

TRADE POLICY, STANDARDS, AND DEVELOPMENT

IN CENTRAL AMERICA¹

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Summary

Faster economic growth and expansion of exports in Central America will depend on many factors, including efficient, modern standards systems and removal of technical barriers to trade. This paper reviews the role of standards and trade in the region and suggests areas of priority reform from a trade policy perspective in a new and increasingly important area of public policy and development.

The Benefits of Trade

Policy officials should not waste time worrying about trade unless they believe trade has something to do with economic development. Policy officials should not worry about the international dimension of standards, or investment in standards infrastructure, unless they believe these might help or hinder trade. Trade and standards are not public policy objectives in themselves; they only become priorities as means to promote economic development.

The evidence is overwhelming that larger trade flows – both imports and exports – not only bring a higher standard of living, but also a faster rate of growth.

- Estimates made of the benefits of trade liberalization, using partial equilibrium and computable general equilibrium models, indicate that income gains range from 20 percent to 50 percent of the increased trade volumes.² In other words, if liberalization increases imports (or exports) by \$100 million, the country's income will rise by \$20 to \$50 million. If Central American countries could increase their trade-to-GDP ratios by 50 percentage points (a figure within reach, see Table 1.a), they could increase their per capita GDP levels by at least 10 percent.
- Integration into world markets not only triggers a step increase in income levels. It also fosters higher growth rates.³ On the basis of its research, the World Bank (1996) projects that “fast integrating” emerging economies will grow 1.5 to 2.0 percent faster per year than others.⁴ A.T. Kearney (2000) pegs the growth difference between

“aggressive globalizers” and other countries at 4.0 percent per year.⁵ Bluntly speaking, there is no reason (apart from poor policies) why Central American countries cannot grow at 6 to 8 percent per year, for decades.

Why is trade so good?

Why is trade so good for income levels and growth rates? There are many reasons, most of them familiar, some not. To start with the familiar textbook answer, when an economy exports more, it also imports more. It sells the things it produces best, and buys the things others produce best. Ricardo’s law of comparative advantage works to raise income. Today, the law of comparative advantage is working overtime, as modern technology enables firms to “chop up” the value added chain into small pieces. A complex product, like a computer or power plant, is assembled from components manufactured in many countries, each making what it does best.

Firms enjoy a related benefit from participating in world markets. Up-front research and development, organizational know-how, and plant and equipment outlays all together account for 50 percent or more of average costs in manufacturing and many service industries. When the firm can enlarge its output by selling on world markets, it can spread these costs over much larger volumes, dramatically lowering its break-even price. When a firm can buy selected components and services from abroad, it can save the heavy fixed costs of “doing it yourself”.

Coming down to what counts for ordinary people, jobs in exporting firms pay better than non-exporting firms in the same industry. In the United States, worker compensation is 5 to 10 percent higher in exporting firms, after accounting for all other factors. Similar results have been calculated for Australia and Israel.

When a country trades more intensely, its firms are exposed to a wider range of new products and new processes. They learn fast or go out of business. This is where growth prospects are advanced. Firms that are exposed to world markets are quicker to adopt best practice techniques, increasing their own profits but also raising the productivity of their workers.

Meanwhile, prices for a whole range of goods and services that people buy every day are much lower when world competition is a fact of life in the local marketplace. The worker's paycheck buys more, much more.

If trade is so good, why are barriers so pervasive?

Most people, in Central America and elsewhere, nod in agreement when these benefits are cited. Policymakers in Central America have taken steps in the past decade to obtain these benefits for their countries. In the 1990s they eliminated multiple exchange rates, compressed tariff dispersion, and reduced average tariff levels. Currently, average tariffs are quite low in the countries considered in this paper, with all but one country maintaining an average tariff level of less than ten percent.⁶ This is a change from the previous trade policies: El Salvador, for example, reduced its average tariff level from of

10 percent in 1995 to 5.7 percent in 1999. The Central American countries have ridden the wave of “open regionalism” that swept over Latin America in the 1990s, revamping, to a certain extent, their own subregional trade regime and signing, individually or collectively, free trade agreements with Mexico, Chile, the Dominican Republic and Caricom. The five members of the Central American Common Market moreover have signed a free trade agreement with Panamá.⁷ Central American countries are also participating actively in the negotiations towards a Free Trade Area of the Americas. Nevertheless, much of trade policy is still devoted to trade restrictions, not trade expansion. In Central America, trade-to-GDP ratios for most countries are below the levels reached in Singapore, Hong Kong, Luxembourg and Ireland, four small countries that have made the most of international markets (Table 1.a). Low trade-to-GDP ratios reflect explicit and implicit barriers that limit commerce. Some of the barriers are inherited – most notably geography. A country located next to big, rich markets will trade more than a country located next to small, poor markets. But most of the barriers reflect policies of one kind or another – tariffs, quotas, exchange rate systems, administrative and regulatory procedures applied at entry and exit points such as ports and airports – and standards and technical regulations.⁸

Low investment to GDP ratios reflect some of the same problems. Foreign direct investors tend to flock to host countries that have, among other attractions, adequate infrastructure, and that have transparent and predictable regulations and procedures. Countries that meet world standards tend to attract investors. Table 1.b shows that some

Central American countries have FDI to GDP ratios that are comparable to Ireland, although still well below Luxembourg, Singapore and Hong Kong.

While there are many other factors at play, countries that are viewed by foreign firms and investors as having arbitrary product standards and sanitary and phytosanitary (SPS) measures will likely have lower levels of foreign investment. This includes countries such as those in Central America. In contrast, Costa Rica which has taken steps to streamline and modernize its regulatory procedures has attracted companies in the manufacturing and high-tech sectors. Table 2 describes some US views on current technical barriers to trade (TBT) and SPS measures in Central America.

A detailed outline on political economy is not needed to understand why trade barriers, such as those embedded in mandatory standards persist. Barriers benefit powerful groups, even though they harm the whole country. They buy the economic status quo at the expense of economic growth. They are argued to protect a way of life, even though many citizens, if given a choice, would actually prefer economic growth. Technical barriers to trade – discriminatory technical regulations or cumbersome certification procedures, for example – are more difficult to pinpoint as trade barriers than tariffs and quotas.* While a tariff can be identified as an explicit trade barrier– and eliminated through negotiations with trading partners – standards and testing procedures are more subtle. Further, many standards and testing procedures aim to serve the public good, and

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- * For an overview of difficulties and a new approach to quantifying the trade effect of standards and technical regulations see; *Quantifying the Impact of Technical Barriers to Trade: Can It Be Done?* Keith E. Maskus and John S. Wilson, forthcoming University of Michigan Press)

can actually promote rather than hinder trade. Understanding the trade and development impact of standards requires a brief explanation of their role.

A Primer on Standards and Technical Regulations

Standards have been around for time immemorial. Stones in the massive Mayan and Inca temples, and Gothic cathedrals, were cut to standard sizes, which made it possible to build these impressive structures far from local quarries. Long de facto, standards were also formalized in Europe as far back as 1120, when King Henry I of England ordered that the ell, the unit of measure that evolved into the yard, be the exact length of his forearm – and that this unit be the standard of measure of length for his kingdom. The United States has long forgotten Henry I but still uses his measure.

The number of voluntary standards continues to grow rapidly as the world economy becomes more complex and new products and processes are created. Table 3 gives a snapshot of U.S. standards as they existed a decade ago. Nearly 100,000 standards were then in place, and in the 1990s, thousands of new standards were adopted. The total number of notifications of new technical regulations based on the SPS Agreement submitted to WTO during a given year doubled in the last five years from 220 in 1995 to 438 in 1999. The WTO received 650 notifications of new technical regulations under the Technical Barriers to Trade (TBT) Agreement in 1999 alone.⁹ By January 1999, the International Organization for Standardization (ISO) had promulgated 11,950 voluntary international standards.¹⁰ Of these, 1,058 were developed during the year 1998 (Table 3 gives a breakdown by sector). Developing countries are also starting to make a mark in

the ISO system. However, while they make up 73 percent of ISO membership, they still hold only 5 percent of the secretariat positions. Increasing their participation would allow developing countries to have a greater say in ensuring that international standards reflect their needs.

