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Product Standards in Preferential Trade Agreements

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MODULE 8: PRODUCT STANDARDS IN PREFERENTIAL TRADE AGREEMENTS

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Learning Objectives

1. Acquire an understanding of the economic costs and benefits associated with product standards, and the extent to which they have the potential to impact regional and international trade flows.
2. Develop familiarity with recent empirical work on standards and trade, particularly as it examines the effectiveness of policies such as regional and international harmonization, and mutual recognition.
3. Understand how preferential agreements on standards may or may not contribute to furthering trade liberalization.
4. Acquire an understanding of the interactions between the main components of national, regional, and multinational standards systems.

Introduction

With the decline in many tariffs in recent decades through successive waves of unilateral, regional, and multilateral liberalization, non-tariff measures in general are becoming more important as potential barriers to trade. The multilateral trading system, as well as an increasing number of preferential agreements, gives special attention to product standards as one particular type of potential non-tariff barrier. While the WTO Agreements set out general rules for the design and implementation of product standards, it has in fact been within regional contexts that the main instruments of liberalization in this area—harmonization and mutual recognition—have been deployed. At the same time, these instruments are not free from risk in terms of their compatibility with the broader aim of multilateral liberalization: preferential standards areas involving mostly developed countries can lead to specifications that are overly complex or burdensome from the point of view of many developing countries, and could be perceived as locking them out of vital international markets (Baldwin, 2000). It is therefore crucial for policymakers and trade policy practitioners to understand the issues that product standards raise in the regional integration context, and in particular the challenges developing countries can face in dealing with foreign standards as part of their increasing integration in the world economy.

Although product standards are widely recognized as having potential connections to regional and international trade flows, it is important to be clear from the outset about an important difference with respect to traditional trade barriers, such as tariffs. Whereas tariffs are clearly protectionist in intent and effect, product standards are not always protectionist from either point of view. Indeed, even when standards have protectionist effects, they are rarely motivated solely by protectionist considerations. Product standards often represent a quasi-regulatory means of promoting an important public policy objective, such as environmental protection, consumer safety, food quality, or compatibility between different apparatus. As a result, this paper looks at ways in which it might be possible to achieve a better balance between these important objectives, and the often unintended costs that some standards can impose on international trade.

Product standards within the regional integration context can be approached from a number of different perspectives. In order to give some general context, the next part of this chapter provides a brief overview of the relationship between product standards and trade. Next, we consider in greater detail the policy measures available to deal with standards in preferential agreements, in particular mutual recognition and harmonization. We also look at broader issues of institutional coordination and regional cooperation. Finally, we address the interface between regional and multilateral approaches to standards.

Product Standards and Trade: An Overview²

It is common to distinguish three broad groups of standards based on the types of activities to which they apply (ISO, 2006 and 2008). *Product standards* relate to the characteristics of goods or services, in particular as they relate to aspects such as quality, safety, and fitness-for-purpose. A simple example of a product standard is the US Food and Drug Administration's limit of one part per million of methyl mercury (a potential toxin) in fish for human consumption. The second group of standards is *process standards*, which apply to the conditions under which goods or services are produced, packaged, or refined. An example is the production of dairy products without hormones: milk from hormone free cows is indistinguishable from milk produced from cows treated with hormones, but only those farms

² For an overview of policy issues in this area, and a review of empirical work, see WTO (2005).

respecting a particular set of production conditions can describe themselves as “hormone free”. The final group of standards relates to *management systems*. They assist organizations manage their operations, and create a framework within which the requirements of product and process standards can be consistently met. A well known example is the ISO 9000 series of quality standards.

Box 1. What Are Meta-Standards?

Closely associated with standards are the processes of quality assurance employed by users in order to affect and manage compliance. Indeed, a ‘new’ category of standards has evolved that define and describe these so-called meta-systems. As such meta-standards do not concern a specific product or production process but rather overall principles and rules to follow in broad areas of activity, for instance the ISO 9000 series of standards on quality management systems, and the ISO 14000 series on environmental management systems. In certain industries, compliance with these standards is itself becoming a commercial necessity, alongside more traditional product and process standards. For instance in relation to food safety, meta-standards include hazard analysis and critical control point (HACCP), good manufacturing practices (GMP), good agricultural practices (GAP), and ISO 22000.

Source: Henson and Jaffee (2007)

A well-functioning standards system will usually incorporate elements of all three types of standards. In this paper, however, we focus exclusively on product standards. We consider standards applying to all kinds of products, from primary produce and agricultural products, to sophisticated manufactured goods such as electrical equipment. In the remainder of this section, we briefly discuss the rationale for product standards, before moving to a more detailed discussion of how they are designed and implemented.

Box 2. Product Standards are Numerous, Widespread, and Growing in Importance

Product standards represent an important and constantly growing set of regulatory measures with potential trade effects. The available evidence suggests that they cover all sectors, from simple agricultural products (Disdier et al., 2008) to the most complex electronic goods (Moenius, 2007). Many countries produce their own standards, and are also increasingly involved in efforts aimed at regional or international standardization. Before looking in more detail at the regional dimension of standards and their trade effects, it is useful to get an idea of the phenomenon’s extent and development over recent years via a few stylized facts:

- The International Organization for Standardization (ISO) comprises 3,000 working groups and committees, and has an annual budget of around \$100m (Moenius, 2005).
- ISO has issued around 15,000 international standards (WTO, 2005).
- In looking at national product standards in a selection of OECD countries, Moenius (2005) reports a total of nearly 300,000 documents. The Perinorm database on which his work draws includes a total of around 650,000 standards from 21 countries (WTO, 2005).

• In 1975, there were only 20 Europe-wide standards, but by 1999 the number had grown to 5,500 (Moenius, 2005).

• The number of Europe-wide standards in the agriculture and textiles/clothing sectors grew at a rate of nearly 20% per year over the period 1995-2003 (Shepherd, 2006).

Source: Authors

A. The Economic Rationale for Product Standards

Why are product standards necessary at all? Broadly speaking, standards can be seen as a way of bringing outcomes from a decentralized market economy more closely into line with social objectives that may not otherwise be achieved (see e.g., Maskus et al., 2000; Ganslandt and Markusen, 2001). Two of the most common reasons why standards might be necessary relate to spillover effects (*externalities*) from certain activities, and *information asymmetries* between buyers and sellers. These effects are clearly relevant for standardization at the national level, but they also set the scene for regional and global coordination on standards to the extent that they can take place in an international setting.

An example of the externality rationale for standards relates to packaging materials. In the absence of any rules or standards, producers and consumers do not directly pay the cost of disposing of packaging materials after the product has been bought and unpacked. These materials must be taken away to a landfill, where they will break down over time, potentially releasing pollutants into the environment. A standard setting out biodegradability requirements for packaging materials can help reduce this problem, and limit the negative environmental spillovers from useful economic transactions. Social objectives such as environmental protection and public health are common externality-based rationales for the development of product standards.

Another important example of a spillover rationale for standards relates to network effects and interoperability (see e.g., David and Greenstein, 1990; Barrett and Yang, 2001; and Gandal and Shy, 2000). The high definition DVD market has recently seen Blu Ray emerge as the de facto dominant standard over HDVD. Since DVD players can usually display one of these two formats only, the more consumers buy a particular type of player, the greater the incentive for firms to release a wider range of movies in that format. Each consumer's purchase therefore has a spillover effect, in the sense that it increases the value of having a player of the same format for every other consumer. At the same time, however, consumers

may be reluctant to purchase a player of either format while there is uncertainty as to which will become dominant in the future. Standardization in this case makes it possible to overcome this reluctance and develop these spillovers more completely than would be possible if, for example, each equipment manufacturer adopted its own technology standard.

An alternative mechanism relates to the availability of product-related information to buyers and sellers. For example, a consumer wants to buy a car that is safe and has a certain level of fuel efficiency, but until she actually acquires it and starts using it, it is very difficult to tell whether or not that is in fact the case. The carmaker is in a much better position to know the car's true characteristics. But an unscrupulous manufacturer might advertise a car as being safe and fuel efficient, when in fact it is not.³ How can the consumer go about finding the type of car she wants when she knows that advertisements may not always be truthful? Standards can be one way out of this set of difficulties: if the consumer sees that an independent testing authority has certified that a car meets a particular safety standard, then she can be confident in its characteristics. It is common for objectives such as fitness-for-purpose and quality to be pursued through these kinds of standards. Alternatively, standards can be seen as a way of reducing the costs a consumer must bear in searching for the product that best matches her preferences (see e.g., Jones and Hudson, 1996).

The flipside is that producers also need information on consumer tastes in order to manufacture profitable products. Gathering such information can be costly, in particular for overseas firms that may be unfamiliar with local preferences and practices. Standards can be one way of making this process simpler and less costly, to the extent that they summarize a set of characteristics considered to be valuable in the local market. (See Swann et al., 1996; and Moenius, 2005 for a discussion of this mechanism.)

