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**TRADE, TESTING AND TOASTERS: CONFORMITY ASSESSMENT PROCEDURES AND THE TBT
COMMITTEE**

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TRADE, TESTING AND TOASTERS: CONFORMITY ASSESSMENT PROCEDURES AND THE TBT COMMITTEE*

Devin McDaniels[†] and Marianna Karttunen[‡]

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Abstract

Even if traders adapt to technical regulations and standards in an export market, they still must prove compliance by undergoing conformity assessment procedures (CAPs), such as testing, inspection, or certification. Duplication, delays or discrimination in CAPs can significantly increase trade costs, and this risk is reflected in the growing importance of CAPs in WTO discussions and bilateral and regional free trade agreements. This paper conducts an empirical study of the trade issues that WTO Members encounter with CAPs as described in specific trade concerns (STCs) raised in the WTO Committee on Technical Barriers to Trade (TBT) during 2010-2014. We observe that CAPs raise proportionally more concern among WTO Members than technical regulations do, and that testing and certification are the procedures that most frequently give rise to trade problems. Within the framework of the TBT Agreement, we find that questions around transparency and whether CAPs create unnecessary barriers to trade are the two most prominent issues highlighted by Members.

Key Words: international trade, certification, testing, conformity assessment procedures, international standards, international cooperation, coherence, non-tariff barriers, technical barriers to trade, regulation

JEL classification numbers: F13, F53, F55, K33, L15, L51

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I. INTRODUCTION

Exporting to a new market involves adapting exported products to local technical regulations and standards¹. In addition, exporters must prove that the local product requirements are well respected by undergoing conformity assessment procedures (CAPs), such as testing, inspection, or certification. CAPs provide confidence to regulators that products – regardless of their origin – comply with national technical regulations and the associated levels of safety, environmental or health protection. At the same time, CAPs can potentially create major trade impediments by increasing trade costs for exporters.² This paper aims to shed light on CAPs and how they work in practice, and explore the types of trade barriers they may create.

In the context of the WTO Agreements, Members have regulatory autonomy to choose the measures best suited to address their national policy concerns of public health and safety, environmental protection, consumer information, amongst others, provided these measures comply with Members' obligations under such Agreements, consistent with the 'negative integration' process. In the same spirit, they are also free to choose the procedure that will give them the best guarantee that products sold on their market fulfil their policy objectives. As a result, a myriad of diverse procedures coexist among countries, adding to the already heterogeneous regulatory policy environment.

For instance, a simple product like a toaster could be subject to identical technical regulations in two countries, but considered a low risk product in one country, and high risk product in another country, because of serious household accidents caused in relation to overall poor electric infrastructure. As a result, the former could require a simple declaration of conformity by the manufacturer, whereas the latter might ask for testing of sample toasters sold on its market by its national laboratories which have full understanding of the weaknesses and risks specific to the country's electrical infrastructure.

Despite very similar – or even identical – technical regulations, the diversity of approaches to CAPs by countries can potentially create major trade impediments by increasing trade costs for exporters. Duplication in CAPs across markets can increase trade costs, if a regulator chooses not to accept a foreign test result or certification and requires importers to repeat these procedures. Trade costs can also be inflated for foreign firms if domestic firms are subject to expedited or facilitated CAPs. Indeed, complying with CAPs in different export markets may be costly merely because of the time and burden required for undergoing several different procedures or because of the possible additional transportation expenses if products are not granted market access after undergoing mandatory CAPs.³

The potential for CAPs to unnecessarily increase trade costs is magnified with the rise of regional and global value chains, and the associated increasing dispersion and fractionalization of production.⁴ CAPs may need to be performed on each component sourced along the value chain – for example to ensure interoperability or safety – and the impact of duplication or discrimination in CAPs grows the more production is unbundled.

¹ This paper will use the term 'technical regulation' to refer to mandatory technical regulations, and the term 'standard' to refer to voluntary standards, as defined in Annex 1 of the TBT Agreement.

² Van Tongeren et al. identify conformity assessment costs to be one among the three costs incurred by exporters because of regulatory heterogeneity, together with specification costs and information costs. Frank van Tongeren, Véronique Bastien, and Martin von Lampe, 'International Regulatory Cooperation, a Trade-Facilitating Mechanism,' *E15 Initiative*, accessed December 15, 2015, <http://e15initiative.org/publications/international-regulatory-cooperation-a-trade-facilitating-mechanism/> see especially p. 2-3

³ Stephenson estimates that testing, certification, accreditation and recognition represent multiple layers of administrative procedures adding to the product and transportation costs of a product's acceptance on a market. She warns that CAPs may inflate trade costs particularly because they are more prone to 'bureaucratic discretion and industry influence' than technical regulations themselves. Sherry Stephenson, *Standards and Conformity Assessment as Nontariff Barriers to Trade* (World Bank Publications, 1997). at p.19. For more specific views on the specific costs that different CAPs entail, see Barbara Fliess and Raymond Schonfeld, "Trends in Conformity Assessment Practices and Barriers to Trade: Final Report on Survey of CABs and Exporters," vol. 37, OECD Trade Policy Papers (OECD, 2006), at 42.

⁴ Baldwin, Richard, 2011, "Trade and Industrialization after Globalization's 2nd Unbundling: How Building and Joining a Supply Chain are Different and Why it Matters," NBER Working Paper 17716. http://siteresources.worldbank.org/INTRANETTRADE/Resources/Baldwin_NBER_Working_Paper_17716.pdf; World Trade Report, 2014. "The Rise of Global Value Chains" (Section C of WTR2014) https://www.wto.org/english/res_e/booksp_e/wtr14-2c_e.pdf

The Agreement on Technical Barriers to Trade ('TBT Agreement') provides a legal framework to ensure a balance between what the importing Member requires to obtain positive assurance of conformity with its regulations or standards, and ensuring that procedures do not become unnecessary or discriminatory trade barriers. The WTO TBT Committee in turn offers WTO Members a multilateral forum to discuss concerns that arise in the implementation of CAPs, taking into account both the costs perceived by traders on one hand, and the expected benefits of conformance as pursued by the policy maker on the other. These open discussions help to improve understanding of each other's measures, facilitates an exchange of best practices, and gives opportunity to flag issues of concern.⁵

An extensive literature has explored policy, economic and legal aspects of technical regulations and standards in the context of the TBT Agreement, in part due to WTO jurisprudence on these measures.⁶ On the other hand, CAPs have received scant academic interest.⁷ The few studies that exist have surveyed exporter and conformity assessment body perceptions of CAPs as trade barriers.⁸ Acknowledging the importance given to CAPs by countries in bilateral, regional⁹ and multilateral trade discussions, this study aims to fill the gap in academic literature by using new data on government-to-government discussions of CAPs in the TBT Committee. We conduct an empirical analysis of the trade issues that Members encounter with CAPs as described in specific trade concerns (STCs) raised in the TBT Committee during 2010-2014.

Strikingly, we observe that CAPs raise proportionally more concern among WTO Members than technical regulations do, suggesting that CAPs are perceived as more burdensome trade barriers than technical regulations. Among these CAPs discussed in the Committee, we underline certain trends. Only a fraction of notified measures are CAPs, whereas they raise significant concern in Committee discussions, indicating that the TBT Committee serves as an essential forum both to raise awareness and exchange views on CAPs. Testing and certification cause by far the most trade concern, featuring in 85% of CAP-related STCs. The issues most often highlighted by Members are the lack of transparency related to CAPs and the potential unnecessary barriers to trade resulting from CAPs. Trade in electrical and electronic equipment, foodstuff and chemicals stand out as the products most subject of concern. The EU and US appear to be most actively concerned, while China is most frequently challenged.

By bringing to light the CAP-related concerns as raised by Members, we identify the main difficulties encountered in the implementation of CAPs and underline where there is most potential for greater regulatory cooperation to avoid unnecessary barriers to trade. We conclude the paper with a discussion of the findings and avenues for future research.

⁵ The TBT Committee has in particular identified five approaches for the facilitation of CAPs: Mutual recognition agreements; accreditation; unilateral recognition of results of conformity assessment; international and regional systems for conformity assessment; suppliers declaration of conformity. Vancauteran reviews the literature on the trade effects of these five approaches, and concludes that there is substantial evidence that these approaches are trade promoting. Mark Vancauteran, 'Trade Effects of Approaches Intended to Facilitate Acceptance of Results of Conformity Assessment: What Is the Evidence?' 2009 Workshop and Policy Dialogue on Technical Barriers to Trade: Promoting Good Practices in Support of Open Markets, OECD Headquarters, Paris, 2009.

⁶ See esp. *European Communities – Trade Description of Sardines*, WT/DS231; *United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products*, WT/DS381; *United States – Certain Country of Origin Labelling (COOL) Requirements*, WT/DS384 and WT/DS386; *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products*, WT/DS400 / WT/DS401.

⁷ See for instance Arthur E. Appleton, 'Conformity Assessment Procedures,' in *Research Handbook on the WTO and Technical Barriers to Trade*, ed. Tracey Epps and Michael J. Trebilcock (Edward Elgar, 2013), 81–119. WTO, *Trade and Public Policies: A Closer Look at Non-Tariff Measures in the 21st Century*, World Trade Report (Geneva: WTO, 2012).; Vancauteran, 'Trade Effects of Approaches Intended to Facilitate Acceptance of Results of Conformity Assessment: What Is the Evidence?', above n 5. Barbara Fliess, Frédéric Gonzales, and Raymond Schonfeld, 'Technical Barriers to Trade: Evaluating the Trade Effects of Suppliers' Declaration of Conformity,' vol. 78, OECD Trade Policy Working Papers, 2008.; Fliess and Schonfeld, "Trends in Conformity Assessment Practices and Barriers to Trade: Final Report on Survey of CABs and Exporters.", above n 3; Stephenson, *Standards and Conformity Assessment as Nontariff Barriers to Trade*, above n 3.

⁸ ITC survey on NTMs (ITC cited in WTO, *Trade and Public Policies*. Above n 7); Fliess and Schonfeld, 'Trends in Conformity Assessment Practices and Barriers to Trade: Final Report on Survey of CABs and Exporters.'

⁹ Some examples include: the role of conformity assessment procedures in the nine ASEAN sectoral MRAs within the context of the 2015 ASEAN Economic Community (<https://www.mti.gov.sg/MTIInsights/MTIImages/MTI%20AEC%202015%20Handbook.PDF>); provisions on conformity assessment in the draft TBT chapter of the Trans-Pacific Partnership, including Article 8.6 and sector-specific Annexes on ICT products, pharmaceuticals, cosmetics, organic products and medical devices (<https://ustr.gov/sites/default/files/TPP-Final-Text-Technical-Barriers-to-Trade.pdf>).

