the rate applied to imports into an economy from markets with whom they do not have a preferential trade agreement. The average APEC effective applied rate, which takes into account tariff concessions under such trade agreements is significantly lower than these MFN rates, at around 2.9%, as discussed later.

Figure 2 Declining tariffs in APEC – but agriculture still lags

Simple average of MFN tariffs in APEC



Source: World Bank Key Indicators Database

But having made progress on tariff liberalisation, policymakers' attention is now increasingly shifting to addressing NTMs.¹¹

Figure 3 overleaf shows trends in the use of NTMs within the APEC region based on the frequency of measures or notifications by governments in the fields covered the WTO's Integrated Trade Intelligence Portal (I-TIP).¹² Sanitary and phytosanitary (largely falling on agricultural trade) and Technical barriers (largely in manufactures trade) are by far the most commonly used NTMs within APEC.

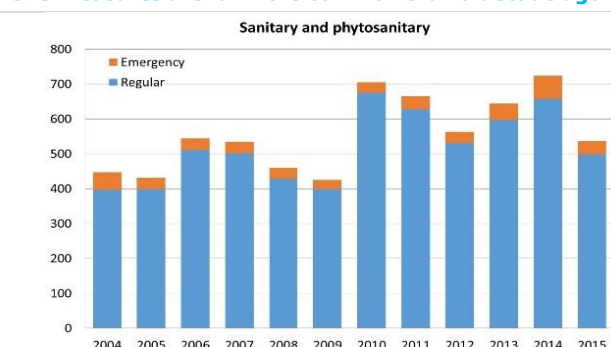
The total number of NTMs within APEC increased by 74% from 814 in 2004 to 1,414 in 2015. The use of NTMs rose particularly sharply in the aftermath of the Global Financial Crisis. Similar patterns have been observed in the ASEAN region, with the number of NTMs increasing from 1,634 measures to 5,975 measures over the 2000-2015 period (Ing et al, 2015).

¹¹ ASEAN (2015).

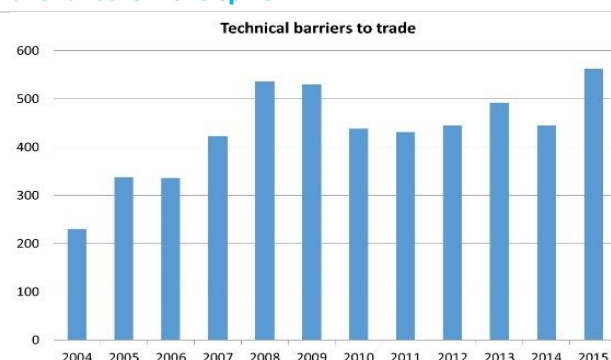
¹² The WTO Integrated Trade Intelligence Portal (I-TIP) is the most complete NTMs database available, covering: antidumping (ADP), countervailing (CV), quantitative restrictions (QR), safeguards (SG), special safeguards (SSG), sanitary and phytosanitary measures (SPS), and technical barriers to trade (TBT). We do not explore trade remedies such as anti-dumping, countervailing duties or safeguards. UNCTAD (2015, pp. 19-21) briefly discusses trends in these measures at a global level and finds that the number of new measures initiated has averaged around 200 per year since 2004. However, this spiked to over 300 in 2013, before settling down to around 240. UNCTAD cites the growing use of trade remedies by developing countries as a key driver behind the recent spike.

Figure 3 Overview of non-tariff measures in the APEC region

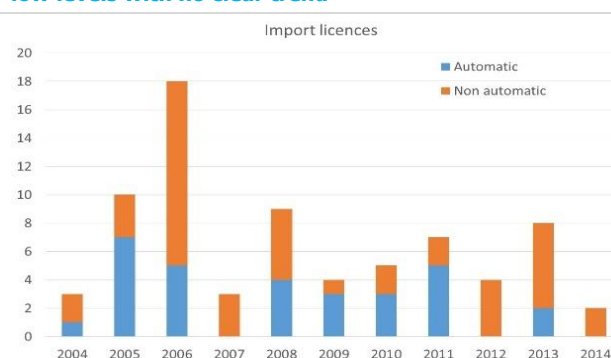
SPS measures are far more common than a decade ago



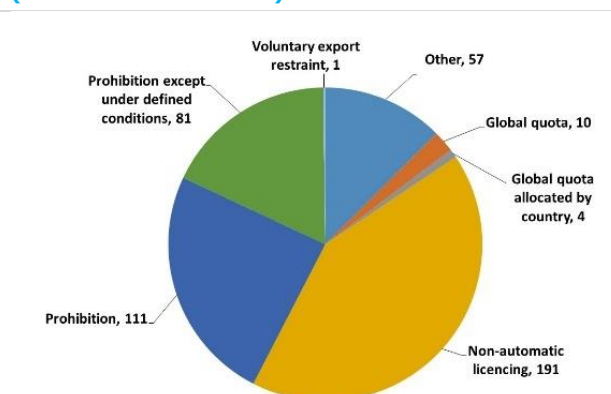
TBT measures trended up from 2004-2008; but stabilised until another 2015 spike



Automatic and non-automatic import licences fluctuate at low levels with no clear trend



455 quantitative restrictions were used in from 2012-2015 (no time series available)



Source: I-TIP, WTO, NZIER

2.7. Many international organisations have highlighted the increasing use of NTMs

While the increasing use of NTMs is a clear trend within APEC, the precise reasons for their proliferation are less clear.