B. Designing and Implementing Product Standards

Given the role that standards play in the economy, they should be set up in such a way as to promote their important social objectives while minimizing costs. Although mandatory standards, often referred to as technical regulations, are still important in some sectors, the bulk of standards-related activity in most countries now consists of voluntary standards. The

³ This is a simple example of the "lemons" problem discussed by Akerlof (1970).

difference between the two is that mandatory standards must be met by firms as a matter of law, with penalties for non-conforming products, while compliance with voluntary standards remains a matter of commercial choice for individual firms. In practice, both types of standards exist side by side, although mandatory standards tend mostly to be confined to core areas of public health and consumer safety, such as requirements governing food and medicines. This coexistence is also apparent at the regional level, for example in the European Union's "New Approach" to harmonization (see EC, 2000 and WTO, 2005 for a discussion).

Given the coexistence of mandatory and voluntary standards, it is clear that product standards are increasingly a shared responsibility between the public and private sectors. In most cases, standards evolve in an environment characterized by the complex interplay between private and public interests and agents (Casella, 2001). In the USA, for instance, the Food and Drug Administration is a public body (part of the Executive), and its standards are mandatory and enforceable through the Executive and the Courts. At the same time, the American National Standards Institute (ANSI), a non-profit organization, develops and promulgates voluntary standards in a wide range of areas. Sometimes the boundaries between public and private organizations can become blurred. ANSI, for example, is a private law body, but its members include government agencies as well as private sector organizations.

Although public sector intervention may be important in some cases to ensure the promotion of important social objectives, the state will often be at a severe informational disadvantage with regard to the private sector when it comes to design and implementation of particular standards. So it is important for policymakers to find the right balance between public and private initiatives, and to ensure that they work together. For instance, in the European Union's "New Approach", the public sector takes the lead in enacting mandatory core standards in certain sectors, but it is private standards organizations—like the European Committee for Standardization (CEN)—that are responsible for developing detailed voluntary standards setting out particular ways in which products can be designed and built so as to meet the mandatory standards (EC, 2000).

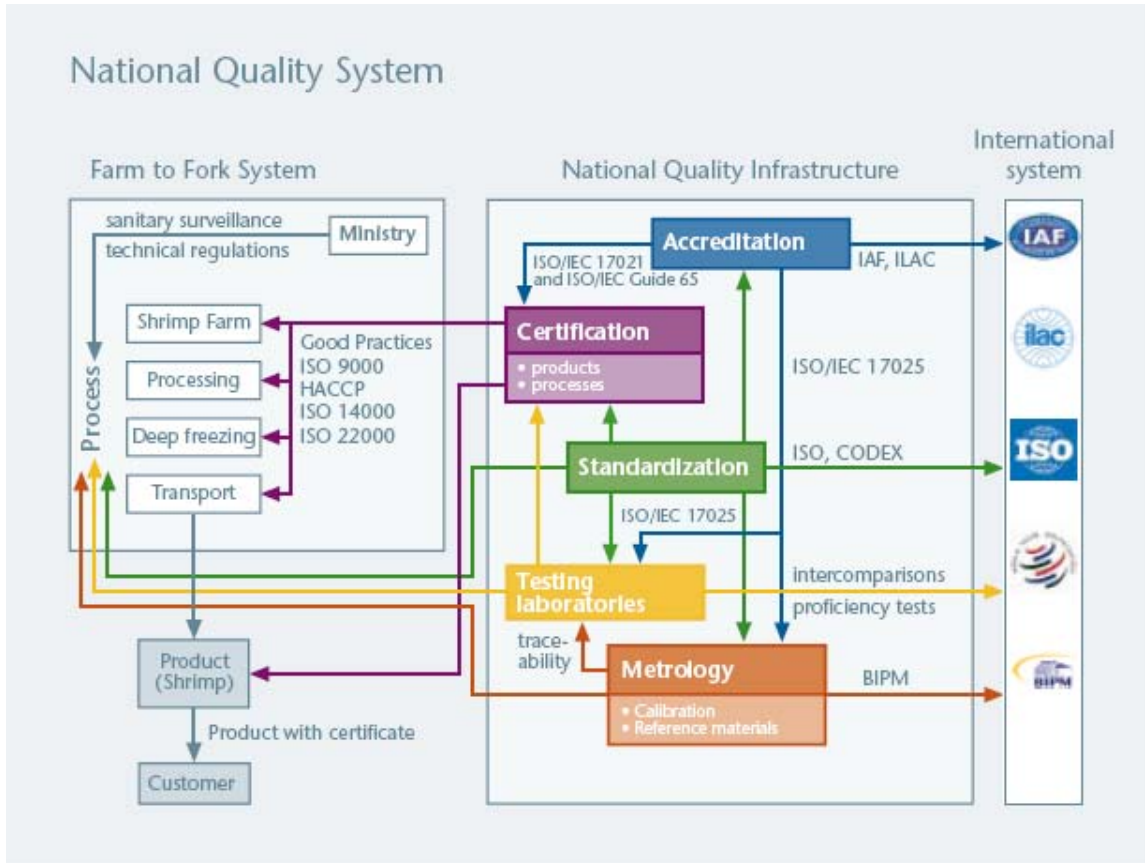
Of course, drafting the documents containing product standards is only one part of the process. A number of structures and processes have developed as a kind of supporting infrastructure for national standards systems, and it is important to keep in mind the interplay among these different elements (ISO, 2006 and 2008). (See Figure 1 for an overview.) All

standards systems need a solid basis in *metrology*, namely the establishment of accurate, reliable, and traceable measurements. Without reliable means of measurement, product standards become meaningless since there is no way of assessing a product's performance relative to the set of benchmarks set out in a standard.

A sound basis in metrology therefore makes it possible to demonstrate whether or not specified requirements relating to a product are in fact met. This process is known as *conformity assessment*, and can be completed either by a *supplier's declaration of conformity*, in which the seller states that the product meets certain requirements, or a *third-party conformity assessment* in which an independent laboratory tests whether or not the product meets certain requirements.⁴ If these requirements are met, the laboratory certifies conformity. In some cases, conforming products may receive the right to display a particular logo or label, like "CE" for certain European standards, or may be included in an official register of conforming goods. Of course, for third party conformity assessment to be reliable, testing laboratories must themselves be subject to independent assessment of their equipment and processes. *Accreditation* of testing laboratories serves this purpose.

⁴ In some cases the declaration of conformity can be made by the purchaser too. A supplier's declaration regime can potentially lead to significant cost savings for business and governments. Fleiss et al. (2008) find some empirical evidence in Europe to support the view that a shift from third party certification to a supplier declaration system can be trade promoting.

Figure 1: Elements of a Standards Infrastructure⁵



Source: Sanetra and Marbàn (2007)

As Figure 1 and the above discussion suggest, standardization involves a complex and technically sophisticated set of organizations and processes. Depending on their level of development, different countries may find that they need to be selective in terms of the parts of the overall standards infrastructure that they adopt.⁶ Regional cooperation can be one way in which countries can reduce the cost burden of setting up standards infrastructure, by spreading the costs over a number of countries. Regional agencies for metrology, testing and conformity assessment, accreditation, and standardization are examples of concrete approaches that could be envisaged. Use of foreign conformity assessment mechanisms is

⁵ Note that this represents the infrastructure in developed countries, hence the term national infrastructure used by the authors. While all the elements of the standards infrastructure are necessary, they do not have to be confined to one country.

⁶ *Ibid* note 5.

also another possibility in cases of weak domestic capacity. We discuss the scope for regional cooperation on standards in more detail below.

C. Regional and International Dimensions of Standardization

The rationales for standards discussed above can also apply in a cross-border setting. Asymmetries of information between consumers and producers are even more serious in a traded goods context, due to the ineffectiveness of alternative signaling mechanisms that work domestically, such as firm reputations built up over a long period. In addition, a number of important public policy goals are now recognized as having regional, and even global, dimensions. This is the case for many aspects of environmental protection, for instance. It can therefore make sense for countries to cooperate on standards in these areas. The importance of dynamics such as these is reflected in the fact that many countries now deal with standards at least partly at the transnational level, either through preferential agreements or the multilateral trading system.

The International Organization for Standardization (ISO) is just one of a host of transnational entities that issue standards. ISO is a network of national standards institutes. In keeping with the private law character of many of these institutes, ISO itself is a non-governmental organization. Its standards are thus private and voluntary.

Another example of international standardization is the Codex Alimentarius Commission. Unlike ISO, the Codex deals only with one area of standardization: food safety.⁷ It is a public organization, created as a joint venture between the World Health Organization and the Food and Agriculture Organization of the United Nations. Although its standards do not have direct legal force, they serve as the basis for legally binding rules in many countries (see also Box 9 below).

In addition to international structures like ISO and the Codex, there are also a small number of regional bodies dealing with standardization. In the EU, for instance, CEN performs a region-wide standardization function. Its member organizations are the national standards

⁷ The WTO Agreements maintain a distinction between standards broadly related to food safety, and those related to more general issues in the area of manufactured goods. The former are largely dealt with under the Agreement on Sanitary and Phyto-Sanitary Measures (SPS Agreement), while the latter are dealt with under the Agreement on Technical Barriers to Trade (TBT Agreement).

bodies of 30 European countries. CEN itself is a private (non-profit) organization. Although the standards it issues are voluntary, standards organizations in member countries are required to issue its standards as national standards, and to withdraw any inconsistent national standards. CEN's standards are therefore often referred to as being "European standards" or "harmonized European standards", because they should apply with equal force in all member countries.