II. GETTING TO KNOW CAPS

A. CAPs defined

What do we mean by CAPs? In the most basic sense, CAPs refer to procedures which provide confidence that a certain requirement is respected. This means confidence for the marketplace, consumers, businesses and regulators that products are safe and pose no risk to health, do not have adverse effects on the environment or perform as expected for example.

The TBT Agreement defines a CAP as 'any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled.'¹⁰ There are a number of ways of providing or demonstrating confidence, with different actors involved. The definition of the TBT Agreement includes an explanatory note listing examples of CAPs: 'Conformity assessment procedures include, inter alia, procedures for sampling, testing and inspection; evaluation, verification and assurance of conformity; registration, accreditation and approval as well as their combinations.' In addition, two common procedures not included in the TBT Agreement list – certification and supplier's declaration of conformity – are defined elsewhere.¹¹

B. The TBT Agreement

The TBT Agreement includes five Articles that cover the application of CAPs by central, local and non-governmental bodies (Articles, 5, 7 and 8), as well as cooperation between Members to accept and recognize results of CAPs of other Members (Article 6 and 9). These Articles set out a number of core disciplines for CAPs that must be respected by WTO Members, including non-discrimination, avoidance of unnecessary barriers to trade, use of international standards, and transparency, amongst others. These disciplines are parallel to those in the TBT Agreement applying to technical regulations (Articles 2 and 3), but are specifically adapted to the context and challenges of CAPs.

Article 5 contains obligations for Members' central government bodies in respect of CAPs. Article 5.1 begins with a chapeau establishing the application of these core provisions to situations in

¹⁰ ISO/IEC 17000:2004, *Conformity assessment – Vocabulary and general principles*, defines conformity assessment as: 'demonstration that specified requirements relating to a product, process, system, person or body are fulfilled' (Art. 2.1). An explanatory note elaborates: 'NOTE 1 The subject field of conformity assessment includes activities defined elsewhere in this International Standard, such as testing (4.2), inspection and certification, as well as the accreditation of conformity assessment bodies.' (infra notes removed).

¹¹ ISO/IEC 17000:2004, *Conformity assessment – Vocabulary and general principles*, provides definitions of: *sampling* ('provision of a sample of the object of conformity assessment, according to a procedure', Art. 4.1); *testing* ('determination of one or more characteristics of an object of conformity assessment, according to a procedure. NOTE 'Testing' typically applies to materials, products or processes', Art 4.2); *inspection* ('examination of a product design, product, process or installation and determination of its conformity with specific requirements or, on the basis of professional judgement, with general requirements. NOTE Inspection of a process may include inspection of persons, facilities, technology and methodology', Art. 4.3); *assurance of conformity* which is replaced by the term *attestation* ('issue of a statement, based on a decision following review, that fulfilment of specified requirements has been demonstrated NOTE 1 The resulting statement, referred to in this International Standard as a 'statement of conformity', conveys the assurance that the specified requirements have been fulfilled. Such an assurance does not, of itself, afford contractual or other legal guarantees', Art. 5.2); *registration* defined in the context of *certification* ('NOTE 1 Certification of a management system is sometimes also called registration', Art. 5.5); *accreditation* ('third-party attestation (5.2) related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks', Art. 5.6); and *approval* ('permission for a product or process to be marketed or used for stated purposes or under stated conditions. NOTE Approval can be based on fulfilment of specified requirements or completion of specified procedures.', Art. 7.1). The terms evaluation and verification are not defined in this standard. However, additional terms are defined: certification ('third-party attestation related to products, processes, systems or persons. NOTE 1 Certification of a management system is sometimes also called registration. NOTE 2 Certification is applicable to all objects of conformity assessment except for conformity assessment bodies themselves, to which accreditation is applicable', Art. 5.5) (infra notes removed throughout). *Supplier's declaration of conformity* is defined in ISO/IEC Guide 2 as: 'procedure by which a supplier gives written assurance that a product, process or service conforms to specific requirements'. Note In order to avoid any confusion, the expression 'self-certification' should not be used' (Art. 15.1.2).

which a Member requires 'positive assurance' of conformity with CAPs.¹² The introduction of CAPs therefore depends on Members' own discretion, in line with the regulatory autonomy recognized to Members in the Preamble of the TBT Agreement.¹³

Like Article 2 of the TBT Agreement on technical regulations, the principles of national treatment and most favoured nation (MFN) equally apply to CAPs in Article 5.1.1, with specific focus on **discrimination** in procedures and access of suppliers to assessment of conformity.¹⁴

The provisions on avoiding **unnecessary barriers to trade** in CAPs are set out in Articles 5.1.2., which specifies that Members' CAPs shall not, amongst others, be 'more strict or applied more strictly than is necessary to give the importing Member adequate confidence' of conformity.¹⁵ In relation to these provisions of Article 5.1, Article 5.2 establishes a number of procedural requirements for CAPs, including that CAPs be performed 'as expeditiously as possible', that confidentiality of information about products originating in the territories of other Members be respected, that the fees imposed for assessing conformity be limited to what is necessary and equitable in relation to similar fees in other Members, and that CAPs are generally transparent and respect due process.

Article 5.4 requires Members to base their CAPs on **relevant guides or recommendations issued by international standardizing bodies**, in certain situations. Members would not have to use relevant guides or recommendations if they are 'inappropriate for the Member concerned', and Article 5.4 lists, in a non-exhaustive manner, reasons that may render relevant guides or recommendations issued by international standardizing bodies inappropriate.¹⁶

When Members do not follow guides or recommendations by international standardizing bodies and the proposed CAP may have significant effects on trade, Members have to fulfil a certain number of **transparency** obligations, which are very similar to those for technical regulations (Art. 5.6). These include the obligation: to publish a notice of proposed CAPs; notify other Members of proposed CAPs and allow reasonable time for other Members to make comments of them in writing; respond to enquiries regarding notified measures; as well as to provide a 'reasonable interval' between the publication of CAP requirements and their entry into force (Art. 5.9).

Beyond these general principles governing CAPs, the TBT Agreement promotes **cooperation between Members on the implementation of CAPs**. Article 6 encourages Members to recognize each other's CAP results, 'provided they are satisfied that those procedures offer an

¹² '5.1 Members shall ensure that, in cases where a positive assurance of conformity with technical regulations or standards is required, their central government bodies apply the following provisions to products originating in the territories of other Members: (...)'

¹³ Recital 6, Preamble TBT Agreement: 'Recognizing that no country should be prevented from taking measures necessary to ensure the quality of its exports, or for the protection of human, animal or plant life or health, of the environment, or for the prevention of deceptive practices, at the levels it considers appropriate, subject to the requirement that they are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on international trade, and are otherwise in accordance with the provisions of this Agreement' See also EC – Sardines, Panel Report, paras. 7.119-7.120, which reiterate Members' autonomy to decide whether or not to pursue a measure, which should only be limited by the obligation not to discriminate and to prevent unnecessary barriers to trade.

¹⁴ '5.1.1 Conformity assessment procedures are prepared, adopted and applied so as to grant access for suppliers of like products originating in the territories of other Members under conditions no less favourable than those accorded to suppliers of like products of national origin or originating in any other country, in a comparable situation; access entails suppliers' right to an assessment of conformity under the rules of the procedure, including, when foreseen by this procedure, the possibility to have conformity assessment activities undertaken at the site of facilities and to receive the mark of the system;'

¹⁵ '5.1.2 Conformity assessment procedures are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. This means, inter alia, that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary to give the importing Member adequate confidence that products conform with the applicable technical regulations or standards, taking account of the risks non-conformity would create.'

¹⁶ '5.4 In cases where a positive assurance is required that products conform with technical regulations or standards, and relevant guides or recommendations issued by international standardizing bodies exist or their completion is imminent, Members shall ensure that central government bodies use them, or the relevant parts of them, as a basis for their conformity assessment procedures, except where, as duly explained upon request, such guides or recommendations or relevant parts are inappropriate for the Members concerned, for, inter alia, such reasons as: national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment; fundamental climatic or other geographical factors; fundamental technological or infrastructural problems.'

assurance of conformity with applicable technical regulations or standards equivalent to their own procedures.’ (art 6.1). In line with Article 5, Article 6 also gives Members discretion with regard to the assurance of conformity with technical regulations or standards and underlines that ‘prior consultations may be necessary in order to arrive at a mutually satisfactory understanding’. In this regard, the TBT Agreement mentions accreditation and mutual recognition agreements (Art. 6.3) as possible means to ensure confidence in the reliability of CAP results. Article 9 of the TBT Agreement encourages Members to participate in, become members of, or formulate and adopt international systems for CAPs to facilitate recognition and acceptance of CAP results, as long as these international systems comply with the provisions of Articles 5 and 6 of the Agreement.

C. Who performs CAPs?

Conformity assessment includes a range of different, interlinked and overlapping activities, performed by a range of bodies. Typically, the bodies involved in conformity assessment are identified according to their relationship to the product under assessment. The manufacturer is referred to as the *first party*; the user, purchaser or importer of the product is referred to as the *second party*; and, the *third party*¹⁷ is a body that is independent of both the manufacturer and user (1st and 2nd) to ensure objectivity.¹⁸

Conformity assessment activities are conducted both by private and government bodies, such as testing laboratories, inspection bodies, certification bodies, and accreditation bodies.¹⁹ The types of bodies involved will depend on the nature of the conformity assessment scheme, and scheme owner.²⁰ First, is the scheme voluntary (e.g. concerned with demonstrating conformity with requirements in standards) or mandatory (e.g. a ‘positive assurance of conformity’ with technical regulations or standards is required by the government). Mandatory schemes involve governments and regulators, whether directly or indirectly, and private bodies will often be called upon to support mandatory conformity assessment schemes, although in some cases schemes are managed performed exclusively by government bodies. Assurance of conformity (e.g. certification, SDoC) under a mandatory scheme is a necessary step to demonstrate compliance with technical regulations, and sell legally on the market. Voluntary schemes will sometimes receive support from government, but are most often managed by private bodies, for example certification bodies. Assurance of conformity (e.g. certification) under a voluntary scheme may be needed (*de facto* mandatory) to participate in certain transactions, value chains or markets. This paper focuses on mandatory conformity assessment schemes for products – situations where governments require a ‘positive assurance of conformity’.

