D STANDARDS IN THE MULTILATERAL TRADING SYSTEM

This Section focuses on standards-related WTO legal texts and relevant jurisprudence. The Section begins with a discussion of the texts themselves. This is followed by a detailed discussion of some of the key concepts relevant to standards in the TBT and the SPS Agreements as well as GATT 1994. The Agreements are then placed in the context of the economic discussion presented in the previous Sections and reference is also made to accumulated standards-related jurisprudence.[125] Since the focus of the Report is on product standards, only WTO legal texts and jurisprudence bearing on "goods" will be discussed. It is important to note though that the General Agreement on Trade in Services (GATS) also contains standards-related provisions on services, specifically, in Article VI paras. 4 and 5.

The two standards-related Agreements in the WTO – the TBT and SPS Agreements – have to be considered within the larger set of Agreements of the multilateral trading system, specifically GATT 1994 and the Dispute Settlement Understanding (DSU), to which they are linked in an integral fashion. These links are sometimes very clear – as for example in Article 14 of the TBT Agreement and Article 11 of the SPS Agreement, which refer to how disputes related to these Agreements have to be settled in accordance with the provisions of the DSU. Other links are less obvious but no less important, such as those relating to the basic obligation of Article I (Most-Favoured-Nation – MFN – treatment), Article III (National Treatment), Article XI (General Elimination of Quantitative Restrictions) and Article XX (General Exceptions) in GATT 1994.

The TBT and SPS Agreements seek to ensure that governments which pursue non-trade-related policy objectives through the use of standards do so with the least disruptive effects on trade. The MFN and national treatment obligations – the non-discrimination obligations – provide an important check against standards whose application results in less favourable treatment of foreign suppliers compared to domestic producers or compared to other foreign suppliers. The dispute settlement mechanism allows countries to settle disagreements regarding the consistency of specific standards with the requirements of the TBT and SPS Agreements and the obligations of GATT 1994.

There have been some recent studies attempting to explain why there are international agreements on standards.[126] But a simpler explanation is the one that economists give to justify international cooperation in tariffs. If countries pursue unilateral trade policies, trade wars are a likely outcome. Each country attempts to shift the terms of trade in its favour by applying the optimal tariff, but this inevitably invites retaliation from trade partners. Thus, the world ends up poorer with higher average protection and lower volumes of international trade. A similar situation can arise with product standards, as each country tries to achieve its policy objectives with the use of product standards without considering the costs imposed on its trading partners.

The above argument illustrated the similarities between tariffs and standards, in the sense that tariffs and standards that are optimal from the national point of view may well be suboptimal from a global point of view. There is also an important difference between the two policy instruments. While a tariff clearly has the purpose and effect of discriminating between imported and domestic products, it can in practice be quite difficult to establish the purpose and effect of a standard. It may therefore occur that governments claim to introduce a standard to correct for market imperfections like the ones discussed in Section IIB, but that the standard in reality has been designed such as to create an artificial comparative advantage for domestic producers. In other words, standards may be employed as a "disguised" form of protectionism. Note that this

125 As pointed out in Section IIB.1 the economic terminology with respect to standards does not exactly correspond to the legal terminology. This Section will continue to use mainly economic terminology. But whenever direct reference is made to the TBT or the SPS Agreements or related jurisprudence, the legal terminology is used (see Table 1).

126 In a recent paper, Battigalli and Maggi (2003) used the notion of incomplete contracts to explain the nature of international agreements on product standards. An incomplete contract is an agreement which is unable to specify each party's contractual obligation for every possible state of the world. This incompleteness arises in the case of product standards because it is impossible to predict what kinds of standards may arise in the future. Changes in technology, in consumer demand and in the degree of international integration will lead to the development of new product standards. Government regulations on standards are also likely to change depending on emerging public concerns. So it is impossible to write ex ante agreements that can anticipate all possible contingencies relating to standards and trade. They argue that in these circumstances, the optimal set of international agreements on product standards would have a three-part structure: (i) provisions that specify standards for existing products; (ii) a non-discrimination (national treatment) rule; and (iii) a dispute settlement procedure.

is in principle not in the interest of the country introducing the standard, as consumers tend to suffer from protectionist policies. Given the reliance of governments on information from producers when it comes to designing standards (see Section IIC) the risk of government capture by the private sector seems real.