Declining tariff protection has certainly led some economies to make more creative and extensive use of NTMs for protectionist purposes. Yet it should be emphasised that economies also face pressures to implement NTMs to deal with new products, new health and safety risks, and emerging issues, such as environmental degradation.

The Marshall School (2008) suggests a number of factors contributing to the proliferation of NTMs, including the lack of harmonised standards leading economies to develop their own conflicting standards; the lack of accessibility and transparency of requirements, leading to duplicatory regulation; and the involvement of multiple regulatory agencies, resulting in inconsistencies of administration of policies and increasing the difficulty of finding and interpreting import requirements.

While there is little hard evidence to explain precisely why NTMs are becoming more prevalent, various international organisations are grappling with this shift, in addition to APEC:

- The OECD notes “One reason may be that the reduction or elimination of import tariffs has made NTBs relatively more conspicuous, and for some sectors the main form of government intervention in trade today consists of such barriers” (Love and Lattimore, 2009).
- APEC’s Bogor Goals Progress Report (2014) reported that new NTMs have been introduced in recent years and noted that the accumulation of NTMs along supply chains continues to restrict trade.
- UNCTAD (2015, p. 1) argues that the proliferation of NTMs plays a crucial role in shaping global trade patterns: “with falling tariffs, non-tariff measures have moved to the forefront of trade policymaking”. It notes that the contribution of NTMs to restricting market access globally is more than twice that of tariffs.

2.8. NTMs impose costs on APEC economies’ firms; and ultimately households bear the brunt

From an economic standpoint, some NTMs such as quotas, voluntary export restraints and non-automatic licensing unambiguously lower import volumes. Others such as some TBT and SPS measures may have trade- and welfare-enhancing effects that outweigh the cost of compliance.¹³ Similarly, finance, anti-competitive and investment measures have indirect effects on trade which are difficult to assess.

Developing economies in particular are more likely to experience the negative effects of NTMs because the average cost of certification, verification bodies and export services can be higher in developing economies.¹⁴ Production process technology may also be less advanced and trade-related infrastructure weak. As a result, more

¹³ The distribution of these costs and benefits is not always equitable, however. It is important to reflect on the compliance costs for all economies in meeting any NTM, not just the country imposing it.

¹⁴ Rial (2014, p.7).

rigorous administrative procedures are often applied to imports originating in developing economies.¹⁵

In addition, capability, capacity and regulatory coherence challenges may be more prevalent in developing economies, which makes their imports costlier. This further hinders the integration of developing economies into regional supply chains.

NTMs also affect the cost of living, and thus real incomes and poverty, potentially “working at cross-purposes with poverty alleviation policies”.¹⁶

¹⁵ UNCTAD (2013, p.viii).

¹⁶ Cadot, Munadi and Ing (2013, p27).

3. Estimating the costs of NTMs in APEC

3.1. Methodology

While counts of NTMs provides an indication of how frequently such measures are used, from an economic perspective we are more interested in the extent to which they impose costs on businesses and households. This requires moving beyond counts towards quantifying how these measures impact on trade flows.

A number of attempts have been made to assess the impacts of NTMs by estimating their *ad valorem equivalent* (AVE). This enables comparison with levels of tariff protection and better assessment of the welfare implications of various trade policy measures.¹⁷

In this paper, we take AVE data by sector and economy from Adler and Hufbauer (2009) which is itself based on the AVEs created by Kee et al. (2005) and from various other studies. The types of NTMs in the analysis include non-automatic licenses, quotas, prohibitions, administrative pricing, voluntary export price restraints, variable charges, monopolistic measures, technical regulations, and domestic support subsidies. We focus on the APEC region.¹⁸

AVE estimates of NTMs are made for one year for each economy using data from the most recent year available. The underlying NTMs data roughly corresponds to the year 2000 for every economy. While there have been some more recent economy-specific updates completed by UNCTAD, and more are planned, there is no more recent data that we are aware of that covers all APEC economies and sectors.¹⁹

Note that estimated AVEs of Australian NTMs are used as a proxy for New Zealand NTM data. This is not ideal, but there is a lack of comprehensive New Zealand-specific data on AVEs. Similarly, Brazil is used as a proxy for Chile, Thailand for Vietnam and European Union for Russia.²⁰

For the smaller countries, these assumptions will have little material impact on the APEC average due to their low trade-weighting in the calculations. So even if the actual AVEs in these countries are quite different from those assumed, it will not make a significant difference when they are averaged out across the APEC region.

We then apply the AVEs from the literature to the GTAP database of bilateral imports at market prices.

¹⁷ WTO (2012).

¹⁸ Recall that the choice of region reflects the purpose of our initial research, which was to inform New Zealand's contribution to the 2016 APEC Collective Strategic Study on the Free Trade Area of the Asia Pacific.

¹⁹ We acknowledge that there is a risk that the AVEs we use could now be different to these estimates. The AVE of NTMs in a sector is a function of the count and severity/cost of the various NTMs in place. There does not seem to be any significant decrease in their use (i.e. count) within APEC, as shown by

Figure 3 above. And the limited available evidence suggests that the severity of NTMs within APEC is *increasing*, rather than decreasing.

²⁰ While the AVEs in percentage terms are assumed to be the same, the dollar costs of NTMs in Russia will differ to those in the EU, however, due to the different import profiles of the economies.