D. CAPs in practice

It is useful to refer to the so-called functional approach to conformity assessment²¹ as defined by ISO/IEC to understand the relationships and interdependencies between various procedures. It includes four steps: selection; determination; review and attestation; and surveillance (Figure 1). The basic idea is to *select* the appropriate data and information for assessment (e.g. sampling), *determine* whether the product fulfils requirements or characteristics (e.g. through testing, inspection), and *review* whether fulfilment of requirements has been correctly demonstrated and *attest* that a product conforms through a statement of conformity (certificate, mark of conformity). *Surveillance* is the process of ensuring that the product continues to conform, including market surveillance (e.g. sampling, testing and inspection of products on the market).

¹⁷ Third party (12.9): ‘person or body that is recognized as being independent of the parties involved, as concerns the issue in question’ Note ‘parties involved are usually supplier (‘first party’) and purchaser (‘second party’) interests.’

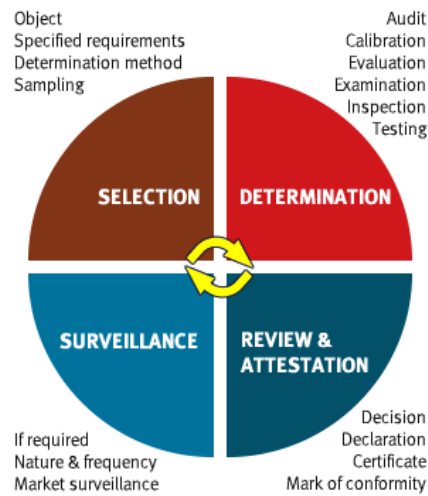
¹⁸ ISO UNIDO 2010

¹⁹ The types of bodies involved, and whether they are private or government run, depends on the country in question, and the type of scheme and products addressed. They are a range of different approaches and models for CAPs utilized variously by developed and developing countries, involving a mixture of private and government bodies.

²⁰ E.g. producer or group of producers, a certification body or group of bodies, a regulatory body. ISO UNIDO 2010, p.47

²¹ This is outlined in CASCO toolbox (ISO/IEC 17000 series of standards). For more information, see http://www.iso.org/sites/cascoregulators/01_0_conformity-assessment-basic-concepts.html or ISO UNIDO pages 30-45.

Figure 1: ISO/ IEC Functional approach to Conformity Assessment²²



Generally, a conformity assessment scheme will comprise some combination of testing, inspection, and sampling at its core. These occur at the selection and determination stage – and are the main steps in gathering evidence that requirements are fulfilled. Once the evidence has been collected, certification under a scheme will be granted according to a review (sometimes by a third party) and a decision on whether to grant a statement of conformity based on the validity of the evidence gathered at the determination stage. Market surveillance may be part of some schemes under the surveillance stage, performed by regulatory authorities or by CABs.

An essential part of CAPs relates to assessment of the competence of bodies performing the activities of CAP. This is referred to as accreditation. In short, certification and other conformity assessment bodies are assessed by an authoritative body and may become accredited under an accreditation scheme when they fulfil certain criteria (for instance, as laid out in ISO/IEC 17065, 17020, 17025, 17024, 17021). Accreditation is important in helping regulators identify bodies which they may want to rely upon to conduct conformity assessment activities under a given scheme. A test result or certificate produced by an accredited body carries more weight – delivers more confidence – than from a body that is not.

The type of CAP applied will depend on the product in question, the level of risk entailed by non-compliance with the applicable regulation, and the national context of the scheme as well as supporting quality infrastructure. Importantly, different countries may have different appreciations of the risks of non-compliance.

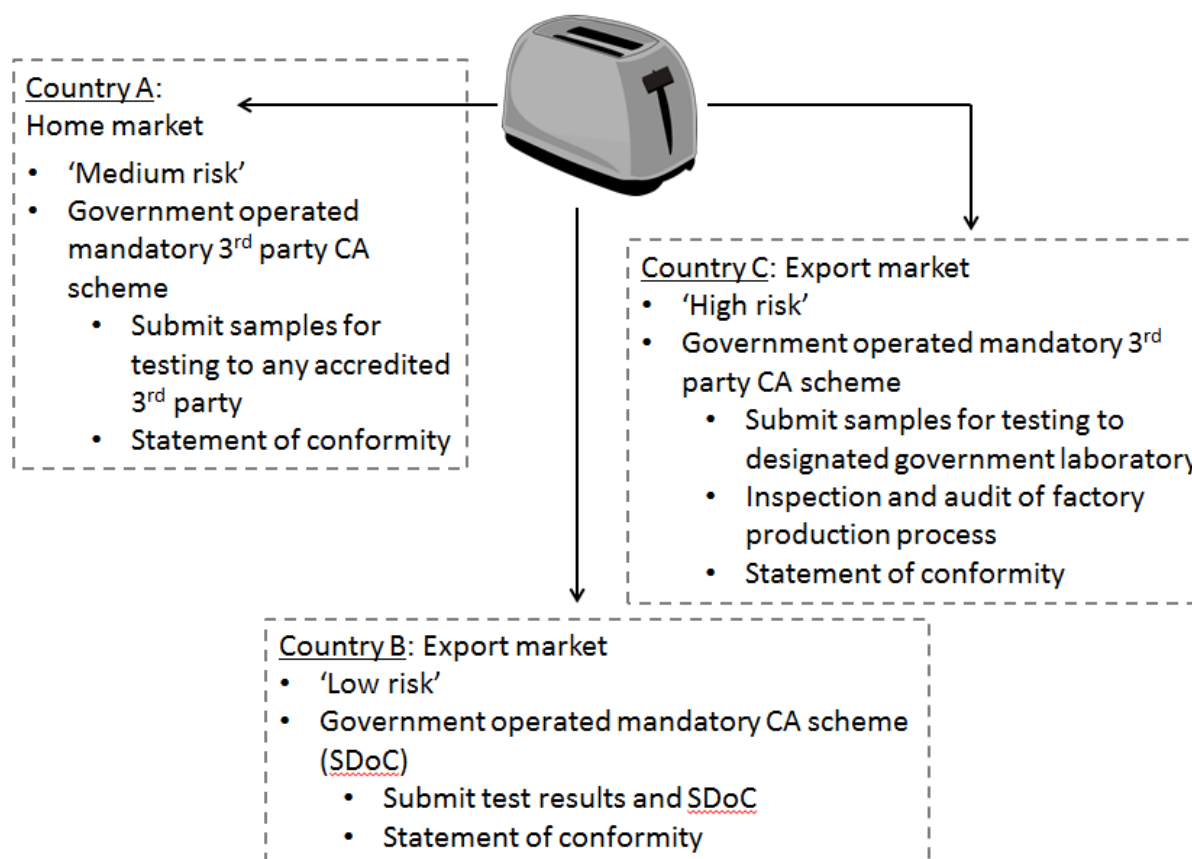
Recalling our toaster example, a toaster producer may conduct certain conformity assessment activities itself, like sampling and testing, (e.g. using an in-house laboratory – ‘first party’) to ensure the safety and quality of its toasters. These tests may be required by law or regulation in the country of production (Country A), or may be conducted to uphold the reputation of the toaster brand on the domestic market (quality management) or for other business purposes (e.g. to engage in transactions with certain customers).

In order to sell on its domestic market (Country A), the toaster producer may also need to obtain a certification mark under a mandatory conformity assessment scheme (See Figure 2). As a first step, the producer may submit samples of the toaster to any conformity assessment body that has been accredited to perform activities by the regulator owning the scheme. The conformity assessment body would usually begin by conducting tests to determine if the sample meets the specified requirements (in national technical regulations for toasters). The final step, assuming these various activities show that the toaster conforms, would be issuance of a statement of conformity (and the right to use the certification mark on the toasters, for example). This result

²² Source: ISO, 2014. See: http://www.iso.org/sites/cascoreregulators/01_0_conformity-assessment-basic-concepts.html and <http://www.iso.org/sites/cascoreregulators/documents/Annex%201%20-%20Conformity%20assessment%20-%20Functional%20approach.pdf>

would be recognized by the regulators operating the scheme, and the toasters would thus have permission to be sold on our producer's domestic market (Country A).

Figure 2: Trade in Toasters, different CAPs



The toaster producer may also export to another Country, B. In Country B, regulators do not believe that toasters pose a significant risk, and therefore only require that the producers submit to its regulators a supplier's declaration of conformity (SDoC), along with test results demonstrating compliance with the technical regulations of Country B. Assuming the producer has the capacity and facilities to test according to the technical regulations of Country B, it can simply conduct the tests itself and submit the SDoC to Country B regulators.²³ Country B regulators would then conduct a review and decide whether or not to grant permission for the toaster producer to use the conformity mark, for example, based on the test results provided by our toaster producer. Regulators in Country B might also choose to later conduct market surveillance activities to check for non-conformity based on samples on the market.

Another market, Country C, may also be a destination for exporters from our toaster producer. Country C may have encountered more serious accidents with household equipment because of generally lower quality electrical infrastructure. The scheme in Country C may require tests to be made on the samples of (imported and domestic) toasters by laboratories designated by the regulator, and are based exclusively in Country C. In addition to these tests, the scheme may also require an inspection and audit of the toaster producer's factory and production process. Only once these activities are completed, would the toaster producer be granted the statement of conformity, and have the right to use the conformity mark and sell in Country C.

²³ If not, the toaster producer may need to contract a third party, such as a CAB, to conduct the tests, even if this is not required by the conformity assessment scheme of Country D.

Each of these three hypothetical schemes (Country A, B, C) has different implications for the confidence of conformity in light of different views of the risk posed by toasters. Country B sees toasters as low risk, and has less strict CAP in place, while Country C views toasters as higher risk and therefore applies a stricter CAP. These differences have cost implications for our toaster producer, as well as for time to market. They each may impose different types of trade costs,²⁴ which may become a cause for trade concern (Section 3) for our toaster producer, and which could conceivably be discussed in the context of the TBT Committee (Section 4).