D. Cost Effects of Standards

There are thus good economic reasons for the existence of product standards, and in some cases for transnational collaboration in this area. However, policymakers also need to be aware of the costs entailed by standards, and of their potential to introduce distortions into regional and global trade relations as the implementation of standards policies might discriminate between national and foreign suppliers, or between different categories of foreign suppliers.

From the point of view of foreign exporters, product standards in an importing country can sometimes represent an additional source of costs (Maskus et al., 2005). Moreover, even though national standards may be legitimate, the multiplicity and diversity of standards can also create duplication of market access costs that may be inefficient from a global perspective. These types of effects can potentially put foreign competitors at a disadvantage, and produce—intentionally or not—a form of protection for domestic industries.⁸

Coordination among countries in implementing their standards policies may result in harmonized policies reducing the cost of market access while preserving regulatory objectives. Of course, a potential difficulty with this kind of coordination—discussed in more detail below—is that it assumes that it is optimal for the same standard to apply across a wide range of countries, when in fact different economic and social conditions may push in the opposite direction.

⁸ The evidence is currently scarce—due mainly to a lack of appropriate data—but there are suggestions in the empirical literature that protectionism may well be a motivation behind some standards (Essaji, 2005; Kono, 2006). The financial crisis and measures taken by some countries to protect domestic industries have actually raised again the specter of standards being used as protectionist devices: see for instance India's recent decision to ban Chinese toys on safety grounds.

"Downturn Heightens China-India Tension on Trade", *Wall Street Journal*, March 20, 2009.

<http://online.wsj.com/article/SB123749113639187441.html>

Box 3. Do Voluntary Standards Have Cost Effects Too?

At first glance, it might seem that only mandatory standards would have measurable cost impacts. After all, manufacturers are in principle free not to comply with voluntary standards if they so choose. Legally speaking, they are therefore not strictly required to pay additional costs in order to access a particular market. In practice, however, the situation becomes more blurred. If compliance with voluntary standards is a commercial imperative, even if not a legal one, then we might still expect to see some evidence of cost effects. Is this in fact the case?

It turns out, in fact, that there is substantial evidence that voluntary standards do indeed affect trade flows, which is consistent with their having a significant impact on cost. The standards data used by Moenius (2005) and Czubala et al. (forthcoming), for instance, is largely composed of voluntary standards. Both studies find significant impacts of standards on trade: negative in the case of Czubala et al. (forthcoming), and a mix of sector-specific negative and positive results in the case of Moenius (2005). In addition, Shepherd (2007) finds evidence that voluntary standards impact export diversification in partner countries, which may be indicative of an effect on fixed, not just variable, costs of production. These findings together suggest that although compliance with voluntary standards may not be necessary as a matter of law, it is still of sufficient commercial importance to produce important links with production costs and trade flows.

Source: Authors

What kinds of costs can compliance with product standards impose on manufacturers? On the one hand, it might be necessary to redesign a product in whole or in part. New machinery may need to be purchased, or a new production process set up. All of these adaptations are associated with increased fixed costs of production (including sunk ones), in the sense that they largely involve a one-off payment rather than a recurring one.

In some cases, adaptations to deal with product standards can affect the level of variable production costs too. If the new production process uses more expensive inputs, or if the new machinery is more costly to run, then the per unit cost of production will also increase. It might also be necessary to formally demonstrate compliance with a particular standard, in which case additional testing and certification procedures might be necessary. These procedures also increase variable production costs.

Maskus et al. (2005) collect data from nearly 700 firms in 17 developing countries, as part of an effort to better understand the cost effects of foreign standards. Their findings are in line with the types of effects discussed above. In their sample, the fixed costs of compliance with foreign standards are on average nearly 5% of firm value added. Moreover, increased compliance investment is associated a small but significant effect on variable production costs.

In assessing the production-side impacts of standards, this distinction between fixed and variable costs is an important one. Recent advances in the theory of international trade (Chaney, 2008) suggest that higher variable costs primarily impact trade by reducing exports per firm among the small subset of firms that already export to foreign markets. Higher fixed costs, on the other hand, tend to force some firms out of export markets entirely, thus altering the range of products exported and/or the set of foreign markets served. As discussed in more detail below, Shepherd (2007) applies these insights to the economics of standards in international trade, and uses them to analyze the impact of policies such as regional and international harmonization.

In assessing the costs and benefits of standards, it is also important to take account of the possibility of additional mechanisms that act of the medium- to long-term. For instance, Jaffee (2003) shows how the horticultural industry in Kenya has used changing European regulations as a stimulus to innovation, competitive repositioning, and industrial upgrading. Diaz Rios and Jaffee (2008) show that developing country firms responded very differently to stricter aflatoxin regulations in the EU: the commercial difficulties some exporters were facing were exacerbated, while others took the opportunity to upgrade their production techniques and gain additional market share. Consistent with the theoretical models mentioned above, these kinds of processes rely on a reallocation of resources over time from small and relatively inefficient firms to larger, more efficient ones. Over the medium- to long-term, this reallocation is associated with gains in sectoral productivity—a kind of technological upgrading that holds significant development promise.

Of course, standards-driven reallocation of resources also poses a number of challenges, in particular in developing countries. Inefficient credit markets may make it difficult for more productive firms to expand; Czubala et al. (forthcoming) find some evidence consistent with this kind of difficulty in the case of African clothing exporters. In addition, regulations and other constraints that impede the free flow of labor and capital between firms might also slow down or even prevent these medium- to long-term processes from functioning. Finally, developing country policymakers will also need to ensure that resource reallocation does not negatively impact poverty reduction goals, due to the concentration of unskilled labor in smaller and less productive firms.

E. Consolidation: Trade Effects of Product Standards

This brief discussion shows that the overall economic impacts of product standards are difficult to assess. From the producer's point of view, there are two opposite forces at play in the short term: possible cost increases due to the need to adapt production process and demonstrate conformity; and possible cost savings through the transmission of market specific information that would otherwise be costly to obtain. Over the longer term, there is also the possibility of technological progress induced by standards. At the industry level, it is also possible that standards may cause a reorganization of firms and the sector around more efficient production methods (see for instance Maertens & Swinnen, 2009 on the example of how the Senegalese vegetable export chain reacted to the tightening of European standards). The overall impact on producers is therefore ambiguous, and depends on the relative strength of these two effects in particular cases. By extension, the trade impacts of product standards are also ambiguous, since they depend on the nature and extent of any changes in behavior on the part of domestic and foreign producers.

Because of this theoretical ambiguity, empirical work to assess the trade impacts of standards can be difficult to interpret since there is no simple way of distinguishing theory-consistent results from those which are not. Although empirical work emphasizes the relative size and significance of these different effects, it remains difficult to identify them separately in a satisfactory manner. Even apart from this issue, empirical work is hampered by the need to rely on very rough proxies in order to measure the costs associated with standards: only in rare cases is it possible to have a direct measure of restrictiveness.

Box 4. Inventory Methods Versus Direct Measures of Restrictiveness

Disdier et al. (2008) adopt the so-called “inventory method” of measuring standardization. They use TRAINS data to tally the number of standards potentially affecting trade in agricultural products. They use these tallies to construct coverage ratios, i.e. the percentage of products (tariff lines) subject to product standards in their data. In the aggregate, they find that higher coverage ratios—i.e., a larger inventory of standards—tend to be associated with reduced exports from developing countries to the OECD. Trade between OECD countries appears to be relatively unaffected, however. This result would be consistent with a situation in which adjustment costs are higher or more difficult to cover in the developing world than in rich countries. Consistent with the results of Moenius (2005), Disdier et al. (2008) also report that this aggregate impact tends to mask considerable cross-sectoral heterogeneity: in some cases standards have a negative impact, consistent with the dominance of cost increases, while in others they have a positive impact, consistent with the dominance of cost reducing information effects.

There are very few examples of applied work in which it has proved possible to directly compare standards in terms of their substantive content, rather than just their number. Otsuki et al. (2001) manage to do this for the case of standards governing acceptable levels of aflatoxin in African groundnut exports to the EU. They assess restrictiveness directly in terms of the maximum permissible aflatoxin content of groundnuts, measured in parts per billion. Their gravity model results suggest that tighter aflatoxin regulations are associated with fewer groundnut exports from African countries to the EU, which is consistent with increased compliance costs. As a rough order of magnitude, they find that a proposed new EU aflatoxin regulation would result in trade flows 63% lower than those that would be observed under a less restrictive Codex Alimentarius standard. This very strong result needs to be nuanced, however, in light of the conflicting case study evidence presented by Diaz Rios and Jaffee (2008).

Source: Authors

A comprehensive economic assessment of product standards couched in terms of a measure of aggregate welfare could not, of course, be limited to the production side only. It would also be necessary to take into account the extent to which a particular standard reduces social costs (e.g. less dangerous products) or creates social benefits (e.g. compatible systems), and thus brings the economy closer to its welfare optimum. Such a comprehensive analysis is at the core of the concept of a regulatory impact assessment (e.g., Hahn and Litan, 2005), and could easily be extended to the regional context by explicitly considering costs and benefits with cross-border dimensions. However, the focus of this paper is on trade effects, and thus it will not be possible to discuss the question of internalization in any further detail.

Henceforth, we will be dealing exclusively with observable trade effects, which turn largely on the production-side effects discussed above. In doing so, we do not seek to minimize the importance of the internalization role of standards; rather, we see that as a subject deserving of separate treatment.