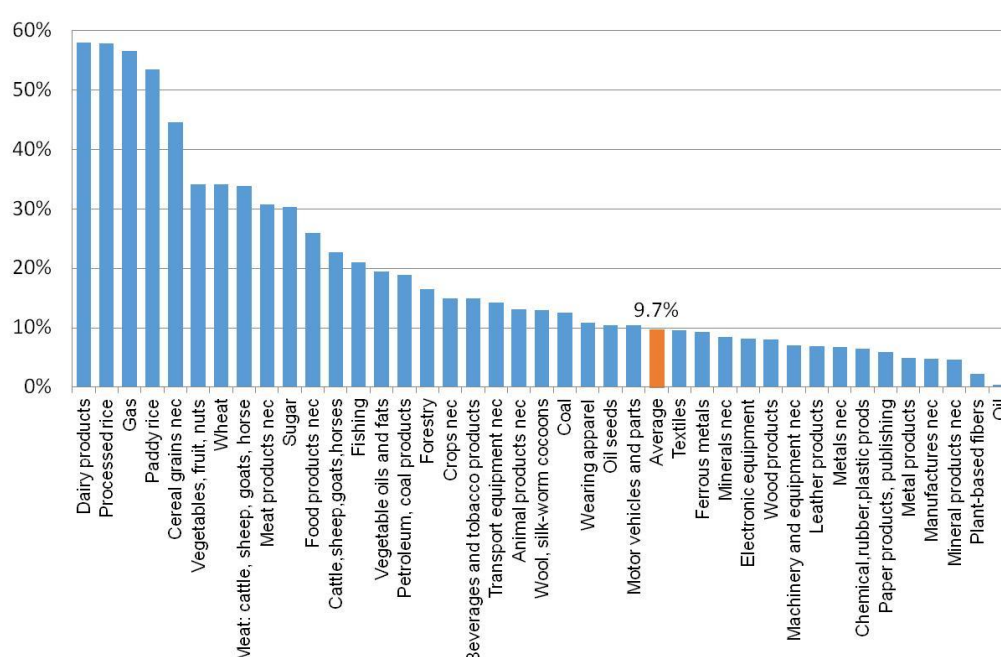
3.2. The average AVE of NTMs in APEC is 9.7%

Using the methodology above, we estimate the weighted average AVE of NTMs in the APEC region to be 9.7%. This is similar to Cadot and Gourdan's (2015) estimate of the global average AVE of 8.8%.^{21 22}

Figure 4 shows the AVEs of NTMs within the APEC region by sector. The largest AVEs are in the highly-protected agricultural sectors (especially dairy, cereals and horticulture, meat and rice) and the heavily-regulated gas sector.

Figure 4 Ad valorem equivalent of NTMs in the APEC region

Percentage of import values



Source: NZIER

Figure 5 shows the trade-weighted AVEs by economy. These figures should be interpreted as the AVE of the NTMs that one economy imposes on its imports from all other economies.

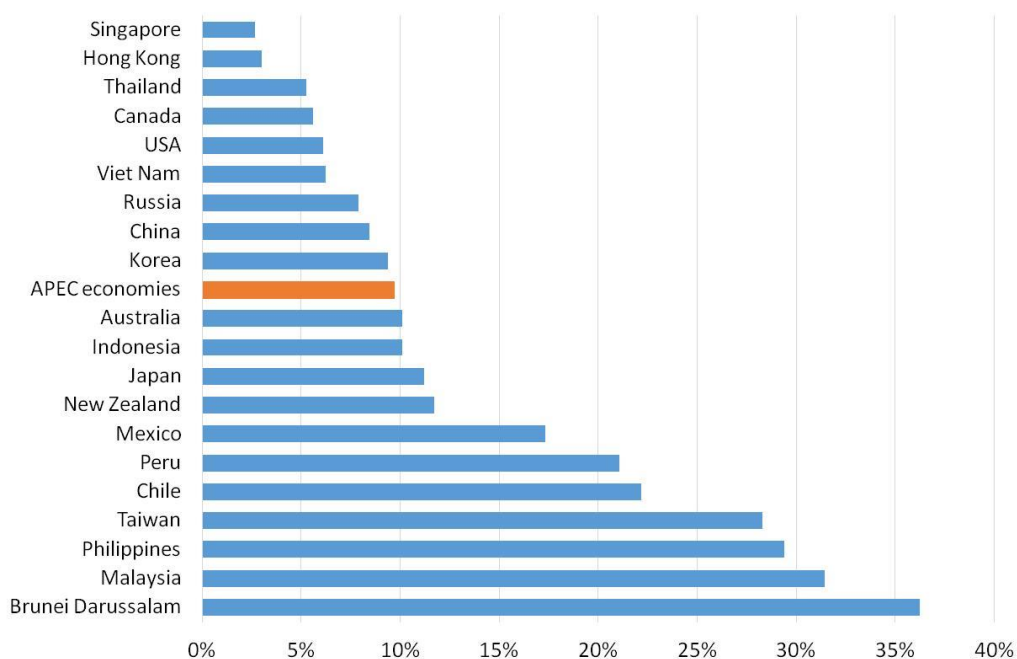
The chart also shows the dollar costs that an economy's NTMs impose on its imports. This clearly highlights the importance of size – small average AVEs applied across a large base of imports result in significant aggregate costs.

²¹ The differences in estimates will be due to the period analysed (Cadot and Gourdan use 2000-2008, we use 2011); commodity aggregation (Cadot and Gourdan use 20 commodities, we use 41); and country coverage (Cadot and Gourdan look at the global average, we look at APEC only).