The distinction between “standards” and “technical regulations”

The terms “standards” and “technical regulations” are often used interchangeably. But they differ with respect to compliance norms. A *standard* is defined as a “document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance *is not mandatory*.”¹¹ While there are varied definitions on what constitutes a standard, the Organization for Economic Cooperation and Development (OECD) has defined common elements that are essential for a technical specification to rise to the level of a standard. Two of the most important are its elaboration by *consensus* and its subsequent *consistent use*.¹²

Standards are developed by and adhered to by companies, and are in principle voluntary. But in business life, what is legally voluntary may be financially necessary. Most standards are enforced by the market. For example, in the United States the standard size for notebook paper is 8½ by 11 inches. It’s perfectly legal for a manufacturer to sell only size A4 notebook paper – the standard in much of the rest of the world – in the U.S. market. However, the company won’t get much business. To use a new economy example, Dell Computer could sell personal computers with only the Linux operating

system installed, and let customers buy and install their own version of Windows. Good luck to Dell, if it made this decision!

Moreover, exporters may find that their goods will not be bought abroad unless they conform to a set of specific rules – and are certified accordingly. The ISO 9000 quality assurance standards, for example, are growing in popularity and are often seen as essential for market access. Business consumers, when faced with two products, will tend to buy from the firm that is ISO 9000 certified, even if it is more expensive. Being marked as internationally acceptable can be an expensive proposition: Just certifying for ISO 9000 for a small to midsize US company can cost up to \$250,000.¹³ Compliance is even more costly. Added to this are the costs incurred in meeting foreign standards and testing practices. For small firms in developing countries this is a significant investment. Not participating in this process, however, may mean not exporting.

Voluntary standards are market driven. They may arise through a “de facto” process that is uncoordinated by commercial guidelines (everybody who bought a Beta VCR in the 1980s will be familiar with this process) or by coordinated work through an international organization such as the ISO or IEC. Technical regulations or mandatory standards are developed and enforced by governments to fulfill particular objectives, generally the protection of safety, health, and the environment. These are developed under the auspices of public goods and include examples such as fire codes, pharmaceutical testing, motor vehicle safety requirements, and environmental protection regulations. In this paper we use the term “standard” to refer to specifications that are legally voluntary (but

enforced by the market) and “technical regulations” to refer to legally mandated specifications. Voluntary standards are obviously a major concern to private firms; the public policy issues revolve around the context in which they are adopted. Our recommendations for developing countries, including those in Central America, focus directly on mandatory technical regulations, the main subject matter of the WTO TBT and SPS Agreements. However, they apply as well to standards.

Standards infrastructure

The term “infrastructure” fits naturally with ports, airports, and water systems. Countries also depend, to a huge extent, on “soft infrastructure”, such as health, education, and judicial systems. The standards system is a type of soft infrastructure, with several layers. The first layer is the body of technical experts – a government agency, a private trade association, an international forum – that writes the standard. Complex standards for engines or computer software can require hundreds of pages. The second layer is the mechanism for assuring that goods and services that claim to meet the relevant standard do in fact live up to the claim. This is called conformity assessment. The third layer is the audit system that ensures that conformity assessment is working properly – that errors are kept within an acceptable level of tolerance given the type of product. (Dishwasher faults are less costly than airplane faults.) This is the accreditation and recognition system. Table 4 maps out the available routes in the United States for conformity assessment, accreditation and recognition.

Depth of standards infrastructure

Countries differ widely in the depth of their standards infrastructure. Countries that produce a large variety of industrial goods will require a more diversified and sophisticated standards infrastructure than those that produce mainly primary goods. While few countries have the depth portrayed for the United States in Table 4, all countries have the need for a standards infrastructure that meets their own domestic and trading needs. Demand for standards infrastructure is generally driven by the private sector, but guided by government policies. National differences largely reflect national needs: how complex is the economy? How deep does it engage in international commerce? Some countries have a long history of dealing with standardization and conformity assessment issues; others are new to the game. Table 5 illustrates the range of experience with conformity assessment infrastructure in the Western Hemisphere. Among the Central American countries, Costa Rica, which currently has the most diversified export base in Central America, has a more comprehensive conformity assessment structure than do, for example, Honduras and Nicaragua. Likewise, there are significant differences in the extent to which businesses use standards in their daily operations. Some firms rely primarily on international mechanisms. In Central America, companies are beginning to participate in this by, for example, registering for ISO 9000 certification. Table 6 lists ISO 9000 registrations in the Western Hemisphere – as of July 1999, 49 companies in Central America qualified for ISO 9000 registration.

Within Central America, the standards infrastructure varies, depending on the size and staffing of national standardizing bodies and on national certification and laboratory

accreditation capabilities. In general, these countries are relatively new to international standards disciplines. None participated in international trade disciplines on standards until recently, since most of the countries joined the WTO/GATT only after the completion of the Uruguay Round. Only Costa Rica and Panama are ISO members; the other countries are correspondent members, a category of membership similar to observer status. All have accepted the WTO Agreement on TBTs, inasmuch as TBT obligations that are part of the single undertaking of the Uruguay Round. Moreover, Central American nations have negotiated comprehensive TBT provisions in their sub-regional trade agreements. Most countries in the region are relatively new to certification and accreditation activities,¹⁴ and all have expressed a need for modernization and improvement of standards infrastructure. One of the more important challenges in the region is upgrading of legal metrology systems – the infrastructure that supports accurate measurements for weight, size, and other product characteristics, that need to be exactly calibrated. This infrastructure tends to be relatively expensive.

As standards take on greater importance, national standards bodies are becoming more important, more prestigious and are seen more and more as part of the trade policy team. The ISO, in a study of infrastructure in Latin America, quotes an official from Colombia's National Standards Body, ICONTEC as saying "The standards institutes in the past ... used in many ways to protect the national industry with local and tailor made standards. The role of [these bodies] was reduced in scope for the sole reason that the standards didn't play an important part in the economic development of the country and the closed markets. In today's world, we see the importance of NSBs in three ways: (1)

participating in international standardization processes through ISO and IEC to increase technological transfer to their countries; (2) to help the local industry in the increase of their international competitiveness; and (3) to facilitate trade with other countries.”¹⁶ The same case can be made in Central America. A former negotiator for Costa Rica has pointed out that “as the [Central American] countries transform and modernize their productive apparatus, the process of regulation and standardization will be increasingly strengthened.”¹⁷

Standards and the structure of exports

National concerns with the international dimension of standards infrastructure largely mirror the products a country sells in the international marketplace. Hence it is worth looking at the structure and evolution of exports. Most countries import a diversified menu of products: capital goods (related to commonplace hard infrastructure like public transportation and telephone switches and particular local industries), petroleum, intermediate components for the particular local industries, and a wide range of final consumer goods. Importing countries obviously want to avoid buying unsafe and shoddy merchandise. A country’s exports are much more specialized than its imports. In that range of products, the nation is intensely interested in the standards and technical regulations that govern its access to foreign markets.