A final remark, however, points towards what are likely to be efficiency gains. The implementation of national standards policies are by and large not coordinated with trading partners: it would be therefore very surprising if this did not lead to more complex and costly standards systems than is strictly necessary. In particular, developing countries may not have the best standards “technology” available to them and thus implement inefficient policies (either too costly or not achieving its objectives). Also because national policies – even if they incorporate some form of regulatory impact assessment – are decided without consideration of cross border effects and externalities it is likely that duplication and incompatibility of standards and practices creates systemic costs.

Dealing with Standards in Preferential Trade Agreements

Having set out the general context, we now turn to look more closely at the particular issues raised by product standards in preferential trade agreements.

First, it should be clear from the discussion above that regional standards can produce similar economic effects to those associated with national standards. The essential dynamic is one of insiders and outsiders: members of a preferential agreement may benefit from the liberalization of product standards, at the same time that it can create costs for countries outside the agreement.

Second, one should always have in mind that mercantilist objectives may motivate negotiations in preferential trade agreements. Therefore agreed disciplines on standards should be considered in the context of the overall bargain leading to the agreement. It is not a given that provisions on standards in an agreement are necessarily improving on the prior national policies. It can be the case that countries negotiate preferential market access against non-optimal standards policies set by their trading partners (see Fink, 2009 for a discussion in the IPR context).

Third, preferential trade agreements offer a specific mode of trade liberalization when it comes to standards: the recognition (often mutual) of standards and procedures. This approach to liberalization is specific in the sense that it is very difficult to envisage it done multilaterally. This is because it requires a case-by-case approach which seems only practical in preferential agreements involving a selected number of trade partners with reasonably similar economic and social characteristics. This last point is important in light of the political sensitivities often generated by changes to product standards in areas such as environmental protection or public health..

The potential importance of these effects is demonstrated by the prominence product standards have been receiving in preferential agreements: Budetta and Piermartini (2009) show that 58 out of the 70 preferential agreements in their sample contained provisions on product standards. Dealing with differing national standards can be a very difficult process, since it involves balancing costs in one area (trade) against benefits that are usually in a completely different one (consumer protection; environmental protection; etc.). In this section, we examine two of the main approaches that have been adopted within regional forums, and which have also influenced developments at the multilateral level:

harmonization, and mutual recognition. Nicolaides (2001) provides a general review of the issues involved.

A. Harmonization of Standards

The discussion above makes clear that the need for producers to comply with multiple, different standards in order to access different markets can sometimes act as a barrier to trade. One response to this problem is to try and remove the differences between national standards through a process of harmonization. In this context, harmonization means the convergence of national standards towards a common set of requirements. The question whether it is optimal for a particular set of countries to adopt the same standard depends on balancing two effects: the potential for increased trade thanks to reduced cost multiplicity, versus the likelihood that different national preferences and resource endowments interact to produce different optimal regulations in each closed economy. For example, Norway and Zambia could perhaps bring about some trade gains by adopting the same standards on environmentally friendly packaging materials. However, technological and enforcement capacity differ greatly between the two countries: it might be very difficult to ensure that the standard is in fact implemented. Moreover, different income levels and relative land abundance might suggest that Norwegians and Zambians could legitimately have different preferences in relation to the trade off between the cost of packaging materials and their environmental properties. These issues are extremely complex to resolve, but need to be kept in mind when examining harmonization efforts. See Bhagwati (1996) for a review.

Harmonization of standards can take place in two ways. Unilateral harmonization occurs when one country or group of countries simply adopts a standard prevailing in another country. More common is concerted harmonization, where countries work together in an effort to find a set of requirements that is acceptable to all parties. Concerted harmonization can therefore be a very lengthy and uncertain process, because it requires extensive negotiations among the parties in relation to every standard in each jurisdiction. The more divergent the parties' interests and approaches to standardization, the more difficult it is likely to be to negotiate a set of harmonized standards. When it occurs, concerted harmonization therefore tends to involve countries at reasonably close levels of development, and with some broad similarities in terms of preferences and approaches to regulation more generally.

Box 5. Facilitating Market Access: Harmonization, Equivalence and Mutual Recognition

Part of the international efforts around standards and technical regulation aim at reducing the overall burden they impose on traders. Coordinating policies so as to make them more “alike” is one way to reduce costs of compliance. There are three ways to achieve this: harmonization, equivalence and mutual recognition.

Harmonization is straightforward to understand as it means replacing two or more rules or procedures with a single one. Arguably there are different degrees of harmonization: rules alone, procedures alone, both, or even higher level objectives only (“essential requirements”) as in the EU new approach. Thus the term can be somewhat misleading.

“Equivalence” and “mutual recognition” aim on the other hand is to preserve diversity of rules and procedures provided that “equivalent” or “like” objectives are met. Nicolaidis and Egan (2001) offer the following definitions: “Recognition refers to the acceptance of equivalence of selected foreign standards or regulations. Mutual recognition establishes the general principle that if a product or a service can be sold lawfully in one jurisdiction, it can be sold freely in any other participating jurisdiction, without having to comply with the regulations of these other jurisdictions. This involves a transfer of regulatory authority from the host jurisdiction to the home jurisdiction from which a product, a person, a service or a firm originates. The ‘recognition’ involved here is of the ‘equivalence’, or at least ‘compatibility’ of the counterpart’s regulatory system; the ‘mutual’ part indicates that the reallocation of authority is reciprocal and simultaneous”. Therefore a difference between mutual recognition and equivalence (which are both used in PTAs) lies in that one involves reciprocity when the other does not.

In other words, equivalence can be established when the outcome is identical even if the means by which this was reached differ. Veggeland and Elvestad (2004) quote the example of hard cheese the manufacturing of which in Australia requires the heating of milk, whereas Switzerland achieves same levels of pathogens destruction through other production methods while using raw unpasteurized milk. Equivalence is thus the acceptance that a third party standards or procedures are in effect fulfilling the national requirements.

The term of “mutual recognition agreement” normally refers to the acceptance of certification of a partner country. It can also be used to refer to agreements on specific sectors, specific instances of application or between specific partners of the “principle of mutual recognition” (Nicolaidis and Egan, 2001).

Source: Authors

A.1. Trade Effects of Harmonization: Insiders vs. Outsiders

In terms of trade effects, the distinction between countries inside the harmonizing region and those outside is crucial. Ordinarily, the cost reducing effects of harmonization accrue primarily to firms within the region where standards are harmonized. Foreign exporters must still satisfy the importing region's standards, in addition to whatever requirements there may be in their home country. They therefore still face some level of cost multiplicity (albeit lower than those that pertained prior to harmonization), and in the case of “harmonizing up” by the preferential area —i.e., adoption of a stricter standard than prevailed prior to harmonization— it may even be more difficult to access some markets.

At the same time, however, harmonization allows foreign exporters to realize economies of scale, by granting them access to a larger market. This effect works by reducing the fixed costs of compliance through having to meet only one type of standard for the whole region. The balance between cost and scale effects is an empirical issue that must be resolved in each particular case. The currently available evidence suggests that the cost effect sometimes dominates in the case of regional harmonization, but that harmonization with international standards generally leads to dominance of the scale effect (see below). In other words, the net effect of harmonization on the exports of excluded countries tends to be negative for regional harmonization, but positive for international harmonization.

Box 6. Trade Effects of Harmonization—Empirical Evidence

There is substantial empirical evidence to the effect that harmonized standards are often associated with increased trade among harmonizing countries. For instance, Henry de Frahan and Vancauteran (2006) find that harmonization of standards across Europe tends to boost trade among EU members: bilateral exports in sectors with harmonized food regulations are on average 253% higher than in non-harmonized sectors. The tariff equivalent of non-harmonization ranges from 73% to 97%, depending on the sector. These findings are consistent with the cost-based analysis presented above: a single, harmonized standard avoids the cost multiplicity that arises from multiple standards, thereby making it easier for producers to access an expanded market within the harmonization zone. Of course, this dynamic must be nuanced in certain cases due to the possibility that information effects work in the opposite direction: Moenius (2005) shows that the effect of harmonization on trade is not always positive, even for the harmonizers, and suggests that it could be due to the dominance of information effects in some sectors.

For countries outside the harmonization zone, however, the picture is not generally so rosy. Empirical work suggests that there is considerable scope for a kind of trade diversion effect to occur: the cost reductions implicit in harmonization can lead demand to switch to a relatively high cost supplier within the harmonization zone, to the detriment of lower cost suppliers elsewhere. In the case of the EU, Chen and Mattoo (2008) and Baller (2007) show that harmonization under the EU's "New Approach" Directives can sometimes have a negative impact on trade with third countries.⁹ In particular, it is developing countries that are more likely to be affected in this way than developed ones, presumably because adaptation costs are higher in a technology scarce environment.

Source: Authors

One way of dealing with the difficulties created by this insider-outsider dynamic is the hybrid approach adopted by the member economies of the Asia Pacific Economic Cooperation (APEC). APEC is a particularly heterogeneous regional grouping, including developed countries such as the USA, Japan, and Australia, as well as developing countries at various

⁹ It is also plausible that the EU's harmonization program involves a significant degree of "harmonizing up" to a higher standard, which would also tend to have negative trade consequences for excluded countries.

income levels (e.g., China, Peru, and Thailand), and transition countries (Russia and Vietnam). Such a diverse membership would seem to suggest that concerted harmonization could be a particularly long and uncertain process. Similarly, the presence of a number of large countries makes it unlikely that unilateral harmonization by all but one member would be a possibility either.