1. STANDARDS IN WTO AGREEMENTS

Well-designed standards can play an important role in guaranteeing the smooth functioning of markets. Standards that are set at the national level will typically aim at facilitating transactions in the national market. They may, however, also affect the outcome of international transactions and may enhance or reduce trade. Standards can also be designed with the purpose of reducing imports and afford protection to domestic producers. The Preambles of both the TBT and the SPS Agreements state that Members should not apply standards in a manner which would constitute a "disguised restriction to international trade".

(a) TBT Agreement

The TBT Agreement covers technical regulations, standards and conformity assessment (see Box 14 for the exact definition of these terms). A major distinction between a technical regulation and a standard is that compliance with the regulation is mandatory. The TBT Agreement applies to a wide range of bodies and systems, local, national, regional and international, governmental and non-governmental. Rights and obligations under the TBT Agreement vary depending on the type of body concerned. For instance, technical regulations prepared by central government bodies are subject to the highest level of obligations under the Agreement.

Box 14: Some definitions used in the TBT Agreement

Technical regulation is a document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Standard is 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. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Conformity assessment is any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled.

Source: Annex 1 of the TBT Agreement.

The TBT Agreement recognizes that governments employ technical regulations to attain legitimate objectives such as national security requirements, the prevention of deceptive practices, protection of human health or safety, animal or plant life or health, or the environment. But technical regulations must not be prepared, adopted or applied with a view to, or have the effect of, creating unnecessary obstacles to international trade. So technical regulations should not to be more trade-restrictive than necessary to fulfil a government's legitimate objective(s).

Article 2 of the TBT Agreement provides a set of principles that are to be adopted in the preparation, adoption and application of technical regulations by central government bodies. These include:

- MFN and national treatment in respect of technical regulations;

- using relevant international standards as a basis for technical regulations. Whenever a technical regulation is in accordance with relevant international standards, and is prepared for one of the legitimate objectives explicitly mentioned, it shall be rebuttably presumed not to create an unnecessary obstacle to international trade;
- playing a full part in the preparation by international standardization bodies of international standards;
- accepting as equivalent technical regulations of other Members, if these regulations adequately fulfil the objectives of their own domestic regulations;
- specifying technical regulations based on product requirements in terms of performance rather than design or descriptive characteristics;
- informing other WTO Members in advance and discussing with them their comments whenever a proposed technical regulation is not in accordance with the technical content of relevant international standards, and if the technical regulation may have a significant effect on their trade; and
- publishing promptly or making available all technical regulations which have been adopted.

Most of the principles applied by the TBT Agreement to technical regulations also apply to voluntary standards which are covered by the *Code of Good Practice for the Preparation, Adoption and Application of Standards* (Annex 3 of the Agreement). Pursuant to Article 4.1 of the TBT Agreement, Members must take "such reasonable measures" as may be available to them to ensure that standardizing bodies, which are on their territory or to which they are related, accept and comply with this Code of Good Practice. Members are further instructed not to take measures which have the effect of requiring or encouraging such standardizing bodies to act in a manner inconsistent with the Code of Good Practice. In addition to the obligations by Members, standardizing bodies that have accepted the Code of Good Practice assume the general disciplines of the TBT Agreement.

The Committee on Technical Barriers to Trade has agreed on a set of principles concerning transparency, openness, impartiality and consensus, effectiveness and relevance, coherence, and developing country interests that would clarify and strengthen the concept of international standards under the Agreement and contribute to the advancement of its objectives.[127] These principles were also seen as equally relevant to the preparation of international standards, guides and recommendations for conformity assessment procedures. Bodies operating with open, impartial and transparent procedures, that afforded an opportunity for consensus among all interested parties in the territories of at least all Members, were seen as more likely to develop standards which were effective and relevant on a global basis and would thereby contribute to the goal of the Agreement to prevent unnecessary obstacles to trade.

A major part of the TBT Agreement deals with conformity assessment procedures, which are technical procedures – such as testing, verification, inspection and certification – to confirm that products fulfil the requirements laid down in technical regulations and standards. Conformity assessment procedures are not to be prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. So conformity assessment procedures shall not be stricter or be applied more strictly than is necessary to give confidence that products conform with the applicable technical regulations or standards.