Goods sold by the Central American countries range from bananas to sugar. Largely agricultural economies, all countries must follow closely SPS provisions. Textile producers will also be aware that a large proportion of standards-related cases brought to

the WTO have involved textiles. As they move to diversify their economies and welcome high-tech and manufacturing firms into their homelands, these countries will also be confronted with new standards to meet:

Guatemala. *Principal exports* (in US\$ millions of dollars); Bananas \$194,634, Coffee \$586,797, Sugar \$316,629

Honduras. *Principal exports;* Coffee \$431,329, Bananas \$115,000, Melons \$22,067

Nicaragua. *Principal exports;* Coffee \$167,032, Sugar \$43,810, Other unwrought gold \$32,162

Panama. *Principal exports;* Bananas \$139,519, Fish \$226,953; Other Sugar \$25,589

El Salvador. *Principal exports;* Coffee \$324,541, Sugar \$77,635, Fish \$38,000

Standards in the Trade Equation

Like many things standards can be a force for good, or a force for evil. One observer claims that “standards are the glue that will bind the New World order. But when misused, they can also present potent protectionist weapons.”¹⁹

Consumer Efficiency

Who has the time or skill to evaluate the qualities of all the things he buys? Instead, the buyer assumes that his new car will not collapse after 5000 miles, that his soup is free

from botulism, and that his computer will reach the Internet. These common assumptions only hold because producers adhere to safety and quality standards.

Standards convey information to the buyer in a consistent, understandable manner. For example, the owner of a transistor radio does not have to talk to the salesperson or experiment to buy a replacement battery. She will pick the appropriate battery (AAA, AA, A), install it, and the radio will again work. Standards reduce so-called “transactions costs” both for buyer and seller. Anyone who has tried to find the right auto part in a disorganized junkyard knows how high “transaction costs” can be!

Production Process Methods (PPM) and Trade

Apart from their personal convenience, more consumers (especially in the industrial countries) are concerned about the way things were made – whether environmental destruction or sweatshop labor were part of the production process. These concerns are crowding the desks of trade negotiators. They are asked to explore the certification of environment-friendly products and worker-friendly plants – in short, production process methods (PPM), once outside the realm of trade talks. PPM certification raises a host of standards issues – but underlying these issues is a growing demand among consumers for reassurance on *how* things are made as well as reliable safety and quality.

Production Efficiency

Standards can also work to the advantage of producers, especially producers new to the market. Commercial relations have changed dramatically in the last two decades as a

result of changes in technology and economic policy that have shaped the way countries and companies interact with one another. Changes in economic policy are familiar and do not require elaboration. Most countries have adopted a market-oriented approach to economic policy. Public corporations, heavy regulation, and import-substitution are “out”; private firms, deregulation, and open economies are “in”.

Technology trends are equally dramatic. These days, it is seldom that a successful company “goes it alone”, producing at a single location, making its own components. Instead, successful companies locate multiple plants across borders. They chop up the value chain, buying and selling components among their own foreign subsidiaries and networks of reliable suppliers and dependable purchasers.

Standards and the new international economy. The resulting intra-industry trade (one country produces and exports D-Rams, another produces and exports microprocessors) and the decentralization of production activities have opened new opportunities for developing countries. As trade flows have grown over the past quarter-century, the composition of trade has changed substantially: developing countries now sell more manufactures as a proportion of their overall exports, and are working closely with international corporations.

Standardization of parts and processes is a timesaving reference tool. It enables economies of scale, repetitive production, reduced inventories, and flexibility in substituting sources of supply. From these core benefits come side-benefits, in terms of

technology diffusion, enhanced competition, network extension and product compatibility.

- *Technology diffusion.* A technological advance incorporated into a standard is more readily adapted and used by others. This can be a tremendous benefit to smaller economies that do not have the resources to develop their own technologies from scratch.
- *Enhanced competition.* When features of products made by different manufacturers conform to one standard, comparison is easier and competition is sharper.
- *Network extension.* Standards that define interfaces enable products to work together or communicate with each other. This characteristic helps build networks, and networks are a major source of external economies (the greater the number of users, the more valuable the product).
- *Product compatibility.* Standards help countries specialize and exchange – for example, a standard format for stereo components allows a certain type of component to be produced in one country, with the knowledge that it will work with component parts produced in other parts of the world. The Internet relies on standardized formatting so that users all over the world can communicate.

The Costs Associated with Standards

Along with these benefits, standards and technical regulations have a troubling side: they can be used intentionally or inadvertently to limit competition, thereby raising costs to consumers and excluding new producers from the market. New producers are often based in emerging markets. Countries may not accept assurances from their developing country partners that their goods are similar to those produced at home – and may have to take costly steps to prove that this is so. Indirectly, therefore, standards and technical regulations can act as barriers to exports from developing countries.

Based upon European Union calculations, the OECD has estimated that up to 80 percent of all world trade is affected by standards of some kind.²⁰ This implies that most sectors are affected – an estimate supported by the fact that the EU has developed some form of harmonized technical regulation for 30 sectors.

Differing standards and technical regulations. Barriers arise, almost like a mist, when product and process standards and technical regulations differ across national markets. One obvious example is the use of different systems of weights and measures – for example the imperial versus the metric system, or different voltage standards for electrical appliances. These differences are costly to resolve, and often work to segment the market into two sets of producers. The result is less competition, shorter production runs and higher prices. Differing food safety standards – those related to sanitary and phytosanitary standards – also can impose costs to the international trading system. A World Bank study estimates that new harmonized European standards on aflatoxin (a

substance which affects products such as peanuts, corn, and other agricultural products), could cost African exporters \$700 million each year, as opposed to adoption of an international standard.²¹

Differing assessment systems. Conformity assessment procedures are technical procedures – such as testing, verification, inspection and certification – to confirm that products fulfil the requirements specified in regulations and standards, and ensuring that those certifying the products are qualified to do so. Barriers quickly arise when testing requirements in countries differ, making products face several levels or types of testing. In fact, conformity assessment barriers (and related accreditation and recognition barriers) restrict far more trade than differing product specifications. Foreign products may be denied market entry because the testing procedures or results are not recognized, or because those who performed the tests are not accredited – all aspects of conformity assessment.

Generally, exporters bear the cost of these procedures. Separate certification is needed in cases where mandatory product specifications differ from country to country, even where countries rely on common international standards. Duplication of effort associated with separate conformity assessment procedures is costly, and effectively keeps some producers out of certain markets. In a 1996 study, OECD economists found that differing standards and technical regulations, combined with the cost of testing and compliance certification can constitute between 2 and 10 percent of overall production costs – a

significant amount!²² Opaque and duplicative conformity assessment procedures can obviously become an effective tool of protection.

The Trade Policy Response to Technical Barriers

As tariffs have come down and as more countries have liberalized, the character of international trade negotiations has changed. First and most obviously, participation in the trading system have changed dramatically, and so has its scope. More countries than ever before – 139 as of November 2000 – are members of the WTO and thus participants in designing the rules that govern the multilateral trade. The range of issues covered in the multilateral trade arena has grown more complex, expanding to cover intellectual property rights, investment, government procurement, agricultural subsidies, trade in services, TBT, and SPS measures. Countries must now consider what effect a range of domestic policies might have on their partner trading countries. They must also decide what evolving rules are most critical to their national interests. In this paper, we argue that even small developing countries should devote carefully rationed attention to the TBT and SPS systems.

New Goals for a New Era

While trade negotiators could once focus almost entirely on bringing down tariffs and eliminating quotas, the importance of these at-the-border barriers has in general decreased. In Latin America, for example, the average tariff has dropped from about 40 percent in the 1980s to around 12 percent today – and the figure is around 8 percent for Central America. For the industrialized countries this figure is even lower now – an

average of 3 to 4 percent. Quotas are largely confined to two big product areas, agriculture and textiles and clothing. Textile and clothing quotas are due to be phased out by 2005.

The success of the multilateral trading system has also created its own set of problems: The negotiating focus, accordingly, has had to shift somewhat from tariffs and quotas, to behind-the-border non-tariff measures that were once considered the exclusive domain of domestic policy. As tariff barriers are reduced, the importance of standards and technical regulations – to take our theme – has increased markedly. Standards are a necessary component of production, consumption and commercial exchange. They can also be cleverly used as a tool of protectionism. Standards thus become an issue of importance for industry, for regulators and for trade negotiators.²³

A Different Ball Game

For trade negotiators, standards and technical regulations create a new ball game. It's clear that lower tariffs mean freer trade. It's not at all clear how changes in particular standards or technical regulations, or the system as a whole, affect trade. Specifications can be voluntary standards or mandatory technical regulations; they can be national or international; and most important, they can increase access by developing countries to the market or they can bar entry.