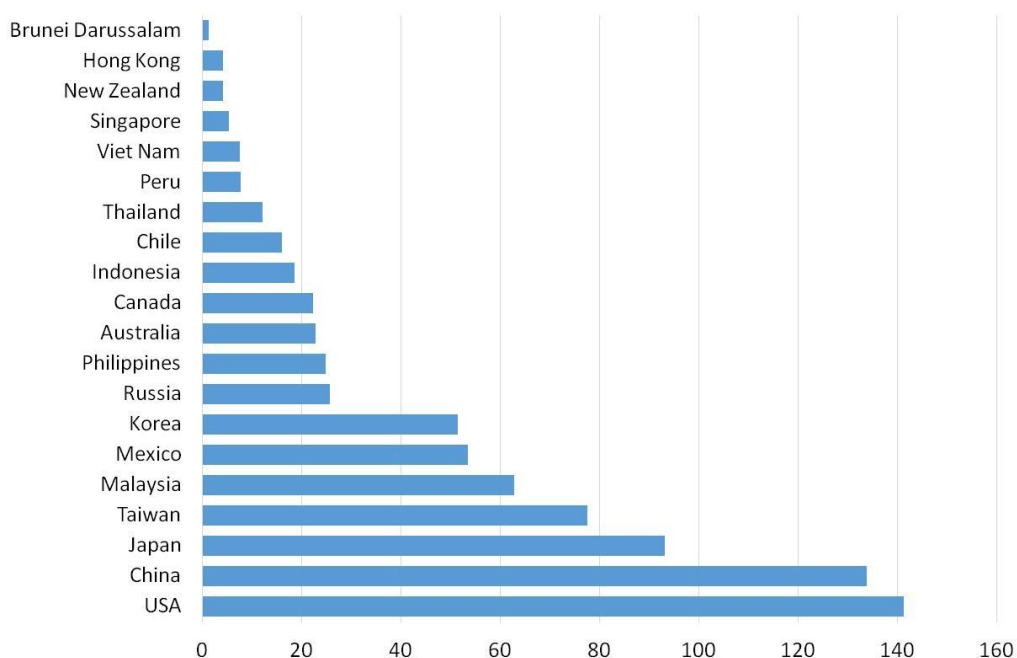
²² As noted above, due to data gaps, we needed to make some fairly crude assumptions for some economies on the level of their NTMs. However, the results are robust to changes in these assumptions, at least for the smaller economies in the sample. By way of illustration, even if Chile's and New Zealand's AVEs were twice as high as those assumed in our analysis, the average APEC NTM AVE would increase only marginally from 9.7% to 9.9%. If Russia's NTMs were twice as high as those assumed here, the average APEC NTM AVE would rise to 10%.

Figure 5 NTMs AVEs and costs by economy

AVEs, as percentage of import values



Costs of NTMs by imposing economy, \$US billions, 2011



Source: NZIER

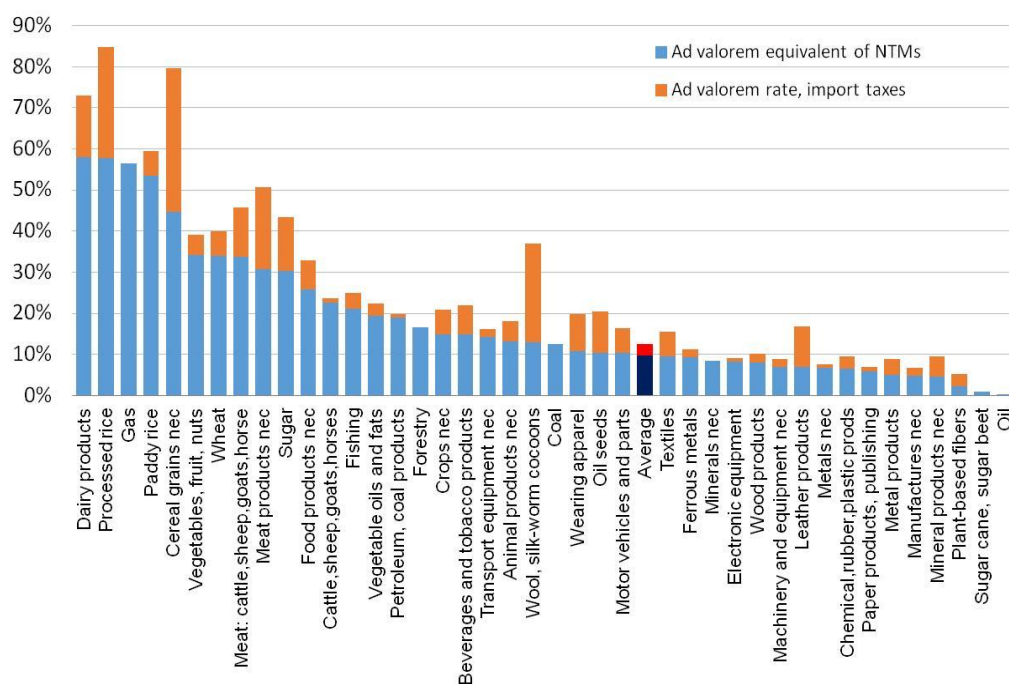
3.3. NTMs raise transaction costs three times as much as tariffs in APEC

As a comparison to the 9.7% average AVE of NTMs estimated above, the average applied tariff rate in the APEC region is 2.9%, indicating that NTMs are likely to have much more significant effects on trade than tariffs in the APEC region.²³

Figure 6 compares APEC AVEs of NTMs with average applied tariff rates, by sector. The tariffs and NTMs are deliberately stacked in this way because the two trade policy approaches both impose costs on trade at the same time.