Consistent with its commitment to “concerted unilateralism” and “open regionalism”, APEC therefore adopted an intermediate approach. APEC member economies commit to increasing harmonization of their own national standards with international standards, such as those issued by ISO. They identify a number of priority sectors in which such harmonization should be pursued first. In addition, they undertake to participate actively in the work of international standards bodies. In common with other APEC commitments, member economies must make public progress reports (Individual Action Plans) on a yearly basis. Helble et al. (2007) show that member economies appear to have made substantial progress on these points.

A.2. Trade Effects of International Harmonization

The empirical literature discussed above examined the impact of regional harmonization on outside countries. In addition, there is now a growing body of empirical evidence suggesting that harmonization with international standards can mitigate the costs that foreign exporters might otherwise face.¹⁰ Czubala et al. (forthcoming) find that EU standards that are not harmonized with international (ISO) norms have a negative and significant impact on African clothing exports to the EU. However, internationally harmonized EU standards do not have any statistically significant impact.

These results are confirmed by Shepherd (2007), focusing on the fixed cost effects of standards. He finds that a 10% increase in the total number of EU standards leads to a 6% fall in the variety of products exported by non-EU partner countries, which is consistent with their playing a large role in generating fixed costs that exporters must pay in order to access

¹⁰ Of course, as noted above, harmonization is not always optimal in a welfare sense because countries (and regions) can differ in terms of preferences and resource endowments. Thus, while adoption of internationally harmonized standards can often be beneficial from a trade point of view, policymakers need to ensure that the overall welfare effect is positive. This question is particularly important for developing countries and regions, given the technical and financial burdens that international standards can impose.

foreign markets. By contrast, a 10 percentage point increase in the proportion of those standards that are harmonized with ISO standards is associated with a small (0.2%) but significant increase in partner country export variety. These results suggest that convergence of regional standards to international norms can be an effective way of limiting the potential for negative trade effects in excluded countries, in particular developing countries.

B. Mutual Recognition of Standards and/or Conformity Assessments

Another way of dealing with the cost issues raised by divergent national standards is *mutual recognition of standards*.¹¹ Whereas harmonization eliminates the costs associated with different standards by reducing multiplicity, mutual recognition allows each country to maintain potentially different standards, but both are required to accord equal treatment to goods produced in partner countries even though standards might be different. If South Africa and Nigeria decide to harmonize standards, they adopt a single set of requirements that applies equally in both countries. If they agree to mutual recognition of standards, then South African products that conform to local standards can be put on the Nigerian market, even if they do not comply with Nigerian standards (and vice versa). Of course, it is possible for recognition to be unilateral (“*equivalence*”) rather than mutual, e.g. Nigeria decides to treat products conforming to South African standards as equivalent to those which conform to its own standards.

One advantage of mutual recognition of standards over harmonization is that once the principle has been agreed on, it is not necessary to engage in long and complex negotiations over each individual standard. The rule simply applies across the board. National standards agencies continue to go about their work as usual, the only difference being that non-conforming products from foreign markets might also now appear on the domestic market.

In practice, however, mutual recognition can be extremely difficult to implement among countries with markedly different social preferences, or with fundamentally different approaches to regulation. Although the rule is relatively easy to apply in practice, it is usually difficult for countries to reach agreement as to whether or not it should be applied at all.

¹¹ Harmonization and mutual recognition should generally be viewed as complements, not substitutes. In the EU’s New Approach, for instance, both instruments work together.

Mutual recognition can be seen as creating a risk that one country's standards might be undermined by different—perceived to be lower—standards in another country. In an environment of mobile capital, the fear is that a sharp difference in standards might create an incentive for production to relocate from high standard countries to low standard countries. This would, in turn, create an incentive for authorities in the high standard country to lower their country's standards—a kind of “*race to the bottom*”. Although there is considerable debate as to the empirical relevance of this dynamic, there is no doubt as to its political relevance. (See Drezner, 2006, for a review.) As a result, mutual recognition is generally only seen among relatively similar countries. European countries, for instance, adopted a form of mutual recognition rule as set out in the *Cassis de Dijon* decision: products that comply with mandatory regulations in one European country cannot usually be prevented from accessing markets in other European countries. But even within a relatively homogeneous grouping like the EU, the idea of adopting a type of mutual recognition rule for services trade—the “country of origin” principle—proved so controversial that it had to be largely shelved.

Another form of mutual recognition applies to conformity assessments. Under such a regime, countries agree to recognize the results of testing and certification procedures conducted in other countries, even though there is no harmonization or mutual recognition of the underlying standards themselves. For example, if the EU and Australia agree to mutual recognition in the area of conformity assessments, European exporters can have local laboratories certify their compliance with Australian standards. Since the question of recognition is limited to the performance of scientific tests and the certification of results, it should be considerably easier for countries to negotiate than full scale mutual recognition of standards: fundamentally, all that is required is that the recognizing countries have a certain level of trust in relation to the quality of testing and certification authorities overseas.

Box 7. Trade Effects of Mutual Recognition—Empirical Evidence

The available empirical evidence on the effects of mutual recognition is much more limited than in the case of harmonization. Chen and Mattoo (2008) look at the impacts of European agreements for mutual recognition of conformity assessments with other (non-EU) countries. They find that conformity assessment MRAs uniformly promote trade between those countries involved in the agreement. Baller (2007) confirms that result for a wider range of countries. An and Maskus (2009) find similar evidence using firm-level survey data, and suggest that their results would be consistent with a stronger beneficial effect on developing country exporters from MRAs than from international harmonization of standards.

However, Chen and Mattoo (2008) show that the impact of conformity assessment MRAs on third countries depends crucially on the nature of the rules of origin that accompany them.¹² MRAs with relatively open rules of origin tend to be trade promoting for all countries, but the presence of restrictive rules of origin can reverse that effect. In addition, Amurgo-Pacheco (2006) finds evidence that conformity assessment MRAs can have negative trade impacts for excluded developing countries.

Source: Authors

C. Managing Standardization at the Regional Level: What Provisions in Preferential Trade Agreements?

Harmonization and mutual recognition both provide ways of overcoming the cost multiplicity that can result from divergent national standards. In assessing the right mix to adopt within a particular regional grouping, a number of economic criteria need to be addressed in terms of the costs and benefits of each approach. For instance, in countries with strongly divergent preferences and/or levels of development, the costs of harmonization may be substantial: each country will be required to move away from its optimal point of regulation. Mutual recognition avoids these costs, but at the price of potentially undermining some domestic regulations due to a “race to the bottom” effect in some cases. In large regional groupings, the transaction costs associated with negotiating a mutual recognition agreement are surely lower than those associated with standard-by-standard discussions on harmonization. However, mutual recognition presupposes a high degree of trust among partners, and is probably only feasible in contexts where a good deal of regulatory and institutional convergence has already taken place.

¹² Rules of origin set out the conditions under which a product is treated as originating in a particular country for the purposes of applying the specific regime under an agreement: in this case a rule of origin would preclude third countries from accessing the regime of mutual recognition: for instance whereas a product in country A member of the agreement could have local conformity assessment accepted as valid in other countries participating in the agreement, the product from a third country would have to be certified following the practices of the country where the product is being sold.

How commonly is each of the above approaches actually applied in practice? Recent work by Budetta and Piermartini (2009) provides some useful first results (see Table 1). They analyze the texts of 70 regional and preferential agreements, of which 58 contain some kind of provisions related to product standards. Interestingly, harmonization appears to be much more common than mutual recognition for standards: 29 agreements provide for harmonization of mandatory standards, and 25 provide for harmonization of voluntary standards. By contrast, only five agreements provide for mutual recognition of voluntary standards, and 15 provide for mutual recognition of mandatory standards.

Mutual recognition is on the other hand the most frequent approach for conformity assessment. This may reflect the fact that mutual recognition of conformity is easier to achieve than for standards. The reason might be that instead of implying equivalence of regulatory objectives, which is a sensitive issue in many cases, it requires equivalence of how tests are performed and certification granted.¹³

It is important to be cautious in interpreting the above figures, however. Legally, there is an important difference between the way in which the two types of obligations tend to be structured. Agreements to pursue harmonization can sometimes impose relatively few up-front obligations. It is common for the parties to commit to ongoing negotiations with a view to harmonization. The devil is thus in the details, since the extent of harmonization that in fact takes place depends on the outcome of a long and complex process. Moreover, Budetta and Piermartini (2009) point out that the majority of agreements with harmonization obligations include the EU as a party, and most of them require harmonization to EU standards. This dynamic reflects both a long-term dynamic within the EU, as well as the fact that most of these agreements involve much smaller and less-developed economies. Thus the figures above also reflect the influence of different “models” of treatment of standards and technical regulations in preferential agreements.

Mutual recognition, on the other hand, tends to impose stronger obligations up-front: countries sometimes immediately commit to give full force to each other’s standards, although this may in some cases be limited to particular sectors. The extent to which individual agreements result in the removal of multiple standards-related barriers is therefore an empirical question that needs to be examined in detail in each case.