III. DISCUSSIONS OF CAP IN TBT COMMITTEE: OVERVIEW OF SPECIFIC TRADE CONCERNS

A. Method

One of the core functions of the TBT Committee is acting as a forum to address trade issues – these are referred to as STCs. These are concerns that one or several Members raise about the design or implementation of another Member's measure. While the practice of raising STCs has antecedents prior to the creation of the WTO in the work of the GATT TBT Committee²⁵, since 1995 and up to today STCs²⁶ represent a significant volume of the work of the WTO TBT Committee.²⁷ In most cases, STCs relate to measures that have been notified by Members.²⁸ STCs relate to technical regulations, standards, and CAP, as well as combinations of all three. While these discussions in the TBT Committee remain strictly between Members, many of the STCs raised are informed by prior exchanges between Members and their national industries about trade problems identified in other markets.²⁹

In order to shed light on the types of trade issues that are raised by Members with CAPs, we conducted a detailed analysis of TBT Committee records of STC discussions over the years 2010-2014.³⁰ We coded the minutes³¹ of the fifteen TBT Committee meetings held during this period to identify STCs related to CAP.³² We identified 102 STCs that are related to CAPs, out of a total of

²⁴ See, for example: van Tongeren, Bastien, and von Lampe, 'International Regulatory Cooperation, a Trade-Facilitating Mechanism.', above n 2; and Stephenson, *Standards and Conformity Assessment as Nontariff Barriers to Trade.*, above n 3, at p. 19.

²⁵ During meetings of the GATT TBT Committee from 1979-1994 (tasked with implementation of the GATT TBT Agreement, or "Standards Code"), discussions of trade problems with specific TBT measures took place under a standard agenda item: "Implementation and Administration of the Agreement". However, the scope of these discussions did not directly encompass conformity assessment procedures as such, since these were added to the scope of the WTO TBT Agreement as part of the Uruguay Round.

²⁶ The TBT Agreement does not envisage a procedure for STCs. This practice has developed within the framework of mandate of the TBT Committee set out in Article 13: "affording Members the opportunity of consulting on any matters relating to the operation of this Agreement or the furtherance of its objectives, and shall carry out such responsibilities as assigned to it under this Agreement or by the Members". The transparency provisions of the TBT Agreement create a framework for bilateral dialogue between notifying and concerned Members Articles 2.9 and 5.6 set the obligations for Members to notify and create a right for other Members to comment to these notifications in writing, comments which must be discussed upon request. Both the comments and the results of discussions must be taken into account by the notifying Member (see Articles 2.9.4 and 5.6.4). While the bilateral exchanges between Members remain informal, decentralized and in most cases confidential, the procedure of STCs has emerged as a public consultation between Members on both notified and non-notified measures. In 2009, the TBT Committee agreed on a procedure to streamline the discussion of STCs (G/TBT/1/Rev.12, para. 7.1, p. 43-44. A similar procedure for discussion of STCs exists in the Committee on Sanitary and Phytosanitary measures (SPS).

²⁷ For further detail on the role of the discussion of STCs, see Erik Wijkström, "The Third Pillar: Behind the Scenes, WTO Committee Work Delivers" (ICTSD, August 2015), <http://e15initiative.org/wp-content/uploads/2015/07/E15-Regulatory-Wijkstrom-final.pdf>.

²⁸ Between 2010 and 2014, 62% of all STCs were raised regarding notified measures.

²⁹ In discussion of STCs in the TBT Committee, Members often refer to concerns identified by their private sector, and some Members have put in place mechanisms to gather such concerns from national industries. Initial findings in: Karttunen, Marianna. 2015. "Private Sector Involvement in TBT Transparency: Preliminary Results from a Survey." European University Institute, Unpublished doctoral research, April.

³⁰ We follow a similar method to that used in: Erik Wijkström, Devin McDaniels, 'Improving Regulatory Governance: International Standards and the WTO TBT Agreement' (2013) 47 *Journal of World Trade*, Issue 5, pp. 1013-1046.

³¹ Minutes of the TBT Committee meetings from March 2010 to November 2014, see G/TBT/M/50 – G/TBT/M/64, inclusive.

³² An STC is coded as related to CAP when at least one concerned Member mentions in their statements: (i) concerns or questions about one or more of the procedures enumerated in the definition of CAP in Annex

197 STCs raised during this period.³³ We then classified the issues raised by the concerned Members – focusing on procedures³⁴ and disciplines of the TBT Agreement³⁵. Each of the STCs evaluated is unique, and the relative importance of trade issues with CAPs differs in each individual case. For some STCs, CAPs are the core of the trade problem raised by concerned Members, in others CAPs are one small aspect of a larger trade issue which may include concerns about technical regulations or standards.

The scope of this analysis has been limited in three ways to draw out the key trade issues flagged in STCs related to CAPs during the period in question.³⁶ First, the analysis only considers issues raised by concerned Members, and not the argumentation of the Member maintaining the measure. Second, we limit our analysis to the information that Members present in the Committee; there may be other trade issues related to CAPs that for whatever reason are not mentioned.³⁷ Third, the analysis only assesses new STCs; that is to say we only consider the issues discussed the first time an STC is raised in the TBT Committee.³⁸ Therefore, we may not reflect some developments or issues that arise in subsequent meetings. This analysis is necessarily a snapshot of trade issues related to CAPs, and aimed to give a simple overview of the most common challenges.

Despite these limitations, to our knowledge this paper is the first attempt to catalogue trade issues related to CAPs encountered and highlighted by governments, systematically and over an extended time-period. This paper is also the first to shed light on governments' views of how CAP relate to the disciplines of the TBT Agreement, using more than 100 real world case studies.

B. Stylized Findings

1. CAPs are the most onerous TBT measure

Our first main finding is that CAPs pose proportionally more trade problems than technical regulations. The relative shares of STCs over the years 2010-2014 that are related to CAPs on the one hand, and technical regulations and standards on the other, are presented in Chart 1. While there is no discernible trend in the share of CAP-related STCs over time, it is interesting to note that CAPs are an issue in more than half the STCs raised in every year except 2011 and 2012.

1.3 of the TBT Agreement (namely, sampling, testing and inspection; evaluation, verification and assurance of conformity; registration, accreditation and approval) or other related procedures (e.g. certification, supplier's declaration of conformity, hereafter SDoC); (ii) compliance with Articles 5-9 of the TBT Agreement; or, (iii) an international or regional system for conformity assessment (e.g. ILAC, IAF, IEC CA schemes).

³³ In other words, 95 STCs (48%) raised during this period did not address CAPs, and dealt exclusively with technical regulations or standards.

³⁴ We identify issues related to the procedures enumerated in the definition of CAP in Annex 1.3 of the TBT Agreement; namely: sampling, testing and inspection, evaluation, verification and assurance of conformity, registration, accreditation, approval, certification and SDoC.

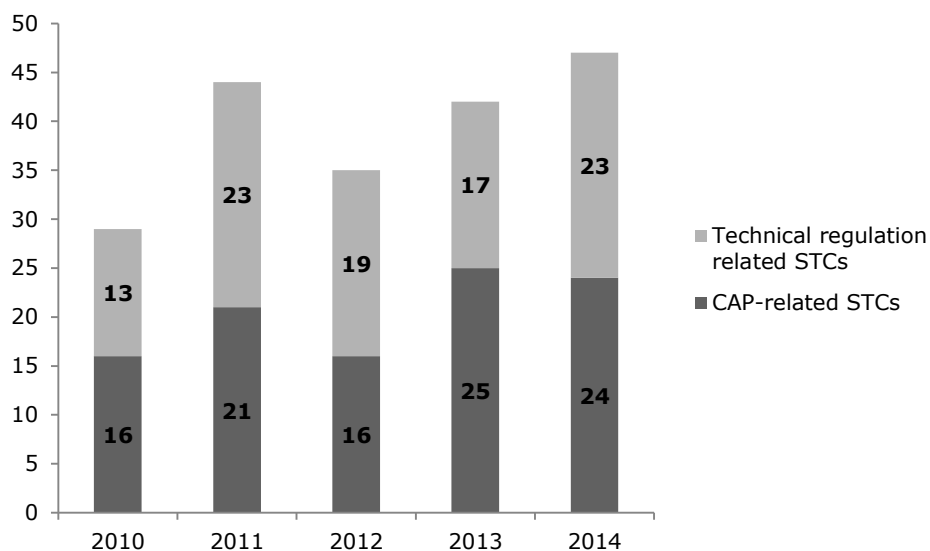
³⁵ We identify issues related to the six of the core disciplines of the TBT Agreement for CAP: non-discrimination (Art. 5.1.1), avoiding unnecessary barriers to trade (Art. 5.1.2), use of relevant guides and recommendations issued by international standardizing bodies (Art. 5.4), transparency (Art. 5.6), acceptance of the results of foreign conformity assessment procedures (Art. 6), use of international and regional systems for conformity assessment (Art. 9).

³⁶ It is important to clarify that although this paper conducts new analysis of publicly available data on measures discussed at the WTO, it is not a statistical analysis. At best, it is an informed – albeit subjective – analysis of the debate on conformity assessment procedures at the WTO which could lead to a more in-depth review and future research.

³⁷ The objective of this research is to highlight the issues deemed serious enough by Members to be worth raising in the TBT Committee. This leaves out all CAP issues that represent a burden on trade but are not brought to this multilateral fora, either because they are not important enough or because the Members prefer addressing issues in other settings including bilaterally, perhaps for political reasons.

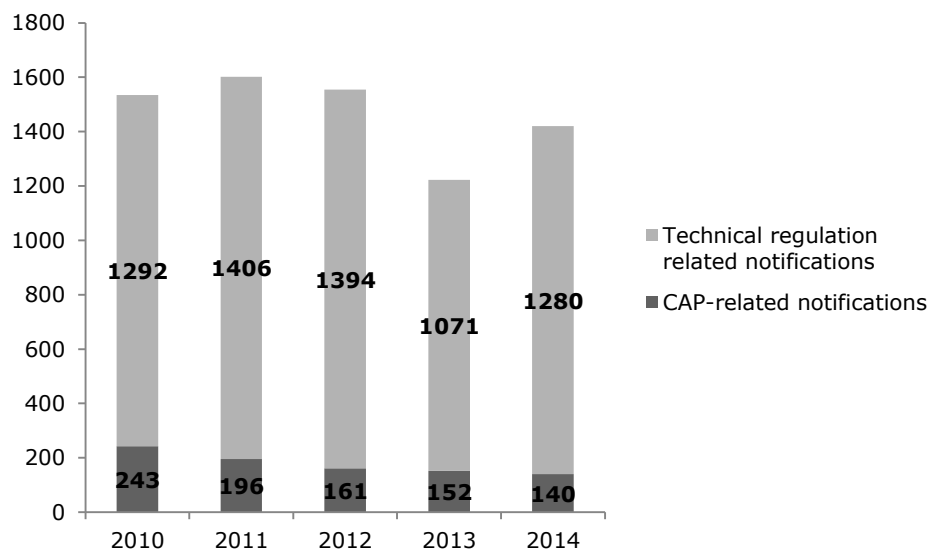
³⁸ It should be noted that more than half of all STCs are raised more than once in the TBT Committee. In fact, 58% of STCs raised in the TBT Committee from 1995 – 2014 were raised more than once. G/TBT/36.