Standards and technical regulations are negotiated differently than are other barriers. Unlike tariffs and quotas, where the ultimate goal is elimination, most standards and

technical regulations serve a larger social purpose, and no one seeks their elimination. Instead, the goal is to design standards and technical regulations in a manner that preserves the widest possible scope for competition, and thus restricts trade as little as possible.

A Primer on TBT and SPS Provisions

Prior to the Uruguay Round, many TBT and SPS issues, including those related to food safety, including animal and plant health regulations, were addressed by the multilateral Tokyo Round Agreement (1979) on Technical Barriers to Trade (TBT). This Agreement was often referred to as the "Standards Code." The Code permitted its signatories to introduce potentially trade-restrictive technical or sanitary and phytosanitary regulations in the pursuit of a "legitimate" objective, by invoking the protection of human, animal or plant health, the environment, animal welfare, religious considerations, and national security motives – all mentioned in GATT XX(b) as legitimate grounds for restricting imports.

By the time of the Uruguay Round, the Tokyo Round Standards Code was regarded as both overly permissive and under-inclusive. The Tokyo Round Code allowed countries to impose new restrictions simply by citing a "legitimate" objective, and as a multilateral code, it did not encompass all GATT members. These shortcomings were addressed in the Uruguay Round Agreement on Technical Barriers to Trade (TBT Agreement), and the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement). Both agreements discipline, to some extent, national standards and technical regulations, and

both agreements are obligatory for all WTO members as part of the *single undertaking*. Table 7 indicates the extent to which Western Hemisphere countries have fulfilled their TBT and SPS obligations.

The TBT Agreement

The TBT Agreement expands the scope and coverage of international disciplines on mandatory technical regulations and voluntary standards. TBT obligations apply to all levels of government, and cover all industrial and agricultural products. The Agreement does not cover services or government procurement, nor do the TBT provisions apply to sanitary and phytosanitary measures.

Avoid unnecessary obstacles. The objective of the Agreement is to prevent technical regulations from becoming *unnecessary obstacles to trade*. Article 2.2 of the TBT Agreement provides that "members shall ensure that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to trade." The Agreement sets out the basic principles for addressing the preparation, adoption and application of technical regulations and the procedures for conformity assessment. It circumscribes, in a mild way, mandatory technical regulations that specify "product characteristics or their related processes and production methods." The Agreement starts by enumerating the familiar list of legitimate objectives for which governments may develop technical regulations, including, *inter alia*: national security; the prevention of deceptive practices; the protection of human health or safety, and animal and plant life or health; and the environment.

National treatment and most-favored-nation. Key principles of this Agreement are national treatment and most-favored-nation (MFN) treatment – goods bought from other members will be accorded treatment no less favorable than that accorded to products of national origin or to like products originating in any other country. The principles of national treatment and MFN are extended to conformity assessment procedures.

Preference for international standards. The TBT Agreement encourages the use of international standards, where appropriate: members are obligated to reference international standards in existing regulations, not just when developing new ones. Indeed, the failure to rely on international standards may constitute a barrier to trade.²⁴ The Agreement also encourages members to move towards harmonization of conformity assessment procedures through the development of mutual recognition agreements, and to accept the conformity assessment procedures of other members, “wherever possible”.

Performance rather than design. The TBT Agreement encourages WTO members to state their technical regulations that specify product requirements in terms of performance characteristics rather than design or descriptive characteristics.

Code of Good Practice. The TBT Agreement sets out general principles for the development and application of voluntary standards through its Code of Good Practice. This Code, which is annexed to the TBT Agreement as a multilateral agreement, requires

standards bodies in the signatory countries to publish their work programs at regular intervals, detailing the standards they are drafting.

Transparency. One of the main accomplishments of the Agreement has been to increase the transparency of the standards process. The agreement requires each WTO member to establish a “national enquiry point” where requests can be received, redirected to the appropriate body, and answered. Members must notify the WTO of technical regulations they are preparing, and give other members a time period to comment. Members must notify the WTO whenever they are preparing a technical regulation that is not in accordance with the technical content of relevant international standards or recommendations in circumstances where the technical regulation or conformity assessment procedure may have a significant effect on the trade of other WTO members.

These obligations are also reflected in the subregional free trade agreements concluded by Central American countries in the last few years. In addition to TBT provisions, these agreements also include criteria for carrying out risk assessments and set out disciplines on metrology.

The SPS Agreement

The SPS Agreement is focused more narrowly than the TBT Agreement, and therefore contains certain objective standards of legitimacy for all SPS measures. The Agreement recognizes the sovereign right of every WTO member to take measures that may restrict trade in order to implement national laws protecting:

- Human or animal health from food-borne risks (additives, contaminants, toxins or disease-causing organisms in their food);
- Human health from animal or plant-carried diseases;
- Animals and plants from pests and diseases.

National treatment and most-favored-nation. The Agreement respects the national treatment and most-favored nation principles. Hence, restrictions should apply equally to domestically-produced food, and to local animal and plant diseases, as well as to products coming from abroad. The SPS Agreement recognizes, however, that the animal and plant disease conditions may differ among supplying countries, and the differences may be taken into consideration in the trade measures applied.

Avoid arbitrary measures. A main objective of the SPS Agreement is to reduce the arbitrary quality of government decisions in the field of sanitary and phytosanitary measures. It does this by enumerating factors that should be taken into account when imposing health protection measures. In particular, measures taken to ensure food safety and animal and plant health should be based on the analysis and assessment of *objective and accurate* scientific data. Decision-making should be consistent and transparent in determining an appropriate level of health protection. Potentially trade-restrictive measures should be applied for no other purpose than the goal of ensuring food safety and animal and plant health, and should not result in unjustified barriers to trade.

WTO Enquiry Points. The SPS Agreement calls for members to establish enquiry points for old and new measures, and to notify new measures to the WTO Secretariat. Members are urged to base their measures on international standards.

Dispute Settlement Cases

Cases brought under the WTO's new Dispute Settlement Understanding (DSU) with an SPS or TBT dimension, through December 1999, are listed in Table 8. Three SPS disputes have gone through the entire WTO Dispute Settlement Mechanism (DSM) process (EC – Beef Hormones from U.S. and Canada; Australia – Salmon from Canada; and Japan – Varietals from U.S.). Key lessons from these three cases are summarized below. Other cases are before active panels, several cases have been settled without a panel decision, and several are pending consultations.²⁵ No dispute settlement finding has been based on the TBT Agreement, but the Agreement has been referenced in several cases. In particular, three big cases have TBT dimensions (U.S. – Reformulated Gasoline from Venezuela; EC – Beef Hormones from U.S. and Canada; and EC – Asbestos from Canada).

EC – Hormones from U.S. and Canada. In this highly charged case, the WTO Appellate Body confirmed that an SPS regulation (in this instance, banning the import of beef that was fed artificial hormones) could be justified by *minority* scientific opinion as to the level of risk. Contrary to popular rhetoric from the environmental “protest industry”, the *Beef Hormones* case does *not* stand for the proposition that SPS risk assessments must carry the imprimatur of the scientific establishment. A country is

entitled to apply any risk tolerance level it wishes, including zero risk. However, it must come forth with sound scientific evidence (even if the evidence is accepted by only a minority of qualified scientists) that the product in question exceeds the specified risk level. A country cannot ban a product (as the EC did with imported beef) simply because popular opinion fears there might be risk. Any European consumer can choose not to purchase hormone-fed beef; and reasonable labels can be affixed that distinguish natural beef. The WTO violation occurred when imports of hormone-fed beef were banned even before they reached the meat counter. Because the case was decided on SPS grounds, the Appellate Body did not rule on the TBT issues raised by the United States. As a result of this WTO decision, the EC has commissioned fresh scientific studies of the risks associated with hormones, and is revising its regulations in light of the new studies.