¹³ This is probably easier to monitor as well.

Table 1: Prevalence of harmonization and mutual recognition in preferential agreements.

	Voluntary Standards	Mandatory Standards	Conformity Assessment
Harmonization	25	29	25
Mutual Recognition	5	15	39

Source: Adapted from Budetta and Piermartini (2009) table 2

Many regional and preferential agreements contain additional provisions related to the design and management of regional standards systems. A key component is usually a cluster of obligations relating to the transparency of standards and their administration. For instance, Budetta and Piermartini (2009) find that 21 of the 58 preferential agreements dealing with product standards impose a requirement of prior notification on the parties. This requirement means that new standards, or modifications of existing ones, must be notified prior to entry into force; in many cases, there is also an obligation to allow some time for comments. Another common example of a transparency obligation is the creation of a national contact point, or putting in place a consultation system. Twenty of the agreements surveyed by Budetta and Piermartini (2009) contain such obligations.

Table 2: The content of preferential agreements relating to provisions on standards.

	Lesser (2007) (case studies) N = 24	Budetta and Piermartini (2009) N = 58
Reference to WTO TBT Agreement	86%	52%
Harmonization of standards, technical regulations and conformity assessment	47%	46%
Harmonization to regional technical regulations and standards	34%	45%
Equivalence of technical regulation and standards	33%	26%
Recognition of conformity assessment	77%	67%
Transparency	80%	52%
Joint committee or regional body	80%	62%
Dispute settlement	80%	50%
Technical assistance	47%	38%
Metrology	14%	29%

Source: Lesser (2007) and Budetta and Piermartini (2009)

Some preferential agreements go even further in their treatment of product standards, and incorporate institutions designed to make the process of standard-setting and administration work more smoothly between trading partners. Of the agreements reviewed by Budetta and Piermartini (2009), 34 created some kind of regional administrative body to deal with the administration of standards systems. Twenty-four agreements included a dispute settlement mechanism. Interestingly, 22 agreements have provisions relating to technical assistance. This last point is consistent with the increasing trend towards North-South integration agreements, and suggests that the parties are aware of the asymmetric challenges that can be posed when trading partners at different levels of development pursue integration bilaterally. However, it is impossible to draw any general conclusion as to the effectiveness of these provisions due to the importance of implementation in each particular case. Legal provisions of agreements tell us about the intentions of their drafters, but not about their actual implementation.

Still, there is evidence in Europe, in Mercosur or in the Andean countries that PTAs generate actual changes in standards policies. Aldaz-Carroll (2006) reports that by 2004, Mercosur had developed around 370 regional voluntary standards and 407 regional technical regulations (TBT and SPS). Another example is the Andean Community, which has harmonized technical regulations for 31 agricultural products representing around 60 percent of intraregional trade. Another piece of indirect evidence of attention paid to implementation issues is provided by Budetta and Piermartini (2009), who examine WTO disputes on TBT matters and find that a number of them involve PTA partners, thereby suggesting that such disputes are linked to the agreements they have signed.

What do existing regional experiences tell us about the ingredients of a successful approach to standards? Aldaz-Carroll (2006) reviews the evidence from Asia and Latin America, and concludes that the following aspects are crucial:

- Building trust among member states of the preferential agreement;
- Building regulatory capacity among member states;
- Focusing on simplification, transparency, and dynamism in the standards upgrading process;
- Allowing for gradual reform where appropriate;
- Promoting mutual recognition of conformity assessments as a first step; and

- Identifying priority sectors for harmonization.

D. Drawing Lessons from the Standards Provisions in PTAs

The examination of specific provisions in agreements confirms that countries seek to use PTAs to help with market access and implementation of compliance with foreign standards. The setting up of institutions to help with implementation is widespread, and often coupled with transparency requirements. These features suggest that regional institutions can contribute to making standards less burdensome to trade. Access to information, trust and capacity building are all important: this seems a positive dynamic. However, the need to coordinate national, regional, and multilateral efforts on standards might place a significant strain on resources and capacity in some poorer countries.

PTA characteristics seem, however, highly dependent on the type of partnership. We can see three dimensions. Agreements involving the EU and the USA each propose quite different models and it is still unclear which advantages each partnership may or may not yield. Take for instance the question of recognition: one advantage of US-led agreements is that they seem to ensure systematic equivalence, a liberalization measure that is probably more immediate than harmonization or MRAs sought by the EU. It is also unclear which of the models of regulatory diversity promoted by the US and harmonization promoted by the EU is superior: this is most likely to vary depending on the partner country (and proximity of regulatory preferences). A second dimension is that agreements between partners of similar development levels (North-North or South-South) are more likely to lead to deep integration measures such as the mutual recognition mentioned above. Lesser (2007) provides the example of the Transpac agreement between Chile, Malaysia, Singapore and Brunei. Thirdly, technical assistance dimensions are more prevalent in North-South agreements, where perhaps upgrading of capacity is first needed before regulatory reform takes place.

Finally, we can highlight examples of good practice provided by some agreements to follow. Supporting the multilateral WTO framework and, to the extent that it is consistent with the adoption of optimal standards, international harmonization efforts are obviously among those. Advance notification to trading partners is another. The negative list type approach favored by the USA for equivalence also stems from the right kind of principles, as is the promotion of suppliers' declaration of conformity. Finally, the establishment of institutions in

the context of agreements (such as specialized committees meeting regularly) seems to offer a good venue for dialogue and exchange of information, enabling learning by doing, monitoring of implementation, and defusing possible disputes.

Box 8. How Small ASEAN Countries Manage to Access Certification and Accreditation Services

The absence of internationally recognized public laboratories need not act as a binding constraint to implementing MRAs, provided that the private firm can either use a private company or obtain access to the testing infrastructure of neighboring countries. Permitting the efficient operation of private testing service providers (local and foreign) can enable export ready firms to access testing services at low cost. In the presence of internationally-recognized Third Party Certifiers the absence of a National Accreditation Agency/office need not be a serious constraint. The major export markets will accept certification from these Third Party Certifiers.

While the small size of the market in Laos and Cambodia acts as a disincentive for foreign testing companies to establish local branches and offer services across a wide range of sectors, at least one foreign Third Party Certification company has begun operating in Cambodia. Intertek (an internationally recognized testing company) has established an office in Phnom Penh and is offering testing and certification services to exporting companies. They test for companies that export garments to the US and EU market. Since Intertek established a laboratory testing service, inspection costs have declined. Intertek have no contact with the Government of Cambodia (ISC), but they work closely with foreign buyers. The Intertek example illustrates the importance of private sector Third Party Certifiers in enabling exporters to obtain the necessary documentation to prove they meet international standards.

East Asia is developing a network of calibration laboratories with traceability to physical measurement standards at either the national level or to internationally-recognized national physical standards of another country. Most ASEAN economies have both privately- and publicly-owned laboratories that are accredited by a government accreditation service. The ASEAN-6 have entered into mutual recognition agreements on laboratory accreditation with other ASEAN members. Outside of the ASEAN-6 in the CLMV countries individual laboratories engage in mutual recognition agreements with foreign counterparts—this is the case for Intertek in Cambodia.

In countries without a national accreditation agency it is possible for the government to contract a foreign accreditation body to carry out national accreditation activities on its behalf. Within ASEAN the Ministry of Development in Brunei has an agreement with the Singapore Accreditation Council (SAC), which includes the use of SAC Accreditation of Laboratories, certification and inspection bodies. The Agreement also provides for training to build up Brunei's capacity. It is also possible for the government to allow foreign accreditation bodies to provide their services direct to laboratories in a foreign country without any formal arrangement with the government. While this would work for many markets it would not assist with improved market access to the EU under any of their mutual recognition agreements since they require the exporting country to endorse the accreditation service.

Source: Haddad (2008)

Regional Standards in a Multilateral World

Standards in the WTO are disciplined by the SPS and TBT Agreements. The WTO agreements do not force countries to adopt standards but they provide disciplines to adopt when using standards, including in the case of the SPS agreement a specific preference

expressed for the *Codex Alimentarius*. One very specific dimension of the two agreements is therefore to aim for a balance (some will see a tension) between countries' autonomy to pursue domestic regulatory objectives and objectives of non-discrimination.

A. WTO disciplines as they relate to regional standards

Therefore unlike other trade policies where bilateral or preferential agreements may be seen as an exception to multilateralism, the SPS and TBT agreements actually incorporate the regional dimension in their provisions.

- Articles 4.1, 9.2 and 9.3 of the TBT agreement address preferential agreement issues.
- Besides, Art. 2.4 recognizes that international standards may be inappropriate in some instances to fulfill some objectives because of “fundamental climatic, geographical or fundamental technological problems”.
- Art. 2.7 seeks to promote recognition of other members' equivalence of technical regulations.
- The agreement suggests that Members seek mutual recognition agreements of conformity (Art. 6.3 of the TBT Agreement).¹⁴
- The TBT agreement refers to international and regional standards setting bodies (Art. 4.1) as well as regional certification bodies (Art. 9.2 and 9.3) but not to regional standards.
- Art. 13 of the SPS agreement refers to the applicability of the agreement to regional bodies.
- The SPS agreement recognizes that national boundaries are not necessarily relevant for the application of SPS measures and thus refers to regional conditions (Art. 6)
- Art. 4 of the SPS Agreement¹⁵ suggests that Members seek mutual recognition agreements of measures.