Article 5 of the TBT Agreement prescribes the procedures to be followed for conformity assessment by central government bodies. These include:

- MFN and national treatment with respect to various aspects of conformity assessment procedures, such as expeditiousness, information requirements, confidentiality of information about products, fees, the siting of facilities used in conformity assessment procedures and the selection of samples, procedures to review complaints, etc.;
- using relevant guides or recommendations issued by international standardizing bodies as a basis for their conformity assessment procedures;

[127] See Annex 4 of WTO document G/TBT/9 dated 13 November 2000.

- playing a part in the preparation by international standardizing bodies of guides and recommendations for conformity assessment procedures;
- whenever a relevant guide or recommendation issued by an international standardizing body does not exist and if the conformity assessment procedure may have a significant effect on trade of other Members, publishing a notice at an early stage, notifying other Members, providing to other Members copies of the proposed procedure and allowing reasonable time for other Members to make comments in writing, discussing these comments upon request, and taking these written comments and the results of these discussions into account;
- publishing promptly or otherwise making available all conformity assessment procedures which have been adopted.

As was pointed out in Sections IIB and IIC, multiple testing of products will increase the costs of international trade. Thus, Article 6 of the TBT Agreement requires Members to ensure that the results of conformity assessment procedures in other Members are accepted provided of course that they are satisfied that the procedures offer an assurance of conformity equivalent to their own procedures. To this end, Members are encouraged to enter into mutual recognition agreements in respect of the results of each others' conformity assessment procedures. But a high degree of confidence in the testing and certification bodies of one's trade partner is a basic pre-condition for the effective functioning of an MRA. Thus the TBT Agreement recognizes that prior consultations may be necessary to arrive at a mutually satisfactory understanding regarding the competence of the conformity assessment bodies.

Given that developing countries may encounter difficulty in the preparation and application of standards, the TBT Agreement provides for technical assistance and special and differential treatment for these countries.

Article 11 refers to technical assistance that is to be provided by WTO Members to other Members. The TBT Agreement envisions that this will be given on a range of activities such as the preparation of technical regulations, the establishment of national standardizing bodies, participation in international standardizing bodies, the establishment of regulatory bodies, or bodies for the assessment of conformity with technical regulations and standards, and the establishment of the institutions and legal framework which would enable them to fulfil the obligations of membership or participation in international or regional systems for conformity assessment, etc.

The special and differential (S&D) treatment provisions in Article 12 require WTO Members to ensure that their technical regulations, standards and conformity assessment procedures do not create unnecessary obstacles to exports from developing country Members, to recognize that developing country Members are not expected to use international standards which are not appropriate to their development needs as a basis for their technical regulations, standards or test methods, to take reasonable measures to ensure that international standardizing bodies and international systems for conformity assessment facilitates participation of relevant bodies in all Members, taking into account the special problems of developing country Members.

(b) SPS Agreement

The SPS Agreement applies to sanitary and phytosanitary measures which may, directly or indirectly, affect international trade (see Box 15 for the definition of SPS measures).

There are several basic obligations of Members under the SPS Agreement (Article 2). The first is to ensure that their SPS measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination among Members where the same conditions prevail or a disguised restriction on international trade. Second, measures are to be applied only to the extent necessary to protect human, animal or plant life or health, are to be based on scientific principles and are not to be maintained without sufficient scientific evidence.

Box 15: What are SPS measures?

An SPS measure is any measure applied:

(i) to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;

(ii) to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;

(iii) to protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; and

(iv) to prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests.

Source: Annex A of the SPS Agreement.

The SPS Agreement encourages harmonization of sanitary and phytosanitary measures among Members on as wide a basis as possible based on international standards (Article 3). This is because harmonization of SPS measures will prevent their use for arbitrary or unjustifiable discrimination among Members or as a disguised restriction on international trade.[128] Furthermore, the recognized international standards (Codex, IPPC and OIE) are based on sufficient scientific evidence. In this harmonization, Members are to base their sanitary or phytosanitary measures on international standards, guidelines or recommendations, where they exist (see Box 16 for examples of the international standards, guidelines and recommendations specified in the SPS Agreement). In fact, measures which conform to international standards are deemed to be necessary to protect human, animal or plant life or health and to be consistent with the provisions of the SPS Agreement.