Australia – Salmon from Canada. In this case, Australia continued its 1960s-era ban against the import of fresh salmon from Canada, citing old evidence and risk assessments. The Appellate Body, after a detailed analysis, found that the ban was not consistent with the level of sanitary and phytosanitary precautions applied to domestic salmon. In fact, whereas Australian firms could sell fresh salmon in the local market, foreign firms could only sell cooked salmon. The inconsistency caused the ban to violate the SPS agreement. This was a clear application of the basic GATT national treatment rule reiterated in the Agreement.

Japan – Varietals from U.S. Japan prohibited the import of new varieties of familiar fruits (e.g., different varieties of apples) until it performed lengthy fumigation tests on

each new variety. The supposed purpose of the tests was to ensure that the fumigation procedures known to work for killing pests on variety A also worked for varieties B, C and D. The Appellate Body ruled these prohibitions violate the SPS Agreement, because Japan had adduced no evidence that pests on different fruit varieties require different fumigation techniques, nor had Japan ensured that the new tests were conducted within a reasonable period of time.

United States – Reformulated Gasoline from Venezuela. This case was decided under the national treatment Article III of the GATT, and the special exceptions Article XX. The arguments and results would have been the same if the case had been decided under the TBT Agreement. The U.S. Environmental Protection Agency put in place new pollution emission standards (with numerous parameters) for “reformulated” gasoline. The new standards called for a reduction of emissions from baseline levels. To judge whether it met the new standards, each domestic refiner was assigned its own prior baseline experience. Foreign refiners, however, were assigned a statutory baseline. Obviously the baselines differed between the two sets of refiners, to the disadvantage of foreign producers. This discrimination was ruled inconsistent with the GATT, and the United States subsequently changed the baseline for foreign refiners.

Developing Countries: Standards for the Home Market

The issues surrounding standards and technical regulations in the home market (including imports) are conceptually easy for most small and medium-size developing countries. It makes no sense for these countries to spend millions of dollars to reinvent the standards

infrastructure already invented in the United States, Europe, and other industrial countries. No small developing country would waste money designing a personal computer from scratch; likewise, it makes no sense to design a standards infrastructure from scratch. Instead, small developing countries, including those in Central America, should borrow and buy what they need.

Whenever possible, they should borrow international standards. These will best acclimate local producers for the world market, and they will open the domestic market to the widest possible competition from foreign sources. When international standards are not available or suitable, the government might suggest to local firms that they adopt wholesale, for example, the voluntary standards used by the European Union or the United States. The government can reinforce its suggestion by applying those standards to its own purchasing decisions. As for mandatory technical regulations, again the government can determine what areas are most urgent, and borrow the system of another country. The least-cost option of course would be to apply those standards used by their major trading partners.

To build out its conformity assessment system, governments should invite tenders from qualified (accredited) suppliers based anywhere in the world. The winning firm can specify and provide the local presence it will need to carry out its testing work. This approach will save millions of dollars by comparison with a conformity assessment system built from the ground up.

A final word: whenever possible, a country should rely on the manufacturer's declaration of conformity (see Table 4), for both local goods and imports. Declarations can be checked by spot audits and heavy fines can be imposed on violators; this is usually a much cheaper system than insisting on independent laboratory tests.

Mutual recognition agreements

Mutual recognition agreements (MRAs) were once hailed as a new fashion in the world of standards and technical regulations. They are referenced and encouraged in the TBT Agreement. The basic idea of an MRA is that if country A and country B have different standards or technical regulations, or different testing procedures, they will reciprocally agree to import products that meet the other country's standards, technical regulations, or tests. The laudable goal of MRAs is captured by the phrase: "One product, one test, accepted everywhere."²⁶

The MRA idea is sound, but its implementation has been slow and labored, even between the United States and the European Union. It has taken years to negotiate a handful of MRAs, and most of them cover only standards, not testing procedures. Duplicate testing is still common in trade between industrial countries. Different standards and technical regulations still segment important markets.

In light of this history, small developing countries should not waste effort on trying to negotiate MRAs. This includes possible negotiation on MRAs within regional groupings such as those that might take place in Central America as part of free trade talks. If a

small developing country adheres to the standards, technical regulations, and testing procedures of the European Union, for example, it might as well accept European products that meet the same hurdles, even if Europe does not accept its products. This may not seem fair. But, as Jean Baptiste Say observed, just because another country has bad harbors is no reason to put rocks in your own! In time, the Europeans may wake up and accept developing country products without duplicative tests; and if Europe negotiates an MRA with the United States, developing country products may enter the U.S. market as a bonus!

Rethinking the TBT and SPS Agreements

A central issue that came out of the first triennial review of the WTO TBT Agreement, and that was mentioned often by developing countries in their preparations for the Seattle Ministerial (Table 9) is the difficulty developing countries face in implementing the TBT and SPS Agreements. Whether this is due to lack of hard infrastructure, shortages of trained staff, or an excess of other, more pressing, policy priorities on the docket, implementation of SPS and TBT obligations has been slow (refer to Table 7).

Financial constraints and the need for technical assistance are often named as major impediments. The conclusion of the Second Triennial Review of the TBT agreement in November 2000 recognized the need to address specific problems confronted by developing countries in implementation of the TBT Agreement and need for "realistic and practical options for progress."²⁷

New Issues for Developing Countries

- **Environment.** Starting with the North American Free Trade Agreement (NAFTA) side agreements and most recently seen in the U.S.-Jordan free trade agreement, environmental issues have become part of trade negotiations. Many developing countries are wary of this and see environment related trade measures as badly disguised barriers to products from developing countries. This extends to addressing issues such as eco-labels or environmental standards in any new trade round. Countries in Central America moving to diversify from agricultural exports to manufactured products have a particular stake in the outcome of debates over inclusion of environmental standards in trade agreements.
- **Biotechnology.** An increasingly complex sector, biotechnology has spurred a number of new standards-related issues. In addition to bringing up new questions – i.e. what are the standards for selling genetically-modified food products, and how is “sound science” to be defined? – Developing countries are increasingly participating in the biotech discourse through the use of their traditional products. Homeopathic medicines made from uña de gato (cat’s claw), or medical procedures based on shaman rituals are two examples of new issues that have puzzled trade negotiators. Developing countries can be, in these areas, standards-makers.

Conclusions

We draw several conclusions from a review of the current state of standards and trade in consideration of the development profile in Central America.

Shared regional infrastructure. Rather than having each country absorb the cost of setting up national accreditation, testing and metrology infrastructure, it makes sense to take a regional approach. The Central American Regime on Standards-Related Measures, Metrology and Authorization Procedures encourages members to harmonize and adopt common standards and technical regulations. This would facilitate the sharing of equipment, experts and information, which could get more bang out of a very limited buck. In Guatemala, for example, the total budget for standards in 2000 totals \$119,000. This represents a small fraction of the total government budget. Shared infrastructure in the region would allow Guatemala, and other countries to devote scarce public resources to the most pressing development needs.

Regional cooperation in international bodies. Developing countries complain of the difficulties and cost of participating in international standards bodies. However, without this participation, they can not influence the development of international standards. In the Americas there are three regional standardizing bodies: the Pan American Standards Commission (COPANT), the Inter-American Accreditation Cooperation (IAAC) and the Interamerican Metrology System (SIM). The regional bodies can serve to facilitate trade by expediting information exchange and by coordinating activities, where appropriate. These bodies can serve as venues for countries of the Americas to work together to develop common positions in international fora.