Chart 1: CAP versus technical regulations STCs



This is particularly striking when compared to the share of notifications to the TBT Committee related to TR and CAP (Chart 2).³⁹ Less than 20% of notifications in 2014 related to CAP, while over 50% of the STCs discussed in the Committee that same year dealt with CAP. Similar shares are found in the years 2010-2013, as shown in Chart 2.

Chart 2: CAP versus technical regulations notifications



This discrepancy between the shares of CAP STCs and CAP notifications suggests in the first instance that CAPs are perceived by WTO Members as proportionally more burdensome a trade issue than technical regulations.⁴⁰ The figures show that STCs are relatively more concentrated in the area of CAPs as compared to technical regulations, despite much fewer notifications of CAPs by Members, suggesting that CAPs represent a higher burden to trade. This explanation is consistent

³⁹ Note that around 70% of STCs are raised about measures notified to the TBT Committee. See: G/TBT/36.

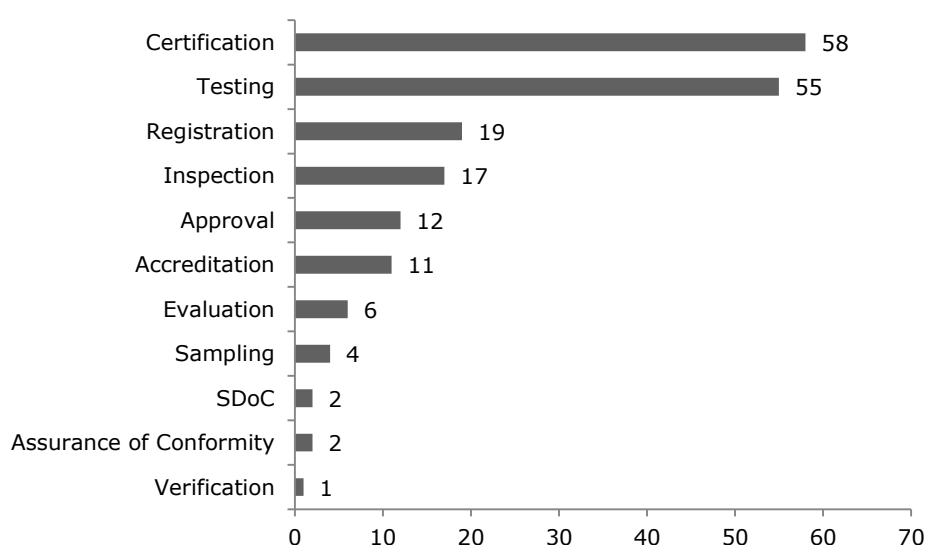
⁴⁰ We assume that Members comply with their WTO TBT notification obligations, and notify both technical regulations and CAPs in good faith. Therefore, we take the shares of notifications presented in Chart 2 as broadly representative of Members' stock of TBT measures that are subject to notification under the TBT Agreement. Alternatively, one could argue that these figures reflect that Members are less proficient in notifying CAPs as compared to technical regulations, for example, because they fail to acknowledge the CAP element of measure notified only as a technical regulation (when notifying, Members can indicate that measure is a technical regulation and/or a CAP), or because Members' notification authorities possess less or worse information about CAPs applied by their regulatory agencies (as compared to technical regulations).

with previous studies that have shown that CAPs are one of the most significant trade issues facing exporters.⁴¹ Of course, technical regulations and CAPs are related to one another, since a CAP will generally be used as part of enforcing compliance with a technical regulation. Therefore, to a certain extent it is not surprising that more concerns focus on CAPs, which represent the enforcement of rules.

2. Testing and certification cause greatest concern

Second, we find that testing and certification are far and away the procedures that cause the most trade problems for WTO Members, and that 85% of CAP-related STCs concentrate on one or both of these procedures. The procedures mentioned in STCs are illustrated in Chart 3, with certification⁴² and testing the number one and two issues for WTO members. The next more cited procedure, registration, is a term that is often used interchangeably with certification in the North American context. This suggests that concerns related to certification are even greater than as illustrated in Charts 3 and 4.⁴³

Chart 3: Procedures raising concern



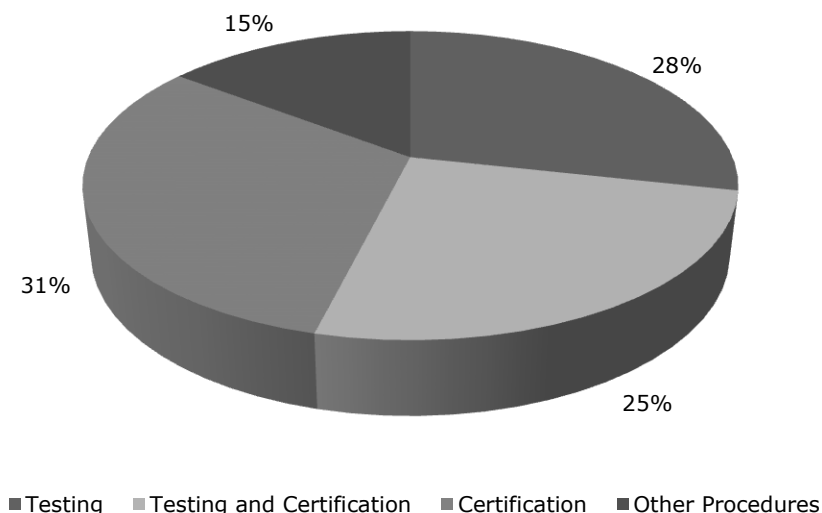
As outlined in Section 2 above, there is a strong link between testing and certification, for example, testing is often a component of certification. In order to understand better the STCs related to testing and certification we group them according to whether concerned Members cite testing, certification, or both in their statements (Chart 4). Overall, 85% of STCs related to CAP raised between 2010-2014 dealt in some way with testing and/or certification. Around one-quarter of these relate to both testing and certification.

⁴¹ The ITC business surveys found that conformity assessment was the most burdensome NTM experienced by exporters in 11 developing and least developed countries in 2010: Burkina Faso, Egypt, Jamaica, Kenya, Madagascar, Mauritius, Morocco, Paraguay, Peru, Rwanda and Uruguay (WTO, 2012, p. 112). See, e.g.: ITC cited in WTO, *Trade and Public Policies* above n 7.

⁴² It should be noted that 'certification' is not included in the TBT Agreement definition of conformity assessment procedures. 'Certification' was covered by the Tokyo Round Standards Code, the predecessor of the TBT Agreement. Nevertheless, certification appears to be relevant to the implementation of the TBT Agreement, based on the frequency of Members' references to this procedure in specific trade concerns. Note that 'registration' is included in the TBT Agreement definition of conformity assessment.

⁴³ However, the term 'registration' is used by a number of different Members in addition to 'certification'. In order to remain precise in describing Members' concerns, we have therefore maintained the distinction between the two terms.

Chart 4: Procedures of concern in CAP-related STCs⁴⁴



The emphasis on testing and certification (including registration) as barriers to trade corroborates the results of the survey led by the ITC on NTMs identified by firms located in developing and developed countries. This survey found that product certification and testing were the top two most burdensome measures (amongst TBT and SPS measures), with certification perceived as burdensome by 37% of firms, significantly higher than any other measure.⁴⁵ By way of comparison, our data finds that testing and certification were at issue in 44% of all TBT STCs raised from 2010-2014. While these two datasets are based on very different methodologies⁴⁶, these figures do draw attention to difficulties in the implementation of testing and certification procedures without causing trade problems for other Members.

3. Big three: China, EU and US

Third, we find a considerable exchange between China, the EU and the US concerning their respective CAPs. In our sample, a total of 23 Members were subject to STCs in the TBT Committee regarding their CAPs,⁴⁷ while 22 different Members raised CAP-related STCs.⁴⁸ There is a generally broad engagement of Members in CAP-related STC discussions, both geographically and in terms of levels of development.

Chart 5 shows the Members most frequently raising, and subject to, CAP-related STCs. In our sample, China is the Member most frequently challenged in CAP-related STCs. We note that the vast majority of the CAP-related STCs against China – fourteen out of fifteen (93%) – were brought by either the EU or the US, or both. As Chart 6 illustrates, the EU is most active in raising CAP-related STCs against China, while the EU and US rarely challenge one another. This follows a general trend of few STCs between the EU and US. This may be explained by the existence of regulatory cooperation arrangements and sector specific MRAs between the two Members, or the ongoing negotiations on TBT and CAP issues in the context of the Transatlantic Trade and Investment Partnership (TTIP), which together may reduce the tendency to raise STCs with one another.

⁴⁴ More than one procedure of concern may be cited by members in a CAP-related STC.

⁴⁵ ITC business surveys on NTMs, cited in WTO, *Trade and Public Policies.*, above n 7 at p.111-113.

⁴⁶ The ITC survey is based on results of interviews with firms operating in 11 developing countries and covers both SPS and TBT measures. Our data focuses on TBT measures but reflects all concerns raised by WTO Members in the TBT Committee.

⁴⁷ Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Ecuador, Egypt, EU (including EU member states), India, Indonesia, Korea, Malaysia, Mexico, Peru, Russian Federation, Saudi Arabia, Thailand, Turkey, United Arab Emirates, US, Viet Nam.