As can be seen, the AVE of NTMs is often a multiple of the average tariff rates. For example, in the dairy sector, the average tariff is 15% in the APEC region, but the AVE of NTMs in that sector is around 58%.

Figure 6 AVEs of NTMs and tariff rates in the APEC region



Source: NZIER

3.4. Translating the AVEs into dollar figures, NTMs cost the APEC region US\$790 billion

Figure 7 shows the estimated cost of NTMs by sector in terms of APEC imports. The total cost of NTMs amounts to around US\$790 billion, based on our estimates of AVEs by sector and economy and 2011 trade flows from the GTAP v9 database.

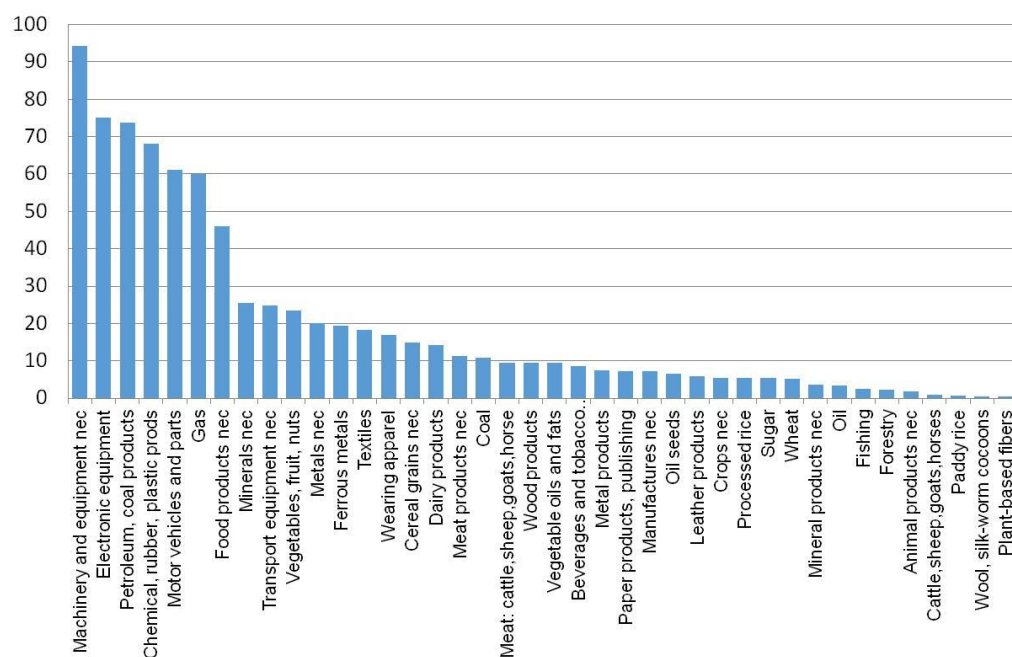
This analysis does not attempt to split NTMs out according to their nature (i.e. by quadrant in Figure 1) – it covers both ‘necessary’ and ‘unnecessary’ NTMs. But the

²³ This 2.9% estimate is taken from the GTAP v9 database, so considers applied tariffs (i.e. those used in practice, including through FTAs), rather than economies’ MFN bound tariffs (which are the maximum they can charge). The 2.9% is also trade-weighted rather than a simple unweighted average across tariff lines.

key message here – with all data caveats duly acknowledged – is that NTMs are significant in APEC relative to average tariffs.

Figure 7 Costs of NTMs in the APEC region, by sector

\$US billions, 2011



Source: NZIER

On a sectoral level, the highest costs of NTMs falls on the machinery and electronic equipment sectors. While their AVEs are relatively low at 7-8%, their heavy trade weight within APEC means the overall impacts are very large at around US\$170 billion combined across the two sectors.

In comparison, the sectors with the highest AVEs – dairy and processed rice, both at 58% AVE – have a lower impact on transaction costs because much less is traded, comparatively speaking.²⁴ The cost of NTMs for dairy imports for example is US\$14 billion and for processed rice is US\$6 billion.

This emphasises the importance of considering trade weights as well as AVEs when discussing the overall impacts of NTMs on the APEC regional economy.

It is important to note that this analysis looks only at the initial impacts of NTMs. Given the development of regional production networks in the APEC region, where raw materials and intermediate inputs cross numerous borders before being sold as a final product to end-users, these costs accumulate or multiply along supply chains. The eventual impact is that consumer welfare across the APEC region is diminished by the presence of trade-distorting NTMs – prices are higher and quantities lower than would otherwise be the case.

²⁴ Of course there will be some trade-chilling effects at play here which are hard to quantify. That is, our analysis can't take into account the fact that some NTMs are so restrictive that exporting firms simply decide that it's not worth their time and resources to try to overcome them, and instead direct their efforts into other markets. This would result in a zero trade weighting for our calculations, and hence a zero dollar cost.