Collective information gathering efforts. One significant cost in meeting international standards and in complying with technical regulations is keeping up to date with the

specifications of these regulations. Many firms hire expensive staff to do this type of research. One cost-saving approach would be to regionalize these efforts. This could be done nationally or through private sector associations, on a task-oriented basis. For example, meat-exporters could pay someone on a part-time basis to keep them up to date on regulations on meat product standards in their three main markets.

Increase transparency by leveraging information technology. Disseminating the work of standards institutions through the Internet is one way of increasing participation. All countries in the region have Internet access in their standards offices. Countries could comment on international standards under consideration in international groups in which they have an interest without paying to send their experts to Geneva – a lovely city, but expensive to live in and fly to. Moreover, countries such as El Salvador, with a standard office of only 9 individuals, can use targeted investments in information technology to communicate with other experts inside and outside the region.

Push for a sunset clause in international standards development. A standard only has value if it is adopted and used. Standards – voluntary or mandatory should not be maintained if the circumstances that led to their adoption no longer exist. Some form of review should be implemented periodically, to evaluate existing standards. An international standard could potentially lie dormant for a long period of time, to be used only when invoked in a trade dispute. Pressure on developing countries, such as those in Central America which have joined the WTO, to reference international standards is

intense. Obsolete or irrelevant standards, therefore, should be eliminated by the international standardizing community.

Endnotes

- ¹ Hyun Koo Cho, Research Associate at the Institute for International Economics, helped collect the data for this paper.
- ² Estimates of the effect of trade liberalization on income levels are collected in Gary Gary Hufbauer and Erika Wada, "Impact of Dollarization on Trade, Prices, Finance", Conference paper, Strategic Assessments Group, November 1999, Table 1. See also David Dollar and Aart Kraay, "Growth *Is* Good for the Poor," The World Bank Group, March 2000.
- ³ Estimates of the effect on trade intensity on growth rates are collected in J. David Richardson, "Exports Matter... And So Does Trade Finance", Conference on the 65th Anniversary of the U.S. Export-Import Bank, May 15-16, 2000.
- ⁴ World Bank, *Economic Prospects for Developing Countries*, 1996.
- ⁵ A.T. Kearney, *Globalization Ledger*, Global Business Policy Council, Washington DC: April 2000.
- ⁶ World Bank figures show 1999 average unweighted tariffs for Costa Rica at 7.2 percent, Honduras at 7.8 percent, and Nicaragua at 10.9 percent; and the 1998 tariff for El Salvador at 5.7 percent, for Guatemala at 8.4 percent and for Panamá 9.2 percent.
- ⁷ The Central American Common Market includes Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. In this paper when we talk about Central America we refer to these countries plus Panamá.
- ⁸ For an overview of the nature of trade protection in the post-Uruguay Round environment see; Anderson, et al, "Potential Gains from Trade Reform in the New Millennium, paper for the Third Annual Conference on Global Economic Analysis, Mt. Eliza, 27-30, June 2000.
- ⁹ The World Bank, "Technical Barriers to Trade and Standards: Challenges and Opportunities for Developing Countries, Presentation for the Committee on Technical Barriers to Trade, Geneva, 25 February 2000.
- ¹⁰ International Standards Organization, "ISO in figures", memo, January 1999.
- ¹¹ TBT Agreement, based on ISO/IEC guide.
- ¹² OECD, Regulatory Reform and International Standardization, TD/TC/WP (98) 36, January 1999.
- ¹³ Zuckerman, Amy, "Global Standards can be a Drag on the Bottom Line," The Journal of Commerce, <http://www.joc.com>.
- ¹⁴ Sherry Stephenson, Standards and Conformity Assessment as Nontariff Barriers to Trade, World Bank Working Paper 1826, September 1997, Table 5.
- ¹⁵ Sherry Stephenson, Standards and Conformity Assessment as Nontariff Barriers to Trade, World Bank Working Paper 1826, September 1997, Table 5.
- ¹⁶ ISO, Factors Affecting ISO Adoption in Latin America, ISO, mimeo, pp. 4-5.
- ¹⁷ Jaime Granados, "Comercio Internacional, Regulación y Normas: El Reto de Desarrollo en América Central," paper presented at Conference on Trade Facilitation, Regulation and Standards: the Development Challenge in Central America, June 28, 2000, p. 13.
- ¹⁸ See National Research Council, *Standards, Conformity Assessment and Trade: Into the 21st Century*, Washington DC, National Academy Press, 1995, pp. 12-13.
- ¹⁹ Amy Zuckerman, "The Hidden Disrupters of a Global Supply Chain," *Supply Chain Management Review*, American Management Association, January 1997, p. 58.

²⁰ OECD, *op. cit.*

²¹ "Saving two in a billion: A case study to quantify the trade effect of European food safety standards on African exports" (with Tsunehiro Otsuki and Mirvat Sewadeh, Paper prepared for a conference on "The Economics of Quarantine" Melbourne October 24-25, 2000,

²² "Product Standards, Conformity Assessment and Regulatory Reform", chapter 6 in *The OECD Report on Regulatory Reform*, vol. I: *Sectoral Studies* (1997).

²³ See John S. Wilson, "The Post-Seattle Agenda of the WTO in Standards and Technical Barriers to Trade: Issues for Developing Countries, Washington, D.C., World Bank, 1999 (mimeo).

²⁴ See John S. Wilson, *Standards and APEC: An Action Agenda*, Washington DC: Institute for International Economics, 1995, p. 35.

²⁵ For a review of the major SPS cases, see Craig Thorn and Marinn Carlson, "The Agreement on the Application of Sanitary and Phytosanitary Measures and the Agreement on Technical Barriers to Trade," *Law and Policy in International Business*, vol. 31, 2000.

²⁶ The MRA concept has been endorsed by the Trans Atlantic Business Dialogue (TABD) and the Asia Pacific Economic Cooperation countries (APEC), among other groups.

²⁷ World Trade Organization, Technical Barriers to Trade Agreement, Geneva, G/TBT/9, November 13, 2000.

Table 1.a. Economic Openness of Central American Countries vs. Advanced Small Open Economies, 1999.

(share of trade to GDP, \$ billions, percentages)

	Merchandise ^a		GDP	Share of merchandise trade to GDP	Goods and services ^b		Share of goods and services trade to GDP
	exports	imports			exports	imports	
Costa Rica	6.6	6.3	11.3	114	8.2	7.5	139
El Salvador	1.2	3.1	12.4	35	2.9	4.5	60
Guatemala	2.4	4.4	19.6	35	3.4	4.7	41
Honduras	0.9	2.7	5.4	68	2.2	3.2	100
Nicaragua	0.5	1.8	2.3	106	0.8	1.9	123
Panama	0.8	3.5	9.4	46	6.8	7.3	149
Dominican Republic	0.9	5.7	17.4	38	8.1	9.6	102
Hong Kong	173.9	179.5	158.6	223	209.3	202.4	260
Singapore	114.6	111.0	88.2	256	133.7	131.9	301
Luxembourg	7.9	10.9	18.0	105	20.3	20.0	224
Ireland	70.4	46.0	91.4	127	77.7	68.2	160

Notes:

a. Merchandise exports are f.o.b., and imports are c.i.f. In general, the figures are customs data as reported to UN International Trade Statistics.

b. Service trade data are from the UN ECLAC's estimates on Central American Economies, 1999.

Service data for Hong Kong, Singapore, Luxembourg, and Ireland are on the basis of the methodology of the IMF *Balance of Payments Manual*, 1993.

Complete service data for Luxembourg and Ireland for 1999 are not yet available.

Thus share of service trade (exports and imports) to goods trade from 1998 data is used to extrapolate the 1999 figures.

Sources: IMF, *International Financial Statistics*, June 2000.

UN Economic Commission For Latin America and the Caribbean (ECLAC),
Preliminary Overview of the Economies of Latin America and the Caribbean 1999.