We can note from the above that there are differences between the two agreements as to how they relate to the regional dimension. It is unclear how material these differences are.

¹⁴ “Members are encouraged, at the request of other Members, to be willing to enter into negotiations for the conclusion of agreements for the mutual recognition of results of each others conformity assessment procedures. Members may require that such agreements fulfil the criteria of paragraph 1 and give mutual satisfaction regarding their potential for facilitating trade in the products concerned”.

¹⁵ “Members shall, upon request, enter into consultations with the aim of achieving bilateral and multilateral agreements on recognition of the equivalence of specified sanitary or phytosanitary measures”.

However, the substantive reason for why the WTO texts incorporate so explicitly regional dimensions is the same (Trachtman, 2003).¹⁶

The fact that regional aspects are so explicitly mentioned in the TBT and SPS agreements – and beyond what is already contained in Art. XXIV – pertains to the nature of standards, which must meet regulatory objectives such as protecting the environment. Meeting these regulatory objectives is by definition creating barriers to trade and the role of the WTO is to help minimize any excessive burden on trade created by such regulations and ensure that no discrimination arises from that. This requires therefore considering in addition to the *non-discrimination* principle the *necessity* of regulation (Trachtman, 2003).

In some instances, necessity may be compatible with regional interventions. At the same time, one must acknowledge that there is an immediate tension between the risk of discrimination created by any agreement between a selected few and the pursuit of legitimate objectives of protection through regional standards interventions.

There is a certain lack of clarity as to how WTO disciplines apply to regional TBT and SPS because of the need to interpret the relation between the provisions of the GATT (Art. XXIV on preferential trade agreements and Art. I on MFN obligation in particular) and the provisions of SPS and TBT agreements themselves. Trachtman (2003) is of the opinion that the WTO language does not require harmonization or mutual recognition *within* PTAs. He notes that one particular area of uncertainty relates to Mutual Recognition Agreements, in particular the potential that they create of discrimination towards non participating trading partners. Unlike the GATS Agreement, the TBT and SPS Agreement do not suggest that recognition be offered on an open basis: i.e. third-party countries be allowed to obtain recognition. On the other hand, a too strict application of the MFN principle could prevent legitimate liberalization of trade in PTA through harmonization and recognition.

¹⁶ It is worth at this stage to mention another area where the question of (regional) standards applies: this is the area of services. Authorization, certification, licensing of services suppliers, recognition of qualifications are also areas where the question of standards arise and thus where regional integration prospects may have a role to play. The WTO GATS Agreement is like the TBT and SPS Agreements recognizing this and quite differently too. Trachtman (2003) notes that Article VII of the GATS provides specifically for the autonomous or mutual recognition of standards of other trade partners. It thus clearly makes of mutual recognition an acceptable exception to the MFN treatment.

B. How can regional standards systems contribute to a more open multilateral world?

As we saw earlier, regional standards and bodies are an important layer of the international trade system and are recognized as such in the WTO texts. In what way can regional initiatives be compatible with multilateral, non-discriminatory and open trade objectives?

The first contribution of preferential agreements might be when they refer to multilateral disciplines in their text to help enforce multilateral disciplines, providing in a way some redundancy in enforcement. Multilateral and preferential agreements have different enforcement mechanisms that may strengthen each other. It may also be the case that concessions in preferential agreements are perceived as more valuable to trading partners (relative to multilateral ones) and infringement of commitments thus more costly. Preferential agreements offer more possibilities of “soft” dispute resolution through dialogue and information sharing at expert level that can help diffusing many disputes. In some cases too preferential agreements offer more stringent arbitration rules than the WTO, for instance foreseeing to repeal offending standards. In some cases such as NAFTA the possibility of resorting to both the WTO and the PTA dispute settlement mechanisms is explicitly made (Piermartini and Budetta, 2009).

Second, preferential agreements can offer a scope for further autonomous liberalization in the area of standards for instance by promoting harmonization in areas not explicitly covered by the WTO or contributing towards eliminating national standards or pushing provisions that are stricter than WTO language. In the first instance, given that standards are generally designed to be MFN – i.e. the standards specification is the same for products from all origin¹⁷ – regional standards design or discipline can complement multilateral disciplines (Lesser, 2007 and see below for more on this). An example of regional standards harmonization is provided by Mercosur. Also, notes Trachtman (2003) agreements among countries that share greater homogeneity of regulatory preferences may render the process of reduction of standards barriers easier. In the second instance, similar principles to that professed by the WTO are adopted, but with a more binding approach than under the WTO. Some PTAs require for instance a negative list type of approach regarding equivalence, in

¹⁷ Note however that this is not a guarantee of non discrimination as the standard may be designed in a way to target a particular source of import (by including a characteristic specific to that source only) or can be implemented in a discriminatory fashion through testing and certification procedures.

that equivalence that is refused must be justified, when the WTO takes a more positive approach in that Members should seek equivalence wherever relevant (Lesser, 2007).

In some instances, national systems may not be adapted for the guarantee of meeting a given standard. The economic reason for such occurrence is the existence of cross-border externalities or cross-border economies of scale. In such circumstances, transnational cooperation may be called for. The SPS Agreement mentions regional conditions for diseases and pests which may indeed require cross-country coordination to ensure control or eradication (this is an example of an externality). Small countries could also lack the resources to develop adequate institutions to manage standards. In particular, accreditation and metrology bodies may not be available in some countries, or it might not make economic sense to have such services in small markets (for instance as in Laos, see box below) and therefore require access to regional facilities in a partner country (this is an example of economy of scale). Thus international cooperation might help implement a “division of labor” among countries according to their specific comparative capacities in certification (Aldaz-Caroll, 2006).

Related to the two points above is the capacity of preferential agreements or regional institutions to help with the implementation of standards and more generally experience sharing. This is not only about perhaps deeper harmonization such as defining common procedures (e.g. risk management, testing protocols). Mutual recognition (or equivalence of measures in WTO language) in standards or testing/certification of trade partners that we have described above are a facilitating practice that is implemented through specific *ad hoc* agreements (e.g. the Agreement on Mutual Recognition of conformity assessment between the EC and the United States)¹⁸ or as part of preferential agreements. This process is essentially bilateral in nature, and in some rarer cases (Europe, MERCOSUR) regional as it requires relatively intensive cooperation among the parties to acknowledge that foreign standards or foreign testing is equivalent to national ones and goes towards meeting the same regulatory objectives.

¹⁸ The agreement covers telecommunication equipment, electromagnetic compatibility (EMC), electrical safety, recreational crafts, pharmaceutical good manufacturing practice, and medical devices. Other MRAs are with Switzerland, Canada, Japan, New Zealand and Australia.

http://ec.europa.eu/enterprise/international/index_en.htm

Finally regional cooperation can also be about provision of technical assistance and transfer of knowledge (see e.g. Singapore and Brunei in box above). Such level of cooperation can be easier to reach, and be more flexible, than in international agreements.

C. Regional standards: a stumbling block or a building block?

Like two sides of the same coin, the characteristics of preferential cooperation that could favor multilateral liberalization are often the same that could hinder it. At the heart of this is the fact that the cooperation creates a “special relationship” that other trading partners have no access to. Two cases in point can arise. The first one is that this preferential relationship is used to raise standards applied to the rest of the world (without a justifiable change in the regulatory objectives). This can occur when a regional standards that is used as the basis of harmonization is protectionist in intent. An example of protectionist regional standard is Mercosur’s standard forbidding the import in wine barrels (Nofal, 2004).

The second, more common, occurrence is when the preferential relationship while leaving standards outside the PTA unchanged or improved, and trade within the parties of the agreement liberalized, provides preferential access to products from within the PTA, but not without, thus leading to trade diversion. This is what happens with “non-open” mutual recognition agreements (i.e. MRAs that are confined to members of the agreement only and cannot be extended to third countries). The economic incentives created by this are the same as for other forms of preferential access as they create market access rents that may act as future stumbling blocks to further liberalization.

There is also the related question of whether regional standards systems produced by preferential agreements may as they grow in size create disincentives to switch to more international harmonization as the cost of switching grows relative to the marginal benefit of increased market access.

The cost of switching to more open, international standards and certification can be increased in two ways. First, there is the problem of compatibility and complexity of belonging to many standards systems. OECD (2005) quotes the difficulties of Mexico to comply with both European and USA systems. This is a problem that belongs to what has been termed by Jagdish Bhagwati as the “spaghetti bowl” of preferential trade agreements. Secondly, there is the issue of how regional systems may alter incentives for further liberalization. Once member of a regional standard system, switching to an international system may not be

attractive enough because the costs would be too big and the marginal benefit of extra market access too small. There is also the possibility that a regional standards group becomes big enough to exert market power and affect the terms of trade, thus providing incentives to exclude non-members. There is finally and perhaps closer to reality, the incentives of large economic areas that are producing standards to export their policy model. Europe and the US are for instance known to be pushing to export their trade policy norms (Maur, 2005; Horn, Mavroidis and Sapir, 2009), as we see in the following section.