But since international standards will not exist in all cases, WTO Members may still adopt different SPS measures. They must, however, ensure that their measures are based on an assessment of the risks to health. Furthermore so that these do not hamper trade, the SPS Agreement mandates Members to accept the sanitary and phytosanitary measures of others as equivalent to their own if the exporting country demonstrates to the importing country that its measures achieve the importing country's appropriate level of SPS protection (Article 4).

The requirements of risk assessment and sufficient scientific evidence are essential for maintaining the balance in the SPS Agreement between the shared, but sometimes competing, interests of promoting international trade and of protecting the life and health of human beings, animals or plants.[129] So a WTO Member may maintain or introduce measures which result in higher standards than the prevailing international norms if there is scientific justification or as a consequence of the level of sanitary and phytosanitary protection a Member determines to be appropriate.

Article 5 of the SPS Agreement spells out the procedures and criteria for the assessment of risk and the determination of appropriate levels of sanitary or phytosanitary protection. In assessing the risk and determining the measure to be applied for achieving the appropriate level of sanitary or phytosanitary protection, both technical and economic factors are to be taken into account. Technical factors include available scientific evidence, relevant processes and production methods, relevant inspection, sampling and testing methods, prevalence of specific diseases or pests. Economic factors include the potential damage in terms of loss of production or sales in the event of the entry of diseases or pests, the costs of control or eradication in the

128 Appellate Body Report on *EC–Hormones*, para. 177.

129 Ibid.

territory of the importing Member and the relative cost-effectiveness of alternative approaches to limiting risks. When determining the appropriate level of sanitary or phytosanitary protection, WTO Members are to take into account the objective of minimizing negative trade effects.

However, the SPS Agreement also recognizes in Article 5.7 that there will be cases where scientific evidence is insufficient. In such cases, WTO Members may still adopt emergency or precautionary SPS measures on a provisional basis but are required to obtain additional information for a more objective assessment of the risk and to review the measures within a reasonable period of time.

Given that developing countries may encounter difficulty in the preparation and application of SPS measures, the Agreement provides for technical assistance and special and differential treatment for these countries. Where the risk allows the phasing in of SPS measures, the S&D treatment involves longer time-frames for compliance on products of export interest to them and, upon their request, time-limited exceptions from some obligations under the SPS Agreement.

Box 16: International standards, guidelines and recommendations

For food safety, the standards, guidelines and recommendations established by the Codex Alimentarius Commission relating to food additives, veterinary drug and pesticide residues, contaminants, methods of analysis and sampling, and codes and guidelines of hygienic practice;

for animal health and zoonoses, the standards, guidelines and recommendations developed under the auspices of the International Office of Epizootics;

for plant health, the international standards, guidelines and recommendations developed under the auspices of the Secretariat of the International Plant Protection Convention in cooperation with regional organizations operating within the framework of the International Plant Protection Convention; and

for matters not covered by the above organizations, appropriate standards, guidelines and recommendations promulgated by other relevant international organizations open for membership to all Members, as identified by the WTO Committee on SPS Measures.

Source: Annex A of the SPS Agreement.

(c) Relation to GATT 1994

GATT 1994 contains 38 articles and has a long history of jurisprudence behind it. So there is some degree of simplification involved when only three articles – Article III (National Treatment on Internal Taxation and Regulation), Article XI (General Elimination of Quantitative Restrictions) and Article XX (General Exceptions) are specifically discussed here. However, disputes involving the SPS and TBT Agreements are almost always accompanied by claims that the contested measures are inconsistent with some of these articles.

Article III is one of the most important provisions of GATT 1994 and obliges WTO Members not to apply internal taxes or regulations to imported products so as to afford protection to domestic production. Thus, a WTO Member must accord treatment that is no less favourable to imported products than to like domestically produced products. An important link with the obligations in the TBT and SPS Agreements come from the requirements that technical regulations and SPS measures should not be used as means of protection to domestic industry.