Table 1.b. Inward FDI Flows as share of Gross Fixed Capital Formation. 1997.
Inward FDI Stocks as share of GDP, 1997. (percentages)

	FDI flows as share of gross fixed capital formation	FDI stocks as share of GDP
Costa Rica	26.0	38.9
El Salvador	2.4	3.2
Guatemala	3.3	13.1
Honduras	11.5	18.5
Nicaragua	24.7	27.3
Panama	49.3	37.5
Dominican Republic	11.5	17.7
Hong Kong	9.9	54.6
Singapore	27.3	81.6
Luxembourg^a	26.7	55.1
Ireland	19.0	23.3

Note: a. The figures are for Belgium and Luxembourg.

Source: UNCTAD. *World Investment Report: Foreign Direct Investment and the Challenge of Development*. 1999.

Table 2. U.S. Perspective on TBT and SPS Measures in Central America, 1999.

	Overview from the US perspective	TBT	SPS
Costa Rica	<p>US trade balance: \$(1.6) bn US merchandise exports: \$2.4 bn US merchandise imports: \$ 4.0 bn <i>US FDI Stock (1998)</i>: \$2.1 bn, concentrated in the manufacture of electronic and health care products. Much of it involves assembly of apparel and integrated circuits from imported parts, e.g. all baseballs used in the Major Leagues assembled in Costa Rica.</p>	<p>The complex and bureaucratic customs procedures was streamlined by the passage of a new customs law in 1995. Nevertheless, a system of standards is not uniformly implemented in Costa Rica due to inadequate laboratory equipment and funds.</p>	<p>A shipment of US rice in 1999 was delayed because the normal process for obtaining standard SPS documentation was extended. A law stating that mills can only purchase rough rice from producers (not intermediaries) has since been overturned. However, US industry estimates rice exports would increase by \$5-25 millions if current barriers were removed.</p>
El Salvador	<p>US trade balance: \$(0.1) bn US merchandise exports: \$1.5 bn US merchandise imports: \$ 1.6 bn <i>US FDI Stock (1998)</i>: \$ 0.6 bn</p>	<p>There are no legal barriers to US exports of manufactured goods or bulk, non- agricultural commodities. Moreover, standards have not been a barrier to the implementation of US consumer-ready food products.</p>	<p>Since 1992, arbitrary SPS measures have limited poultry imports from the US. Standards are applied in a discriminatory manner since domestic production is not subject to the same requirements. Rice shipments are restricted without any risk assessments.</p>
Guatemala	<p>US trade balance: \$(0.5) bn US merchandise exports: \$1.8 bn US merchandise imports: \$ 2.3 bn <i>US FDI Stock (1998)</i>: \$ 0.4 bn</p>	<p>Food products sold in the domestic market must be tested, registered and carry labels in Spanish. Law requires that every size or form of product sold must be registered separately, even if the product content is of identical composition. Personnel trained in this are in short supply. Product registration and testing processes are time consuming. Enforcement of the product registration and labeling requirement has been irregular, but is becoming more strict.</p>	<p>n.a.</p>

Table 2. U.S. Perspective on TBT and SPS Measures in Central America, 1999; (continued).

	Overview from the US perspective	TBT	SPS
Honduras	US Trade balance: \$ (0.3) bn US merchandise exports: \$ 2.4 bn US merchandise imports: \$ 2.7 bn <i>US FDI Stock</i> (1988): \$0.2 bn, concentrated in the manufacturing and service sectors.	Some import restrictions remain, based mainly on phytosanitary, public health, public morale and national security grounds. Restrictions are imposed on firearms, chemicals, narcotics, etc. Others apply to chicken, meat, and cosmetics.	Frequent changes in SPS requirements are seldom reported to the WTO. Restrictive SPS requirements blocked US poultry imports for several years. Inconsistent enforcement of arbitrary laws is said to exist.
Nicaragua	US Trade balance: \$ (0.1) bn US merchandise exports: \$ 0.4 bn US merchandise imports: \$ 0.5 bn <i>US FDI Stock</i> : n.a.	Drastic 1997 Tax Reform Law removed most non-tariff, discretionary barriers. Arbitrary customs procedures and valuations remain, but these may not have a TBT dimension.	n.a.
Panama	US Trade balance: \$ 1.4 bn US merchandise exports: \$ 1.7 bn US merchandise imports: \$ 0.4 bn <i>US FDI Stock</i> (1998): \$ 27 bn, Concentrated in financial, maritime, petroleum, telecommunications, energy and wholesale sectors.	Standards and certifications regime generally conforms to WTO standards. No overall labeling of testing requirements for imports. The judicial system poses a problem for outside investors due to poorly trained personnel, huge case backlog, and lack of independence.	SPS permits are sometimes used to control import levels. The previous de facto two-day waiting period for SPS permits has been lengthened to 30 working days. Inspections are often delayed due to a lack of personnel and budget.
Dominican Republic	US trade balance \$ (0.2) bn US merchandise exports: \$ 4.1 bn US merchandise imports \$ 4.3 bn <i>US FDI stock</i> (1988): \$ 0.5 bn, concentrated in the manufacturing and financial sectors. Much of it is located in export processing zones where footwear, apparel, and to a lesser extent, electronic products and medical goods, are assembled from us materials and exported back to the US.	De facto trade barriers result from a highly discretionary customs valuation system. Arbitrary customs clearance procedures delay the importation of merchandise.	US certifications and standards are generally accepted. US agricultural exports are sometimes subject to arbitrarily enforced and non-scientific based SPS measures.

Sources: USTR, National Trade Estimate of Foreign Trade Barriers, 2000. (www.ustr.gov/reports/index.html)
WTO, Trade Policy Reviews. (www.wto.org/english/tratop_e/tpr_e)

Table 3. U.S. Standards, by Developer (active standards as of 1991).

Federal government	Number of standards
Department of Defense	38,000
General Services Administration (non-defense procurement)	6,000
Other federal (primarily regulatory)	8,500
<i>Examples:</i> Environmental Protection Agency, Occupational Safety and Health Administration, Federal Communications Commission	
Total	52,000
Private sector^a	Number of standards
Scientific and professional societies	13,000
<i>Examples:</i> American Society of Mechanical Engineers (ASME), Institute of Electrical and Electronics Engineers (IEEE)	
Trade associations	14,500
<i>Examples:</i> National Electrical Manufacturers Association (NEMA), Computer and Business Equipment Manufacturers Association (CBEMA)	
Standards-developing membership organizations	14,000
<i>Examples:</i> American Society for Testing and Materials (ASTM), National Fire Protection Association (NFPA)	
Total	41,500
Overall total (federal government and private sector)	93,500

Note: a. Not including de facto industry standards.

Source: National Research Council. 1995. *Standards, Conformity Assessment, and Trade*

into the 21st Century. Gary Clyde Hufbauer, Chairman. Washington DC: National Academy Press.

Table 4. U.S. Conformity Assessment System Framework.^a

	Manufacturer's declaration of conformity	Product testing	Product certification	Manufacturing processes: quality system registration
Level 1 Assessment	Manufacturer's own testing and quality assurance.	Testing of products, components, materials, etc.	Certification of products against a standard or set of standards.	Audit and registration of manufacturer's quality assurance system (e.g., against ISO 9000 standards).
	<i>By manufacturer</i>	<i>By independent laboratory</i>	<i>By product certifier</i>	<i>By quality system registrar</i>
Level 2 Accreditation	Acceptance.	Accreditation of laboratory's competence.	Accreditation of certifier.	Accreditation of quality system registrar.
	<i>By customer or regulatory authority</i>	<i>By laboratory accreditation program (private or gov't)</i>	<i>By certifier accreditation program (private or gov't)</i>	<i>By registrar accreditation program (private or gov't)</i>
Level 3 Recognition	Acceptance.	Official recognition of laboratory accreditation program.	Official recognition of certifier accreditation program.	Official recognition of registrar accreditation program.
	<i>By customer or regulatory authority</i>	<i>By government</i>	<i>By government</i>	<i>By government</i>

Notes: ISO = International Standards Organization.

a. The table maps out the various available routes in the United States for ensuring that products conform to standards.