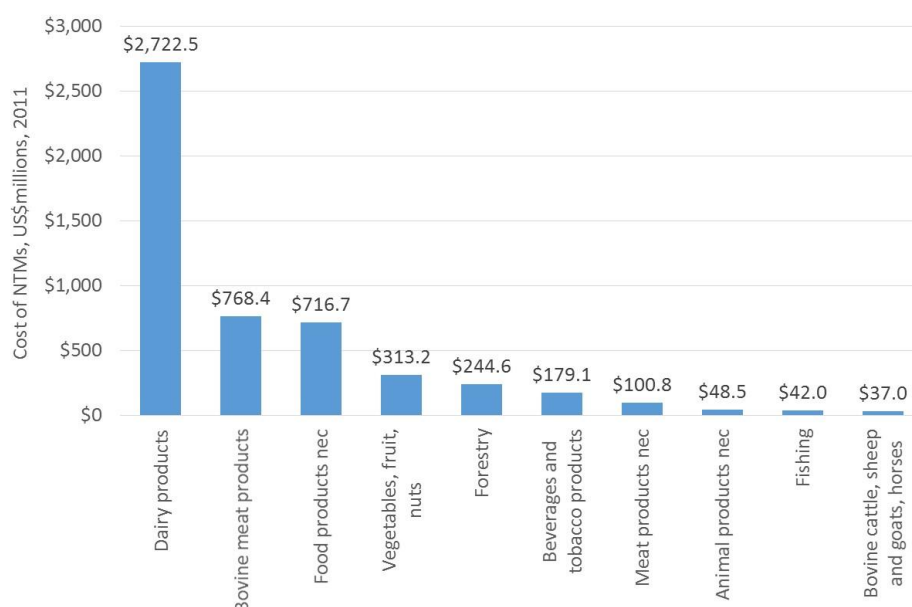
Impacts of NTMs on New Zealand's exports

We can also use these data sets to get an understanding of the overall cost of NTMs imposed on New Zealand's exports to APEC economies. We focus here on the primary sector, since these are often the most visible NTMs.

The overall cost of NTMs on New Zealand's primary sector exports is US\$4.7 billion (based on 2011 trade). The vast majority of these costs are imposed on the dairy sector (US\$2.7 billion) and beef and food products sectors (US\$768 million and US\$717 million respectively).

Figure 8 Costs of APEC NTMs on NZ's primary sector exports

US\$ millions, 2011



Source: NZIER

Looking across all of New Zealand's exports to APEC economies, the total costs of NTMs on New Zealand within the region sum to US\$5.9 billion.

The economic impact of legitimate APEC NTMs is tougher to estimate

The welfare impacts of 'legitimate' NTMs (see Figure 1) are harder to determine, as they will likely deliver benefits to households (improved health and safety, better environmental outcomes, etc.) that at least partially offset the costs to businesses of complying with these measures. But even legitimate NTMs can be streamlined to achieve their purpose at the lowest possible cost, thus reducing transaction costs and increasing the competitiveness of firms engaged in international trade.

According to the Marshall School (2008), businesses in the APEC region generally accept that NTMs in some circumstances constitute the first-best approach to pursuing a legitimate public objective, but what "raises the ire of business executives" is that the costs of implementing legitimate NTMs may be unintentionally higher than necessary. Further, APEC "economies do admit that some

regulations have had unintended consequences and some NTMs remain after their effectiveness is no longer needed".²⁵

Therefore the key question to consider here is not how soon can they be removed, but can their effect be achieved a better way? Is there a less trade distorting or welfare-reducing instrument that could do the same job?

²⁵ Marshall School (2008, p.18).

4. Options for addressing NTMs

4.1. APEC businesses are seeking improvements

In a GVC-dominated Asia-Pacific trade and investment environment, technological advancements are changing the way goods and services are demanded and supplied. The enhanced connectivity between buyers and sellers resulting from ever-increasing use of the internet to carry out business makes it imperative that regulatory systems do not lag behind technological advances. Inconsistent or non-transparent regulatory systems add transaction costs to GVCs and act as a form of NTM.²⁶

This importance of addressing NTMs to reduce unnecessary transaction costs is supported by the views of business in the APEC region. ABAC (2015, p. 21) notes that a lack of transparency in regulations as “the most important issue for Asia-Pacific free trade agreements” and that:²⁷

For businesses, and in particular SMMEs, higher compliance costs hinder international competitiveness and complicate the most efficient deployment of economic resources. Enhancing regulatory cooperation within APEC economies will lower the costs of doing business, shorten supply chains and help achieve a seamless commercial environment.

4.2. The importance of NTMs and GVCs is reflected in existing APEC workstreams and capability-building

APEC has been examining GVCs and NTMs for many years, so is now well placed to further assist economies address NTMs that increase transaction costs, reduce firms’ competitiveness and ultimately cost households through reduced purchasing power.

*Value chains make unusual demands on policy since they depend on complex cross-border movements of products, services, capital, people, and information.*²⁸

Given these “unusual demands”, effectively addressing NTMs likely requires some form of coordinating supra-national body to take the lead. This is in part because there is little domestic incentive to remove NTMs once they are imposed. They tend to deliver clear benefits for some parts of the local economy, which will be celebrated. The domestic costs on households and firms (higher prices, less choice, etc.) are less obviously felt. And the costs imposed on other economies aren’t really a concern at all for most domestic politicians.

²⁶ This point is also made by Cadot, Munadi and Ing (2013, p.1): “The challenge is to design NTMs so as to maximize their effectiveness in responding to consumer concerns while minimizing the induced economic inefficiency and the interference from self-interested lobbies. This is a difficult balancing act, for which governments, in particular the administrations involved in designing NTMs—regulatory agencies or agriculture, health and industry ministries—are often ill-equipped. The result is sometimes measures that are poorly designed and unwittingly hurt key sectors of the economy, either because they are not targeted at the right problem, or because they are too broad-ranging, or else they involve unduly cumbersome compliance-verification mechanisms. In most countries, regulatory functions are scattered over a number of ministries and agencies that have no experience—and little incentive—to work together on these issues”.