GATT Article XI requires a WTO Member not to impose prohibitions or restrictions other than duties, taxes or other charges on the imports of any other Member. The link with the TBT and SPS Agreements arises

when the application of the technical regulation or SPS measure results in prohibiting or restricting imports of products which do not meet the regulation or the SPS measure.

Finally, GATT Article XX allows a WTO Member to adopt or enforce measures intended to secure a range of policy objectives – including those necessary to protect human, animal or plant life or health or relating to the conservation of exhaustible natural resources – provided that the measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade. Some of the policy objectives cited in Article XX are identical to those cited in both the TBT and SPS Agreements, and Members could use Article XX to provide cover for their TBT actions. However, the SPS Agreement explicitly states that it provides a further elaboration of rules for the application of Article XX(b), and that SPS measures which comply with the SPS Agreement will be presumed to be in accordance with the obligations of governments under GATT provisions relating to sanitary or phytosanitary measures. It is therefore considered to be more specific than GATT Article XX(b) and is to take precedence with respect to SPS measures.

2. KEY CONCEPTS FROM AN ECONOMIC AND A LEGAL ANGLE

WTO Members have committed themselves to ensure that technical regulations and standards do not create unnecessary obstacles to international trade, while also recognizing that governments should not be prevented from using standards to pursue other legitimate policy objectives. This implies that, in the case of a dispute, a panel may be required to distinguish between a "legitimate" standard and an "illegitimate" standard, i.e. one that is inconsistent with WTO law. The legal texts on which any decision on such a matter will be based, have briefly been introduced above. This Subsection contains a more detailed look at some of the key concepts that may play a role in any legal analysis of a dispute involving standards. An attempt is made to compare these concepts with related concepts from the economic analysis presented in Section IIB.

(a) Striking a balance versus welfare maximization

The discussion in Section IIB has shown that a standard that aims at correcting a market failure – be it an information asymmetry in the case of product safety or a production externality related to environmental protection – may have negative effects on trade. Correcting for the market failure has a beneficial effect on the economy while a negative trade effect tends to lead to losses for the relevant economy. The implementation of the standard typically also involves costs and thus a loss for the economy. From an economist's point of view, the "optimal policy" instrument would strike the best possible balance between the positive effects owing to an enhanced functioning of the market on the one hand and the costs involved with the implementation of the standard and any possible negative trade effects on the other hand.[130]

The notion of "striking a balance" is also present in WTO jurisprudence. Although the GATT has no specific language authorizing a balancing test, "balancing" of a range of factors has, for example, explicitly been mentioned in cases, where recourse was taken to GATT Article XX(d) in interpreting the term "necessary". In *Korea-Various Measures on Beef* the Appellate Body states:

> "In sum, determination of whether a measure, which is not "indispensable", may nevertheless be "necessary" within the contemplation of Article XX(d), involves in every case a process of weighing and balancing a series of factors which prominently include the contribution made by the compliance measure to the enforcement of the law or regulation at issue, the importance of the common interests or values protected by that law or regulation, and the accompanying impact of the law or regulation on imports or exports."

[130] To be more precise the optimal policy instrument ensures that marginal welfare gains and marginal welfare losses caused by the measure are equalized.

The "balancing exercise" involves in both cases similar elements: the standard's positive effect on the policy aim and the possibly negative effect on trade. In the first case the aim of the exercise is to determine the policy that maximizes the welfare of the national economy (which is supposed to take into account the well-being of all individual agents in the economy). In the second case the aim is to determine whether a policy is consistent with WTO law.

It has been argued in the literature that the two exercises should produce similar outcomes, in the sense that policy instruments that are not optimal from a national welfare point of view, should be suspected to be inconsistent with WTO law.[131] This argument makes sense when the aim of multilateral trade law is assumed to be to prevent the adoption of policy measures that are used to artificially give domestic producers a competitive edge. Such protectionist measures would in general also be bad from a national welfare point of view, as domestic consumers end up being the ones who pay the price for not being able to buy from the cheaper foreign producers. Their losses tend to outweigh the possible gains for domestic producers.[132] As a consequence, policies designed in such a way would not be optimal policies from a national welfare point of view. Implicitly the multilateral trade system would in this case help to protect governments and ultimately consumers against possibly economically damaging effects of lobbying efforts by producers.