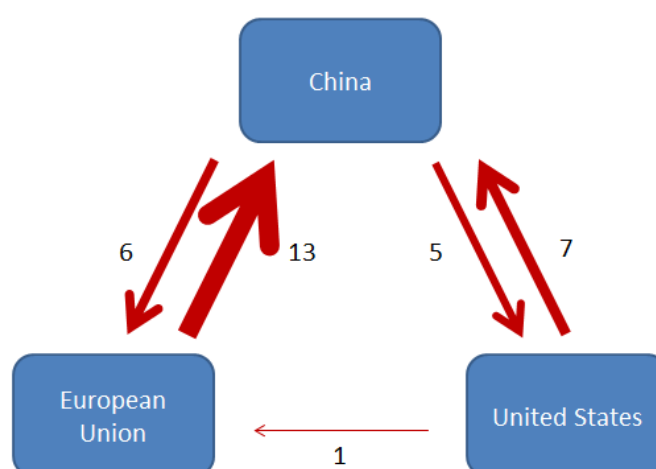
⁴⁸ Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, EU, India, Israel, Japan, Korea, Mexico, New Zealand, Panama, Peru, South Africa, Switzerland, Turkey, Ukraine, US

Chart 5: Top-five Members raising and subject to most CAP-related STCs

Members raising most CAP-related STCs
EU (41)
US (36)
China (16)
Japan (14)
Mexico (10)

Members subject to most CAP-related STCs
China (15)
Ecuador (11)
US (11)
EU (10)
Russian Federation (8)

Chart 6: CAP-related STCs between China, EU and US⁴⁹



4. Targeting electrical and electronic equipment, food, and chemicals

Finally, our analysis shows that trade in electrical and electronic equipment, foodstuff, and chemicals are the products most affected by CAP-related trade barriers. To observe the trends among the CAP-related STCs, we categorized the STCs under Harmonized System ('HS') Sections⁵⁰ to provide a broad indication of the product areas where CAPs raise concern.

Most CAP-related STCs refer to procedures applying to a specific product or product category, though some deal with measures that are crosscutting. As shown in the table below, CAP-related STCs deal most with electrical equipment (HS Section XVI). This HS Section includes products ranging from household equipment such as refrigerators or air conditioning to information security products such as security chips. The second product section which raised most concerns relates to prepared foodstuff, alcoholic beverages and tobacco (Section IV). Out of the 14 STCs which fit under this section, 10 concern alcoholic beverages (HS 22, Beverages, spirits and vinegar). The STCs under Section IV are to be combined with eight additional STCs which concern food products in general and might involve products from Sections I – IV. Finally products 'of chemical or allied industries' (Section VI) such as cosmetics, pharmaceuticals or chemical products in general were raised in 13 STCs.

⁴⁹ The direction of the arrow signifies the direction of the STC, from concerned to challenged Member.

⁵⁰ The Sections referred to are those set by the United Nations Commodity Trade Statistics Database, available at <http://unstats.un.org/unsd/tradekb/Knowledgebase/HS-Classification-by-Section>

Chart 9: Products subject of CAP STCs, by HS Section

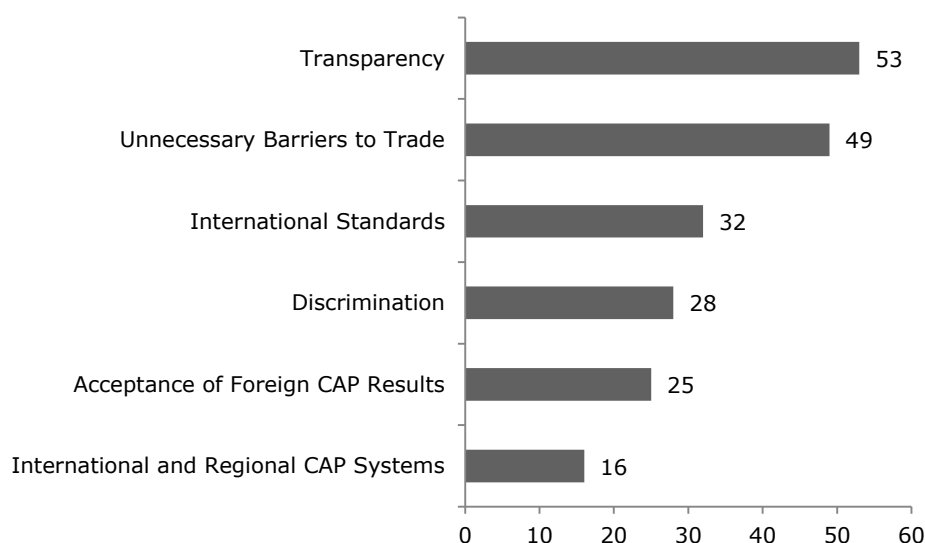
HS Category	Official Title of HS Section	Number of CAP STCs
General	N/A	7
General food products	N/A	8
Section I	Live animals; animal products	3
Section II	Vegetable products	3
Section III	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	0
Section IV	Prepared foodstuffs; beverages; spirits and vinegar; tobacco and manufactured tobacco substitutes	14
Section XV	Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of sparto or of other plaiting materials; basket ware and wickerwork	1
Section XVI	Mineral products	0
Section XVII	Products of the chemical or allied industries	13
Section XVIII	Plastic and articles thereof; rubber and articles thereof	5
Section XIX	Raw hides and skins, leather, fur skins and articles thereof; saddler and harness; travel goods, handbags and similar containers; articles of animal gut	2
Section XX	Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard; paper and paperboard and articles thereof	0
Section XXI	Textiles and textile articles	6
Section XXII	Footwear, headgear, umbrellas, sun umbrellas, walking sticks, seat sticks, whips, riding-crops and parts thereof; prepared feathers and articles made therewith; artificial flowers; articles of human hair	3
Section XXIII	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware	5
Section XXIV	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof, imitation jewelry, coin	0
Section XXV	Arms and ammunition; parts and accessories thereof	0
Section XXVI	Base metals and articles of base metal	4
Section XXVII	Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	21
Section XXVIII	Vehicles, aircraft, vessels and associated transport equipment	3
Section XXIX	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	5
Section XXX	Miscellaneous manufactured articles	7
Section XXXI	Works of art, collectors' pieces and antiques	0

IV. WHAT DO GOVERNMENTS SAY ABOUT CAPs?

This section presents our findings with respect to how Members characterize trade issues associated with CAPs in the framework of the TBT Agreement. Following our approach outlined in Section III.A, we coded TBT Committee minutes to identify the main issues concerned Members identify in CAP-related STCs, illustrated in Chart 5. We do not present the arguments of the Members maintaining the challenged CAPs, in line with our methodology. While a full range of issues relating to the implementation of the TBT Agreement do get raised by concerned Members in STCs, the two most prominent issues are avoidance of unnecessary barriers to trade and transparency.⁵¹

⁵¹ In most cases, Members generally refer to the issue or issues with the CAP that raises their concern. In a few cases, Members refer explicitly to the text of the TBT Agreement to point out potential inconsistencies of national measures. In eleven STCs, concerned Members cite Article 5.1.2 of the TBT Agreement on unnecessary barriers to trade; in five STCs concerned Members cite Article 5.1.1. on non-discrimination; and, in seven STCs concerned Members cite Article 5.6, on transparency.

Chart 5: Issues of concern regarding CAPs⁵²



It is worth repeating that discussion of STCs in the TBT Committee has no legal implication, and is not dispute settlement. In effect, discussion of STCs in the TBT Committee contributes to regulatory cooperation between Members on CAPs. By highlighting potential issues with specific CAPs in a multilateral setting, information is made available to all WTO Members which increases transparency and contributes to reducing trade costs. Discussions of STCs also help to increase alignment between different approaches to CAPs and regulation, for example, Members exchange views on what might be the appropriate level of strictness in a CAP to ensure adequate confidence of conformity, in light of the risks associated with a given product group. Members also use the TBT Committee forum to encourage one another to follow international standards, and rely on international or regional systems for CAP, which renders their respective CAPs more compatible and easily navigable for exporters. The multilateral setting, the public disclosure of discussions and the reiteration of concerns sometimes over several years creates a source of peer pressure towards aligning domestic measures with WTO requirements.

The rest of this section provides an overview of the issues raised by governments with CAPs in the TBT Committee. It attempts to answer the question: 'how do governments characterize different types of trade problems related to CAPs, in light of TBT Agreement framework?' The analysis in this section is non-exhaustive in that we do not aim to give a comprehensive overview of all types of concerns raised nor provide details about all CAP-related STCs which address a given issue, instead providing a high level summary. The examples provided in footnotes are meant to serve exclusively as illustration of Members' use of the TBT Committee as a space for regulatory dialogue in the area of CAPs.⁵³ Because transparency and unnecessary barriers to trade are the two main issues (Chart 5), additional detail is included on these two issues, to illustrate the range of different sub-issues which are encountered by Members.

A. Unnecessary barriers to trade

As already mentioned, Members frequently question whether the procedures under discussion may create unnecessary barriers to trade (Chart 5). This subsection presents examples of potential unnecessary barriers to trade in CAPs, as identified by Members. For illustrative purposes, we have identified four general categories of sub-issues: proportionality of CAP to risk; duplication; concerns about the frequency, quantity and period of validity of procedures; and concerns explicitly about the extra burdens, costs and delays caused by CAPs. These sub-issues are not

⁵² This chart counts the number of times that an issue is raised in CAP-related STCs. It should be noted that several issues may be raised in the same STC.

⁵³ The reference to a CAP-related STC in this section is for illustrative purposes only, and does not prejudice the merits of arguments made by concerned Members about the possible consistency of the CAP with the TBT Agreement, nor the importance of the STCs in terms of trade friction or trade volumes.

mutually exclusive; to the contrary they are related and Members often raise more than one issue in any given STC, and in various combinations. The categories are designed to help the reader understand what Members perceive as potential unnecessary barriers to trade in CAPs.

1. Proportionality of CAP to risk

In certain STCs, Members question whether a given CAP is too strict in light of the risks of nonconformity. As highlighted in Section 2.2 above, Article 5.1.2 mentions '... that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary (...) taking account of the risks nonconformity would create.' In this sense, concerned Members sometimes argue that the low risk associated with a particular product, in light of the objective of the measure at issue, calls for a less strict or burdensome procedure.⁵⁴ Along similar lines, the stringency of a given CAP is occasionally questioned in light of the expected use of a product.⁵⁵ Moreover, Members may also question the distinction between products on the basis of their risk, and the associated conformity assessment procedures linked to that classification.⁵⁶

2. Duplication

Independent of questions of risk, Members also voice concerns with what they perceive to be unnecessary duplication of procedures. Different forms of duplication are highlighted by Members, for example: the need to perform the same or similar procedures more than once to get market access⁵⁷; a requirement for in-country testing when testing has already been performed by internationally accredited laboratories under international systems⁵⁸; duplication between national and regional CAPs⁵⁹; and, in general due to overlaps in CAPs leading to duplication.⁶⁰

3. Frequency, quantity or period of validity of CAPs

Other concerns linked to potential unnecessary barriers to trade emphasize details of procedures, such as: the frequency with which they need to be performed; the sheer number of procedures; or the period of their validity. With respect to frequency, concerns are voiced about the need to repeat testing or other procedures at a certain rate of regularity (e.g. per consignment or per month) which the importing Member deems to be excessive.⁶¹ Another type of concern relates to the quantity of different procedures required, for example, the need to undergo a range of different tests or inspections.⁶² Lastly, the time-period for which a specific result is considered valid under a given conformity assessment scheme is also a concern (e.g. a test result is only considered valid for two years, and then needs to be performed again).⁶³

⁵⁴ India - Electronics and Information Technology Goods (Requirements for Compulsory Registration) Order, 2012 (ID 367). See G/TBT/M/59, paras 2.7-2.8.