²⁷ Petri et al. (2015, p.3).

²⁸ Petri et al (2015, p.2).

To move beyond domestic politics and focus on the real world effects of NTMs, a transnational organisation that can facilitate the ‘exchange of benefits’ from NTMs reform is necessary.

APEC is a good candidate for such a task, given that its existing key initiatives and workstreams related to NTMs include:

- The **Trade Facilitation Action Plans (TFAP)**. APEC has been formally working on improving trade facilitation since at least 2001, when Leaders endorsed the initial TFAP, which has subsequently been updated, driven by CTI. The second TFAP (TFAPII) aimed to reduce trade transaction costs by 5% between 2007 and 2010, and a 2011 report by PSU suggested that this goal had been achieved.²⁹
- The **Supply Chain Connectivity Framework Action Plan (SCFAP)**³⁰ which emerged as a natural follow up to the TFAPs, and was designed to expand APEC’s trade facilitation work “to cover other associated transport, communication and related regulatory behind the border costs. Improving trade logistics through enhanced supply-chain connectivity has emerged recently as a significant factor contributing towards increased trade facilitation”.³¹
- The **Sub-Committee on Customs Procedures (SCCP)** has taken on a number of additional responsibilities under the SCFAP, building on its founding goal: to “simplify and harmonise regional customs procedures to ensure that goods and services move efficiently, effectively and safely through the region, and to reconcile and facilitate border control”.³²
- **Capability-building** activities. Building on analysis carried out around the SCFAP, the Committee on Trade and Investment (CTI) proposed in 2015 a series of five capability-building projects aimed at helping APEC economies, and especially developing economies, meet the 2015 objective of a 10% improvement in supply chain performance. Technical assistance activities were proposed on the following topics:
 - Pre-approval processing of goods moving through the Asia-Pacific region
 - Expedited shipments procedures
 - Releasing goods prior to the final determination of customs duties and fees
 - Advanced rulings on tariff classification or the origin of goods

²⁹ APEC PSU (2011).

³⁰ See APEC (2014). The key goals of SCFAP are as follows:

- To improve the transparency of the regulatory framework affecting logistics, and to improve coordination of government agencies implementing policies that affect logistics (chokepoint 1)
- To improve the efficiency of transport infrastructure (chokepoint 2)
- Explore ways to enhance the engagement and competitiveness of local/regional logistics sub-providers in the Asia-Pacific (chokepoint 3)
- Improve efficiency of clearance of goods at the border and encourage greater cooperation between border regulatory agencies (chokepoint 4)
- Simplifying customs documentation and other procedures to ease the cost burden on trading businesses, and enhancing transparency and predictability (chokepoint 5)
- Improving the efficiency of multi-modal connectivity to allow businesses to optimise supply-chain efficiency and operate across borders faster, cheaper and more reliably (chokepoint 6).
- Reducing variations in cross-border standards and regulations, including measures to address mobile roaming data charges, improved cybersecurity to encourage a trusted online environment (chokepoint 7)
- Improving understanding and transparency around the treatment of cross-border transit arrangements (chokepoint 8)

³¹ http://publications.apec.org/file-download.php?filename=App8_09_cti_rpt_SC%20Framework.pdf&id=945_toc

³² <http://www.apec.org/Groups/Committee-on-Trade-and-Investment/Sub-Committee-on-Customs-Procedures.aspx>

- Electronic payments for duties, taxes, fees and charges
- CTI has also sought to advance work on NTMs, aimed at helping “economies **reduce or eliminate the trade restrictiveness of NTMs** while supporting economies’ legitimate policy objectives”.³³ This led to further work by PSU on “strategies that economies could take to pursue the policy objectives underlying the NTMs in more trade facilitative ways. Economies were encouraged to build on this work by developing practical initiatives to address non-tariff barriers in the region, including in the context of GVCs”.³⁴
- CTI has been supported by The **Sub-Committee on Standards and Conformance** (SCSC), which aims to “reduce the negative effects that differing standards and conformance arrangements have on trade and investment flows in the Asia-Pacific region...[and] promotes open regionalism and market-driven economic interdependence by encouraging greater alignment of APEC member economies’ standards with international standards”.³⁵

4.3. Existing WTO processes aim to address NTMs – via the low hanging fruit

While addressing NTMs through negotiation is generally more challenging than tariffs, the multilateral trading system has developed effective rules for regulating non-tariff measures, focusing initially on the elimination of the “quadrant 4” measures in Figure 1. Through successive negotiating rounds in the WTO, the most trade protectionist measures have been prohibited, the use of discriminatory and unnecessarily trade-restrictive measures reduced, and transnational regulatory cooperation and convergence encouraged.³⁶

Regional economic groupings should be able to achieve more than the WTO given the inevitable tendency for consensus organisations to proceed at the speed of the slowest ship. Thus the APEC Leaders’ “standstill” commitment to resisting pressure to raise new trade and investment barriers until the end of 2020 and pledge to roll back protectionist and trade distorting measures is an important reaffirmation and advance on these multilateral efforts to address NTMs.³⁷

4.4. And Asia-Pacific FTAs are increasingly focusing on NTMs too...

The negotiation of preferential or free trade agreements (FTAs) presents an opportunity to reduce and streamline NTMs, though the extent to which this is achieved depends on the depth of integration aimed for.