D. What the preferential trade agreements tell us

Lesser (2007) and Budetta and Piermartini (2009) examine the legal provisions relating to TBTs of PTA notified to the WTO to assess in particular whether they promote or not convergence towards the multilateral system. Some dimensions reviewed by the two studies convey a positive picture in the sense that PTAs do not go overly against the WTO disciplines:

- Out of 70 surveyed PTAs, 58 have TBT provisions, 30 (51%) make explicit reference to the WTO Agreement on TBTs (Budetta and Piermartini, 2009).
- Reviewing a sample of 24 PTAs, Lesser (2007) finds that 86% of these make a reference to the WTO Agreement on TBTs.

A mere reference to the WTO TBT Agreement would not be enough to conclude that preferential agreements constitute a building block to a liberal multilateral system. The authors thus look at several other dimensions of PTAs that may contribute to further or less convergence.

On the whole, a picture of agreements that by and large as potential complement to international initiatives emerges. For instance, when PTAs seek harmonization of standards, technical regulations and certification procedures among partners (about half of PTA reviewed do so), promotion of the use of international standards is made in about 60-70% of cases (Lesser, 2007). Likewise transparency measures often echo that contained in the WTO such as advance notification of new regulations.

However, at the same time that PTAs seem to promote aspects of multilateral standards disciplines, the same agreements are pushed by large economies with relatively idiosyncratic and distinct approaches. Budetta and Piermartini (2009) conclude with a

cautious note their investigation, noting that harmonization seems generally preferred to mutual recognition (especially for standards setting; mutual recognition of certification is more widespread). This opens the possibility of the strong party imposing its vision of standard policy levels.¹⁹ Harmonization is for instance a distinct feature of EU agreements (it is absent from US ones). Also the fact that regional standards are promoted alongside or instead of international ones (again the EU promotes the use of its standards in several agreements²⁰) adds to a risk of different hubs pulling partner countries in separate directions incompatible with a multilateral vision.

PTAs also predictably focus on areas where multilateral initiatives cannot or do not yet offer disciplines. Two main models of recognition prevail. One, promoted in US PTAs, is the recognition as equivalent of conformity assessment provided in the territory of partner countries. As noted by Lesser (2007), the PTAs the US enters into require quasi-automaticity (and a negative-list-type approach) of this equivalence as any refusal to authorize certification performed in the partner country has to be justified upon request. This contrasts with the softer language in the WTO TBT agreement which merely encourages equivalence. Another feature of US agreements is to seek to promote private sector self-certification through supplier declarations of conformity assessment (SDC). The second model is that of the European Union, which insists more on mutual recognition agreements of conformity. Generally this translates into separate bilateral *mutual recognition agreements*. To date, these agreements involve partners of similar development and it does not seem that PTA between developed and developing partners, even when calling for such MRAs, have led to any being signed yet.

Going beyond the WTO provisions is one motivation of preferential agreements provisions on TBTs. Transparency provisions in PTAs are in some instance more onerous than those required by the WTO with longer notification times (90 days). In the case of harmonization to regional standards and certification, the rationale is often to fill gaps where international

¹⁹ Formally as part of the agreement, or perhaps in more subtle ways through technical assistance for instance.

²⁰ See table 2 above. The diffusion of EU standards is actually clearly advocated in one document: . . . to promote where possible, the adoption of overseas standards, and regulatory approaches based on, or compatible with, international and European practices, in order to improve the market access and competitiveness of European products (European Commission, 2001).

standards do not exist or are inappropriate (COMESA, APEC, Andean Community; Lesser, 2007).

The second motivation in PTAs is to promote implementation. Such agreements often create enforcement and implementation institutions for standards. Most PTAs call for the establishment of a committee, body or network in charge of TBTs (Lesser, 2007). The functions of such bodies can be varied, from exchange of information, monitoring of implementation, consultative forums and in the more advanced cases as harmonization and legal enforcement bodies. CARICOM (Caribbean Regional Organization for Standards and Quality, CROSQ), COMESA (African Regional Organization for Standardization, ARSO) and MERCOSUR (MERCOSUR Standardization Association, AMN) have for instance established regional organizations for standards.

Dispute settlement is another dimension where some preferential agreements can create mechanisms supplementing or going beyond what is foreseen in the WTO. Numerous are the preferential agreements with some form of dispute resolution arrangement (over half of the sample reviewed by Lesser, 2007). There are examples of agreements, like the Andean agreement where the revocation of infringing TBT measures can be ordered, where dispute settlement measures provide for alternative mechanisms of redress than the one offered by the WTO.

We cannot really conclude here as to whether these added disciplines are desirable or not. The purpose seems chiefly to improve market access and is probably working to the advantage of trade partners with sophisticated standards system (for instance already high level of standards compliance is more likely to be automatically “equivalent”). More detailed sector level studies would be required to provide an answer as to whether they promote more effective and less costly use of standards.

We have so far presented evidence about TBTs only, what about SPS? We can presume that similarly regional provisions relating to SPS standards and measures are strongly linked to international harmonization efforts. Casual evidence is provided by preferential agreements referring to the *Codex Alimentarius* (see box).²¹

21 Twenty Agreements in the World Trade Law database mention it.

Box 9. The *Codex Alimentarius* and Preferential Trade Agreements

The North American Free Trade Agreement (NAFTA) between Canada, the United States and Mexico, the Treaty of Acunción establishing the Southern Common Market (MERCOSUR) between Argentina, Brazil, Paraguay and Uruguay and the Asia-Pacific Economic Cooperation (APEC) Council signed by 18 countries have all adopted measures consistent with principles embraced by the Uruguay Round Agreements and which relate to Codex standards.

NAFTA includes two ancillary agreements dealing with sanitary and phytosanitary measures and technical barriers to trade. With regard to SPS measures, Codex standards are cited as basic requirements to be met by the three member countries in terms of the health and safety aspects of food products.

MERCOSUR's Food Commission has recommended a range of Codex standards for adoption by member countries and is using other Codex standards as points of reference in continuing deliberations.

APEC has drafted a Mutual Recognition Arrangement on Conformity Assessment of Foods and Food Products. This calls for consistency with SPS and TBT requirements as well as with Codex standards, including the recommendations of the Codex Committee on Food Import and Export Certification Systems.

EU directives also frequently refer to the *Codex Alimentarius* as the basis for their requirements.

Source: FAO website

Conclusion

Product standards are an important fact of commercial life, and in many instances are justified—at least in part—by economic analysis in terms of spillover effects or information asymmetries. Since these types of effects are not limited by national borders, they can also serve as a basis for regional and global cooperation in the area of product standards.

However, policymakers need to be aware that product standards also impose costs, and that multiple and/or conflicting standards can create an overly burdensome cost environment for business and international trade. Like any regulatory instruments, standards are also open to capture by vested interests, and may in some cases act as a form of protectionist measure.

There is a clear tension between the legitimate protection of important social goals, and the promotion of economic efficiency in some areas, versus the costs that standards can entail both inside and outside national borders. These costs can be particularly severe for firms in countries that are excluded from common approaches to standards, as well as in developing countries where technical and financial constraints can make it difficult to comply with burdensome standards abroad. The economic costs and benefits of product standards need to be carefully assessed in each case, paying particular attention to the possibility of cross-border impacts and whether individual countries are in position to build a satisfactory national standards infrastructure or whether cross-border cooperation is needed.

Preferential trade agreements can provide an answer to regional cooperation problems. Moreover, they are at the heart of liberalization efforts regarding standards and technical regulations. Part of the reason for this is that core measures such as harmonization and mutual recognition of standards or conformity assessment are much easier to negotiate and implement among groups of countries with relatively similar development levels and institutional settings. As with other types of preferential liberalization, however, it is important for policymakers to ensure that such efforts work in tandem with, and do not undermine, the broader multilateral agenda as expressed in the WTO Agreements on SPS Measures and TBTs. Indeed, most preferential trade agreements do not seem to be designed with the objective of taking a different path from the one agreed in the WTO. However, WTO disciplines remain relatively general so preferential agreements should ensure to adopt disciplines that reduce the risks of exclusion of third country traders. This paper has identified a number of possible approaches, such as a focus on international harmonization, or inclusion of open rules of origin regarding certification. Both of these instruments can be seen as ways of “multilateralizing” PTAs. Of course, it is also important for PTA groupings to retain sufficient flexibility to allow standards to evolve in line with international developments, and not to lock participants into a particular set of norms that is difficult to modify.

For countries taking part in a PTA, harmonization and mutual recognition seem to have positive effects on the volumes of trade. Choosing between harmonization and mutual recognition is, however, important, as the level of development of countries, and their regulatory objectives will influence which approach is better suited to their particular circumstances. In general, harmonization seems suitable in the minority of cases. The question of working on commonality in the area of standards definition or simply conformity assessment must also be raised. Cooperation on conformity assessment is arguably a more accessible first step for many countries.

Product standards also raise a number of important issues in the context of North-South PTAs, which are becoming steadily more common. Adoption of identical standards by countries at very different development levels raises serious questions as to whether either country, and in particular the less developed partner, will achieve a socially optimal level of regulation. In addition, we have argued that developing countries can face particularly severe technical and financial obstacles when it comes to undertaking the investments necessary to

bring about compliance with some developed country standards. This analysis suggests that technical assistance, capacity building, and “aid for trade” might have an important role to play in supporting the development of standards infrastructure within PTAs.

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