Source: National Research Council. 1995. *Standards, Conformity Assessment, and Trade into the 21st Century*. Gary Clyde Hufbauer, Chairman. Washington DC: National Academy Press.

Table 5. Conformity Assessment Infrastructure in the Western Hemisphere.

Country	Inspection and Testing	Product Certification	Quality Systems Registration	Laboratory Accreditation
Caribbean				
Antigua & Barbuda	•			
The Bahamas	•	•		
Barbados	•	•		
Belize	ni	ni	ni	ni
Dominica	•			
Dominican Republic	•	•	•	•
Grenada	•			
Guyana	•	•		•
Haiti	•	•		
Jamaica	•	•		•
St. Kitts & Nevis	ni	ni	ni	ni
Saint Lucia	•	•		
St. Vincent & Grenadines	ni	ni	ni	ni
Suriname	•			
Trinidad & Tobago	•	•	•	
Central America				
Costa Rica	•	•	•	•
El Salvador	•			
Guatemala	•	•		
Honduras	•			
Nicaragua	•			
Panamá	•	•	•	•
South America				
Argentina	•	•	•	•
Bolivia	•	•		
Brasil	•	•	•	•
Chile	•	•	•	•
Colombia	•	•	•	•
Ecuador	•	•	•	
Paraguay	•	•		
Perú	•	•	•	•
Uruguay	•	•	•	
Venezuela	•	•	•	•
North America				
United States	•	•	•	•
Canada	•	•	•	•
México	•	•	•	•

• = Yes; Blank = no; n.i. = no information available

Source: Carmiña Londoño, *Free Trade Area of the Americas (FTAA) Conformity Assessment Structure*, NIST Special Publication 941, U.S. Department of Commerce, July 1999 <http://www.ts.NIST.gov>

**Table 6. Quality System Registration for ISO 9000
in the Western Hemisphere.**

Country	Number of companies registered ISO 9000
Caribbean	
Antigua & Barbuda	1
The Bahamas	0
Barbados	6
Belize	ni
Dominica	0
Dominican Republic	21
Grenada	1
Guyana	3
Haiti	0
Jamaica	7
St. Kitts & Nevis	ni
Saint Lucia	1
St. Vincent & Grenadines	ni
Suriname	0
Trinidad & Tobago	17
Central America	
Costa Rica	25
El Salvador	5
Guatemala	3
Honduras	0
Nicaragua	1
Panamá	15
South America	
Argentina	524
Bolivia	1
Brasil	2,476
Chile	65
Colombia	130
Ecuador	ni
Paraguay	3
Perú	20
Uruguay	17
Venezuela	162
North America	
United States	24,014
Canada	3,000
México	192

ni = no information

Source: Carmaña Londoño, *Free Trade Area of the Americas (FTAA) Conformity Assessment Structure*, NIST Special Publication 941, U.S. Department of Commerce, July 1999 <http://www.ts.NIST.gov>

Table 7. WTO Obligations under the TBT and SPS Agreements in the Western Hemisphere.

Country	WTO Member	Statement of Implementation (Article 15.2) ^a	Enquiry Point ^b	Acceptance of Code of Good Practice ^c
Caribbean				
Antigua & Barbuda	•		▲	
The Bahamas				
Barbados	•	•	•	•
Belize	•		•	
Dominica	•		▲	
Dominican Republic	•		•	•
Grenada	•			•
Guyana	•		▲	•
Haiti	•			
Jamaica	•		•	•
St. Kitts & Nevis	•			
Saint Lucia	•	•	•	
St. Vincent & Grenadines	•			
Suriname	•			
Trinidad & Tobago	•	•	•	•
Central America				
Costa Rica	•		•	•
El Salvador	•		•	•
Guatemala	•		▲	
Honduras	•	•	•	
Nicaragua	•		•	
Panamá	•	•	•	•
South America				
Argentina	•	•	•	•
Bolivia	•	•	•	•
Brasil	•	•	•	•
Chile	•	•	•	•
Colombia	•	•	•	•
Ecuador	•		•	•
Paraguay	•		▲	
Perú	•	•	•	•
Uruguay	•		•	•
Venezuela	•		▲	•
North America				
United States	•	•	•	•
Canada	•	•	•	•
México	•	•	•	•

• = Yes for both TBT and SPS; Blank = no; ▲ = Sanitary and Phytosanitary Enquiry Point only.

- In its statement of implementation, a country simply describes what measures, of any, it has taken to fulfill the obligations of the TBT and SPS Agreements.
- The Enquiry Point is a single “traffic cop”, where foreign persons can get directions about the country’s standards and technical regulations.
- The Code of Good Practice is a plurilateral code relating to the procedures for adopting voluntary standards. The Code is not mandatory under the WTO single undertaking.

Source: Based on table in Londono, July 1999 <http://www.ts.NIST.gov> Updated to February 2000 from WTO information <http://www.wto.org>.

Table 8. Multilateral Disputes and Standards/Technical Barriers to Trade.

As will be seen in the table below, standards are important subjects of contention among WTO members. According to the WTO Secretariat, 193 disputes have been notified to the WTO. Of these, 32 have been settled, 34 Appellate Body and Panel Reports have been adopted, and 22 cases are active as of 23 May 2000. The rest of the cases are in a consultative phase between affected parties. There have been 25 cases that reference TBT or SPS provisions – 13 percent of the whole. In its first year of operation, the DSU saw one fourth – 11 out of 44 – of its cases refer to these two agreements. While the actors have largely been developed countries, the developing countries have also played a role. In fact, the first case resolved in the DSU was brought by a developing country – Venezuela, which won the case – and referenced TBT provisions. Looking at the sectors affected in these disputes, it becomes clear that this issue should be of great interest to the developing countries!

Disputes referencing SPS and TBT Agreements in WTO DSU: to December 1999

	Petitioner	Respondent	Product	Issue	Outcome
DS2	Venezuela	United States	Petrochemicals	Environmental	Appellate Rept
DS3	United States	Korea	Agriculture	Food Safety	Consultations
DS4	Brazil	United States	Petrochemicals	Environmental	Appellate Rept
DS5	United States	Korea	Agriculture	Food Safety	Settlement
DS12	Peru	EC	Agriculture	Marketing	Settlement
DS14	Chile	EC	Agriculture	Marketing	Settlement
DS18	Canada	Australia	Agriculture	Quantitative	Appellate Rept
DS20	Canada	Korea	Agriculture	Food Safety	Settlement
DS21	United States	Australia	Agriculture	Quantitative	Active
DS26	United States	EC	Agriculture	Food Safety	Arbitration
DS41	United States	Korea	Agriculture	Food Safety	Consultations
DS48	Canada	EC	Agriculture	Food Safety	Arbitration
DS56	United States	Argentina	Textiles	Customs	Appellate Rept.
DS61	Philippines	United States	Agriculture	Environmental	Consultations
DS72	New Zealand	EC	Agriculture	Customs	Settlement
DS76	United States	Japan	Agriculture	Food Safety	Appellate Rept
DS85	EC	United States	Textiles	Transit	Settlement
DS96	EC	India	Mixed	Customs	Settlement
DS100	EC	United States	Agriculture	Food Safety	Consultations
DS133	Switzerland	Slovak Republic	Agriculture	Transit	Consultations
DS134	India	EC	Agriculture	Customs	Consultations
DS135	EC	United States	Textiles	Customs	Active
DS137	Canada	EC	Agriculture	Quantitative	Consultations
DS144	Canada	United States	Agriculture	Transit	Consultations
DS151	EC	United States	Textiles	Customs	Consultations

Source: John Wilson. The Seattle Agenda of the World Trade Organization in Standards and Technical Barriers to Trade: Issues for Developing Countries. January 1999. World Bank unpublished Working Paper. Updated to December 1999.