There is currently a spectrum of approaches to addressing NTMs in FTAs. A shallow integration approach involves a simple set of rules applicable to NTMs, such as transparency, national treatment and non-violation, greater regulatory cooperation plus high-level references to WTO agreements and processes.

³³ CTI (2013, p.5).

³⁴ CTI (2014, p.7).

³⁵ <http://www.apec.org/Groups/Committee-on-Trade-and-Investment/Sub-Committee-on-Standards-and-Conformance.aspx>

³⁶ WTO (2012, p.46).

³⁷ APEC Leaders (2016).

Deeper integration of the kind envisaged for an FTAAP would typically introduce provisions relating to particular kinds of NTMs or around specific products, including the mutual recognition and harmonisation of SPS and TBT measures.³⁸

Cadot and Gourdan (2015) note that FTAs with provisions relating to the harmonisation or mutual recognition of standards dampen the price-raising effect of NTMs, with provisions on mutual recognition of conformity assessment having the strongest dampening effect.³⁹ They also underline the importance of mutual recognition of basic paperwork like origin and SPS certificates, highlighting the contribution that cooperation and technical assistance in regulatory policy making can make towards reducing trade costs.⁴⁰

4.5. Yet more needs to be done to tackle NTMs and APEC members can show the way

Much remains to be done in terms of how Asia-Pacific FTAs might deliver binding commitments around NTMs that actively seek to reduce the transaction costs of both trade-distorting and legitimate NTMs.

As ABAC members note, even modern FTAs do not yet make strong enough links between cross-cutting regulatory issues that increase transaction costs in the Asia-Pacific region:

*Trade agreements often handle value chains incoherently, and crucial provisions appear in many chapters of an agreement. For example, a value chain business process may require streamlined customs and border formalities, unrestricted data flows, common standards and certification requirements, strong intellectual property rights, investments that enable a company to locate some operations abroad, and the mobility of some personnel. Each of these issues is typically addressed in a different chapter of a trade agreement.*⁴¹

As such, should APEC economies move towards FTAAP, NTMs and their effects on GVCs should be a central theme of the modalities for the negotiations, rather than taking a backseat to tariffs. The November 2016 release of ‘Non-Tariff Barriers in Agriculture and Food Trade in APEC: Business Perspectives on Impacts and Solutions’ by the USC Marshall School of Business is another valuable contribution towards this goal.

Given the estimated US\$790 billion cost of NTMs on trade in the APEC region identified here, the growing desire of APEC businesses to see these costs decrease to enhance supply chain connectivity and competitiveness, and the numerous initiatives already under way within APEC, further moves towards FTAAP might usefully see APEC focus on:

³⁸ WTO (2012, p.162). The Electrical and Electronic Equipment Mutual Recognition Agreement annex to the New Zealand-China FTA is one such product-specific example, and APEC adopted parts II and III of the ‘APEC Mutual Recognition Arrangement for Electric and Electronic Equipment’ Pathfinder Initiative in 2002.

³⁹ Cadot and Gourdan (2015, p.4).

⁴⁰ Cadot and Gourdan (2015, p.20)

⁴¹ Petri et al (2015, p.37, emphasis added)

1. **Additional quantitative analysis** and refinement of estimates of the transaction costs imposed by NTMs. Considerable research is currently under way by the World Bank, UNCTAD and other institutions to better record the occurrence of NTMs at a very detailed level of product disaggregation (i.e. at the tariff line level).⁴² This will be an important basis for eventually translating the frequency of NTMs to AVEs that better support economic modelling of their impacts.⁴³
2. **Helping APEC economies classify their own NTMs** using the quadrant diagram in Figure 1, and identifying those that are most costly to APEC businesses and consumers.
3. **Developing a taxonomy of NTMs to reveal those which are most efficient⁴⁴.** Moving from inefficient interventions should be easier in political economic terms than seeking to abolish the measure. We note that ABAC New Zealand has recently developed a useful set of principles for addressing NTBs which could serve as a platform for further work within APEC.
4. **Focusing future capability-building activities** on initiatives related to building economies' understanding of NTMs and their potential impacts on APEC GVCs and firm competitiveness. APEC researchers might usefully look to partner more closely with the Economic Research Institute of ASEAN and East Asia (ERIA), given that organisation's work on NTMs.⁴⁵

⁴² See Beghin et al (2015) for a helpful summary.

⁴³ Including their trade inhibiting effects as well as their pure costs.

⁴⁴ Relative to their impact on trade.

⁴⁵ For example, Narjoko (2015) and Ing et al (2015).

5. Conclusions and next steps

This paper has attempted to add to the rapidly-growing research, policy and business debate on the costs of NTMs on businesses and households. By estimating the costs of NTMs in the APEC region at US\$790 billion, and providing these estimates by sector and economy, we hope to catalyse further research to refine our numbers.

We recognise that our estimates are based on numerous assumptions and multiple data sets, and that much more needs to be done to lift the accuracy of data on the impacts of NTMs. We see our analysis only as an indicative starting point and would welcome researchers' views on how we might improve our calculations.

However, by providing a comparison with the costs of tariffs – NTMs add to and impose three times the costs of tariffs in the APEC region – we hope to prompt further thinking on the appropriate balance between addressing tariffs and NTMs in future regional economic integration negotiations, including FTAAP.

In a world of global value chains and ever-greater trade in intermediate goods and services, we hope that this paper can spark more discussion around what more could be done by governments to reduce the transaction costs associated with NTMs.

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