⁵⁵ Italy - Testing requirement on import of steel cutlery products (ID 395), G/TBT/M/61, para 2.6.

⁵⁶ Colombia - Draft Ministry of Commerce, Industry and Tourism Decree "Restructuring the National Quality Subsystem and amending Decree No. 2269 of 1993" (ID 432) See G/TBT/M/63, para 3.25.

⁵⁷ China - China Food and Drug Administration (CFDA) EMC Enforcement Notice for medical devices of 19 December 2012 (ID 387).

⁵⁸ Indonesia - Technical Guidelines for the Implementation of the Adoption and Supervision of Indonesian National Standards for Obligatory Toy Safety (ID 328). Para G/TBT/M/55, para. 43-44.

⁵⁹ Kingdom of Saudi Arabia - Certificate of Conformity (not notified) and GSO marking requirements for toys (ID 435). See: G/TBT/M/63, para. 3.37-8

⁶⁰ Mexico - Draft Mexican Official Standard PROY-NOM-032-ENER-2013: Maximum electrical power limits for equipment and appliances requiring standby power. Test methods and labelling (ID 406). See G/TBT/M/61, para 2.34.

⁶¹ United States - Formaldehyde; Emissions Standards for Composite Wood Products; Third-Party Certification Framework for the Formaldehyde Standards for Composite Wood Products (ID 430). See G/TBT/M/63, para 3.20; Ecuador - Certification of Ceramic Tiles II (ID 419). See G/TBT/M/62, para 2.49.

⁶² Indonesia - Draft Decree of Minister of Industry on Mandatory Implementation of Indonesia National Standard for electrolysis tin coated thin steel sheets (ID 303). See G/TBT/M/53, para 138-140.

⁶³ Australia - Joint governments' response to the 2010 Independent Review of the Water Efficiency Labelling and Standards Review Water Efficiency Labelling and Standards (WELS) scheme consultation paper (ID 366). See G/TBT/M/58, para 2.45

4. Delays, costs and burdens for producers

Members also explicitly refer to the extra delays, costs and burden that CAPs represent for producers. While the three sub-issues outlined above (e.g. duplication, or frequency of procedures) are indirectly concerns about increases in trade costs due to CAPs, Members also sometimes explicitly raise questions about the high costs of certification or other fees.⁶⁴ Delays in performing CAPs by the importing Member, including due to limited domestic capacity or quality infrastructure, have additionally been highlighted as potential barriers to trade.⁶⁵ The highly complex nature of certain CAPs has also sometimes been raised as a concern.⁶⁶ More generally, concerns are voiced about the burdensome and costly nature of procedures, which could possibly create unnecessary barriers to trade.⁶⁷

B. Transparency

As described above (Section 3), the data gathered for this research indicates that the share of STCs raised concerning CAPs is very close to that of STCs concerning technical regulations, while there are much fewer notifications of CAPs in comparison to technical regulations. Members mentioned transparency as an issue in around 52% of CAP-related STCs in the period under examination. This underlines the importance of STCs as a tool to increase transparency and ensure an exchange of comments about CAPs.

1. Request for notification, for opportunity to comment

The TBT Committee is sometimes used by WTO Members as a platform to remind their trading partners of their transparency obligations under the TBT Agreement. Members frequently raise concerns about the lack of notification of CAPs, an incomplete notification or a notification made under the wrong format, underlining in particular the related loss of an opportunity to comment.⁶⁸ Furthermore, Members may use the multilateral setting provided by the TBT Committee to bring attention to a measure that they consider was notified under the wrong format. For instance, notifications made under emergency procedures without justification could deny other Members the opportunity to comment on a draft measure.⁶⁹

2. Requests for clarification

STCs also serve the purpose of obtaining clarification on the requirements set in CAPs.⁷⁰ A request for clarification made in the Committee (as opposed to bilaterally) extends the benefit of transparency to all WTO Members. In addition, the multilateral forum – in presence of all WTO Members – is sometimes used to provide additional pressure for the regulating Member to respond to the request and is often referred to when an insufficient response was received at the bilateral level.

3. Request for longer transition period

Another common transparency related concern is a request for a longer transition period in line with the requirements of Article 5.9 to provide a "reasonable interval" between publication of

⁶⁴ Brazil - Higher Risk Medical Devices Good Manufacturing Practice (GMP) Certification (ID 429). See: G/TBT/M/63, para 3.18.

⁶⁵ Turkey - New conformity assessment procedures for pharmaceuticals (ID 264), G/TBT/M/50, para.33; Ecuador - Resolution establishing the 'General conformity assessment framework for Ecuador' and the 'Handbook of procedures to be observed prior to all stages of the customs clearance, marketing and market surveillance of manufactured, imported and marketed goods subject to Ecuadorian technical regulations (ID 398). See: G/TBT/M/61, para. 2.14.

⁶⁶ European Union - Directive 2004/24/EC on Traditional Herbal Medicinal Products (ID 265), G/TBT/M/51, para 3-6.

⁶⁷ Thailand - Draft Thai Industrial Standard for Ceramic Tiles (TIS 2508-2555) (ID 401). See: G/TBT/M/61, para 2.20.

⁶⁸ India - Toys and Toy Products (Compulsory Registration) Order (ID 309). See: G/TBT/M/54, para.79.

⁶⁹ Ecuador - Cosmetic products (ID 417). G/TBT/M/62, para. 2.38

⁷⁰ Canada - Proposed Amendment to the Energy Efficiency Regulations (ID 282), G/TBT/M/52, para 44.

requirements and their entry into force, to ensure that manufacturers have the time to adapt production to new requirements in export markets.⁷¹

C. Non-discrimination

In the examined period, Members also raised concerns about possible discriminatory aspects of CAPs, albeit less frequently than concerns about unnecessary barriers to trade and transparency.⁷² Among the STCs covered by this study, discrimination-related concerns often touch upon two types of issues: On one hand, exporting Members show concern that certain procedures do not apply to domestic producers, noting the discriminatory effects this may have.⁷³ On the other hand, Members also question the different, less burdensome or expedited procedures for domestic producers. For instance, the availability of facilitated procedures or exemptions only to domestic producers may be considered as discriminatory by concerned Members.⁷⁴ Members also voice concerns about different and possibly more burdensome procedures applying to foreign as compared to domestic suppliers.⁷⁵

Finally, Members occasionally highlight how the operation of CAPs may potentially discriminate between domestic and foreign suppliers, if the CAP creates de facto additional costs for the latter.⁷⁶

D. International standards, guides and recommendations

In line with the provisions of Article 5.4 of the TBT Agreement, Members highlight existing international standards, guides or recommendations that could be relevant for the CAPs envisaged or applied by their trading partners. In particular, Members use the multilateral forum to gather information about the relationship (and degree of alignment) between a given Member's CAP and international standards.⁷⁷ Members also identify in their concerns what they perceive as specific deviations from relevant international standards in other Member's CAPs.⁷⁸ Finally, the TBT Committee may also serve as a setting for Members to encourage their trading partners to recognize CAPs that have been performed in line with international standards.⁷⁹

⁷¹ Chile – Safety for Printers and Energy Efficiency for Printers (ID 403), G/TBT/M/61, para 2.25.

⁷² See Chart 5 above, discrimination is raised in 28 of the 102 CAP-related STCs, whereas necessity is raised in 49 of these CAP STCs.

⁷³ India - New Telecommunications related Rules (Department of Telecommunications, No. 842-725/2005-VAS/Vol.III (3 December 2009); No. 10-15/2009-AS-III/193 (18 March 2010); and Nos. 10-15/2009-AS.III/Vol.II/(Pt.)/(25-29) (28 July 2010); Department of Telecommunications, No. 10-15/2009-AS.III/Vol.II/(Pt.)/(30) (28 July 2010) and accompanying template, 'Security and Business Continuity Agreement') (ID 274). See: G/TBT/M/52, paras. 9-11 ; Ecuador - Draft Technical Regulation of the Ecuadorian Standardization Institute (RTE INEN) No. 047: 'Metal cable tray, electrical conduit and trunking systems' (ID 454). See: G/TBT/M/64, para. 2.67.

⁷⁴ China – Innovative medical instruments and provisions for simplifying application materials for re-registration of medical instruments (ID 386). See: G/TBT/M/60, para. 3.30 ; Korea – Good Manufacturing Practice requirements for cosmetics (ID 292). See: G/TBT/M/53, paras. 76-78.

⁷⁵ European Union – Directive 2011/62/EU of the European Parliament and of the Council amending Directive 2001/83/EC on the Community code relating to medicinal products for human use, as regards the prevention of the entry into the legal supply chain of falsified medicinal products (ID 334). See: G/TBT/M/56, para. 16.

⁷⁶ Viet Nam – Conformity assessment procedures for alcohol, cosmetics, and mobile phones (Notice regarding the import of alcohol, cosmetics and mobile phones, No.: 197/TB-BCT (6 May 2011) and Ministry of Finance No.: 4629/BTC-TCHQ on the importation of spirits and cosmetics (7 April 2011) (ID 316), G/TBT/M/54, para 124-131; United States – Hazardous Materials: Transportation of Lithium Batteries (ID 262). See: G/TBT/M/50, para. 21.

⁷⁷ China – National Standard of the P.R.C., Direction for Use and Labels for Carpets (ID 280), G/TBT/M/52, para 31.

⁷⁸ Korea – KS C IEC61646:2007 Standard for Thin-film Solar Panels (IMS ID 271)G/TBT/M/51, paras. 33-34; China - Safety Requirement for Lithium Ion Cells and Batteries used in Portable Electronic Equipment (ID 425), G/TBT/M/63, paras. 3.4-3.5.

⁷⁹ United States – Test procedures for high density discharge lamps (ID 341), G/TBT/M/56, para 37; Thailand - Certificate Requirement and Administrative Measure Relating to Importation of New Pneumatic Tyres of Rubber into the Kingdom of Thailand B.E. 2555 (2012) (ID 369), G/TBT/M/59, para 2.20-2.23.

E. Acceptance of foreign results

In certain cases, Members use STCs to request acceptance of foreign conformity assessment results, in line with Article 6 of the TBT Agreement. The request for acceptance of foreign results is often made in relation with other concerns, such those related to unnecessary duplication (Section 4.A.2 above) or the suggestion to bring procedures line with international standards (Section 4.4) or use international or regional systems for CAPs (Section 4.6). Accreditation is often an important element in these discussions. For example, Members request that CAP results generated by accredited bodies in their territory be accepted by trading partners for the purposes of their CAPs.⁸⁰ In other examples, Members highlight how non-acceptance of foreign results can lead to delays or potential unnecessary barriers to trade.⁸¹

F. International and regional systems

Finally, Members sometimes make reference in STCs to various international systems of CAPs, such as voluntary arrangements for cooperation between accreditation bodies, laboratories and certification bodies. This is the least frequent issue raised by Members (Chart 5). On the whole, concerned Members propose the use of these systems as a way of avoiding duplication of conformity assessment or the need for in-country testing, by facilitating the acceptance foreign CA results, as well as overcoming limited domestic conformity assessment infrastructure, thus helping to facilitate trade. For example, Members suggest the use of international systems as a less burdensome alternative to their trading partners, for example testing by accredited labs according to international standards instead of in-country testing.⁸² In other examples, Members point out that relying on international systems would help overcome problems of insufficient domestic capacity to conduct testing or other procedures.⁸³ In a few limited cases, Members raise concerns about the trade and market access implications of applying procedures which may be inconsistent with international schemes to which they subscribe.⁸⁴ Overall, the STC discussions do not suggest trade concerns about the operation of these systems or arrangements per se, but rather their non-application to specific domestic CAPs.

V. DISCUSSION

Based on the trends observed in the 100-plus CAP-related STCs raised in the TBT Committee during 2010-2014, this section reviews the four main findings of this paper, and identifies future avenues for research.

First, we find that CAPs create proportionally more trade problems for Members than technical regulations. This underlines that in practice, reaching harmonized (or equivalent) technical regulations is not necessarily the first best solution for facilitating trade: regardless of the degree of symmetry between regulations, CAPs are still perceived by WTO Members as a key impediment for market access. Focusing on different types of CAPs, our analysis then finds that testing and certification are the procedures that give rise to greatest concern. These findings corroborate previous research,⁸⁵ but make a novel contribution in that we use new data on government to government discussions in the TBT Committee to conclude that CAPs are perceived

⁸⁰ China – Regulations of the PRC on Certification and Accreditation (promulgated by Decree No. 390 of the State Council of the PRC on September 3, 2003) (ID 270), G/TBT/M/51, para 29-31.

⁸¹ Indonesia - Mandatory Indonesia National Standard (SNI) for Glazed Ceramic (ID 400), G/TBT/M/61, para 2.18.

⁸² United States – Application of third party testing requirements; reducing third party testing burdens (ID 354). G/TBT/M/57, para.58.

⁸³ Argentina - Resolution 453/2010 establishing mechanisms in order to eliminate dangers arising from the use of inks with a high lead content in graphic products (ID 325), G/TBT/M/55, para. 31.

⁸⁴ United States – Conditions and Criteria for Recognition of Accreditation Bodies & Laboratories for the Energy Star Program (ID 268). See: G/TBT/M/51, para. 21

⁸⁵ In particular, it is consistent with the ITC survey on NTMs (ITC cited in WTO, *Trade and Public Policies* above n 7.). See, more generally: Fliess and Schonfeld, 'Trends in Conformity Assessment Practices and Barriers to Trade: Final Report on Survey of CABs and Exporters.', van Tongeren, Bastien, and von Lampe, 'International Regulatory Cooperation, a Trade-Facilitating Mechanism.', above n 2, and Stephenson, *Standards and Conformity Assessment as Nontariff Barriers to Trade*, above n 3.

as imposing significant burdens on international trade, especially in the areas of testing and certification.⁸⁶

Second, our analysis suggests that while a full range of issues regarding consistency with the TBT Agreement are elaborated in CAP-related STCs, amongst these, concerns about transparency and unnecessary barriers to trade are most prominent. We find that Members use four main lines of argumentation to highlight the potential unnecessary character of a CAP: proportionality of CAP strictness to the risk at hand; duplication of procedures; concerns about frequency, quantity or period of validity of CAPs; and finally, delays and burdens for producers. With respect to transparency, members are mainly concerned about the lack of notification and associated opportunity for comment. While discussions of STCs in the TBT Committee helps build mutual understanding of CAPs, they often reveal that Members have very different views about what is 'necessary' and what is 'unnecessary' to give adequate confidence of conformity, in light of different perceptions of risk and different national realities and levels of quality infrastructure in place. Clearly, more transparency would be valuable for all Members, in terms of greater and timelier notification of CAPs.

Third, while we find that wide range of Members are involved in STC discussions of CAPs, there is a considerable exchange between China, the EU, and the US. China is the Member most frequently challenged in CAP-related STCs, and 93% of these STCs were brought by the EU or the US, or both together. On the other hand, we find negligible trade concerns between the EU and US regarding CAPs, perhaps reflecting the existence of regulatory cooperation arrangements and efforts to implement sectoral MRAs between the two.⁸⁷ There may also be less willingness to raise concerns in light of the ongoing bilateral free trade negotiations under the proposed TTIP, in which technical barriers to trade features as a core issue.⁸⁸

Fourth, our analysis finds that trade in electrical and electronic equipment (e.g. ranging from household equipment such as refrigerators or air conditioning to information security products such as security chips), foodstuff, and chemicals are the products most affected by CAP-related trade barriers.

Turning to approaches to facilitate trade in the area of CAPs, we find that Members use the TBT Committee to promote the use of international standards and international and regional systems for conformity assessment (including accreditation) by their trading partners. While there are cases where Members do flag concerns about another Member's lack of reliance, for example, on ILAC/IAF Mutual Recognition Arrangements or IEC conformity assessment systems, such systems and arrangements are not mentioned in the TBT Committee as a source of trade problems per se. Rather, Members' statements suggest that trade problems arise due to the non-use of these systems by regulators when other Members perceive such systems would be an appropriate solution for facilitating trade. Our results also highlight the importance of the use of international standards, guides and recommendations as the basis for CAPs. Using international standards helps provide a common understanding of how to undertake the activities of conformity assessment and ensure due process therein, such as with respect to sampling methods or accreditation of competent bodies, and helps avoid barriers to trade in CAPs. However, given the high concentration of STCs related to testing and certification, it may be important to consider how such international arrangements and systems, and international standards, can further contribute to overcoming testing and certification related trade barriers, including for specific product sectors. In addition, the extent to which international standards and international and regional systems for conformity assessment can support Members at different levels of development and with very different capacities in quality infrastructure is not always apparent, and may merit additional consideration. It may not be sufficient or appropriate for Members to simply rely on international systems in place of domestic quality infrastructure. Finally, the fact that Members are increasingly emphasizing CAPs in regional and preferential trade agreements⁸⁹ suggests that there may be unrealized opportunities for using international arrangements, systems and standards to reduce barriers to trade in CAPs.

⁸⁶ The ITC survey is based on results on interviews with firms operating in 11 developing countries and covers both SPS and TBT measures. Our data focuses on TBT measures but reflects all concerns raised by WTO Members in the TBT Committee.

⁸⁷ Jacques Pelkmans, Anabela Correia de Brito, and Belgium) Centre for European Policy Studies (Brussels, *Transatlantic MRAs: Lessons for TTIP?*, 2015, <http://www.ceps.eu/system/files/SR101MRAs.pdf>.

⁸⁸ Egan and Pelkmans (2015), 'TTIP's Hard Core: Technical barriers to trade and standards', Paper No. 13 in the CEPS-CTR project 'TTIP in the Balance' and CEPS Special Report No. 117.

⁸⁹ See, for example: "Report by the Chairperson of the TBT Committee on 8 March 2016 *Thematic Session on Conformity Assessment Procedures*", G/TBT/GEN/190; also see footnote 9.

When considering CAP-related STCs, it is important to keep in mind the primary objective of CAPs which is to provide regulators with confidence that products conform to regulations or standards (and meet related health, safety and environmental objectives, amongst others). Taking this into account, concerns related to the procedural challenges created by CAPs (e.g. duplication, delays or transparency-related issues) may be easier to address through joint efforts of regulatory cooperation, within the TBT Committee or other fora. However, concerns related to different risk perceptions and proportionality of CAPs to risk, which are more linked to history, preferences and regulatory culture, may be more difficult to address.

By shining a spotlight on previously unexamined trade burden of CAPs as seen through TBT Committee discussions, this study calls for further research on the trade effects of CAPs, which has received scant academic interest to date. CAP-related STCs can be considered as one metric of contexts in which trade effects are most significant for WTO Members. In this sense, the types of CAPs, the TBT Agreement issues and the products raising most concern, as well as the Members most often challenged in CAP-related STCs could be therefore used as a basis to estimate areas in which CAPs may be most burdensome. Future research could usefully focus on why testing and certification are such persistent trade barriers, and the effectiveness of existing tools, systems and standards to surmount these barriers. In addition, this paper has not considered how firms of different sizes experience trade barriers due to CAPs. One Member's submission to the TBT Committee noted that SMEs face particular difficulties in meeting CAPs in export markets, especially due to the additional costs imposed.⁹⁰ Future research could assess in greater depth how CAPs affect trade costs, and how this varies by firm size. Finally, future research could provide additional details or case studies of the issues raised by Members in the framework of the TBT Agreement, so as to shine light on why testing and certification pose significant and growing trade challenges. Overall, the scrutiny of TBT Committee minutes conducted for this study confirmed to us that the Committee is actively used as a platform between Members to raise their concerns fitting under the scope of the TBT Agreement. To measure the results of this regulatory dialogue that takes place on CAP-regulated concerns, further research could help conclude to what extent the STC discussions actually do result in a change in challenged CAPs and therefore how they serve as a tool to minimise trade costs.

⁹⁰ Submission from the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, "Proposal on the Recognition and Acceptance of Conformity Assessment Results", G/TBT/W/417/Rev.1, 10 July 2015.