This argument, however, abstracts from the possibility that what is good for one country is not necessarily good for its trading partner nor for the multilateral trading system as a whole. In the presence of market failures such as the ones discussed in Section IIB, it is possible that policies which are optimal from a national point of view cause losses to trading partners. It is also possible that these losses outweigh the benefits going to the country introducing the policy. In other words, policies that are optimal from a national point of view may not be optimal from a global point of view.[133] The question therefore arises whether such policies should be considered to be consistent with the multilateral trading system or not.

The following Subsection contains a more detailed discussion of the economic approach to "balancing" in the context of national welfare maximization. This is followed by a discussion of "balancing" in WTO jurisprudence.

(i) "Welfare maximizing" policy instruments

If it was accepted that the balancing exercise involved in determining a nationally optimal policy instrument can serve as a reference point for the legal analysis of WTO disputes involving standards, the question arises how to apply such an approach. In other words, the question arises whether and to what extent economic reasoning related to optimal policy instruments can be used for legal analysis when it comes to disputes involving standards. Unfortunately, it is not always possible to measure the effects of all the different factors which play a role in determining the optimal policy instrument. It will, therefore, in general be difficult for economists to define the exact design of the best possible policy choice. Yet economists do have certain ideas as to when one instrument strikes a better balance than another.

Consider the case of product safety. A whole range of instruments exist to guarantee a certain level of product safety. Different instruments imply different levels of government intervention, different mechanisms of solving the underlying information problem and different effects on the functioning of markets.

In many cases suppliers are able to signal product quality, for instance, through the use of product guarantees. By offering a higher level of product guarantee suppliers signal a higher confidence in the quality, in this case safety, of their product and thus correct to some extent for the underlying information asymmetry. Government involvement with this type of instrument is very limited and restricted to setting the legal system

131 See Mattoo and Subramanian (1998). Strictly speaking the authors apply this argument to GATT Article III, but it would be straightforward to apply it also to Article XX. See Jansen and Keck (2005) for a discussion of differences and similarities in the interpretations given to GATT Articles III and XX in the relevant jurisprudence and literature.

132 Exceptions to this rule exist, as discussed in the strategic trade literature (e.g. Brander and Spencer, 1985) or in the case of big countries (optimal tariff argument).

133 See the approach taken in Battigalli and Maggi (2003) discussed previously.

in which supplier guarantees function. The correction of the marker failure is, thus, left to a very large extent in private hands and this instrument is unlikely to have large distortionary effects on the market in general and trade flows in particular. This instrument is unlikely to lead to desirable policy outcomes in the case of credence goods.

Private labelling schemes would allow consumers to differentiate among products of a higher or lower level of safety. Like in the case of guarantees, suppliers signal the quality of the product to consumers. In most cases the label will be linked to characteristics of the good, guaranteed by the suppliers. Whereas guarantee policies are typically given by individual suppliers, it is usually a group of suppliers that adheres to a private labelling scheme. Government intervention is needed in order to set the legal environment in which private labelling schemes function. Compared with guarantees, private labelling schemes may have a stronger effect on trade flows as they oblige foreign producers to choose in which scheme to belong, or not to belong to any scheme at all, whereas in the case of guarantees they are entirely free to choose an individual policy. But private labelling schemes may also have limited applicability to credence good cases.

Voluntary public labelling schemes function in a very similar way as private labelling schemes. The main difference is that the government decides which product characteristics deserve which type of label and that the government controls the use of the labelling policy. Public labelling may be less flexible than private labelling and therefore public labelling policies may adapt more slowly to changes in the market. But government intervention of this type makes sense in markets of goods with credence good characteristics. It has been shown in the previous Sections that in these markets private labelling schemes may not be able to function because producers have incentives to cheat.

The difference between mandatory public labelling schemes and voluntary ones is that in the first case the lower quality (in this case lower safety) goods are labelled, while in the second case goods in the higher range are labelled. Using one policy or the other should not have significant effects on market outcomes. In both cases the "safer" goods can be expected to obtain a price mark-up in the market. But the two policies may have different implications when it comes to which producers have to pay for the labelling costs.

A minimum standard has stronger effects on market outcomes as it basically bans certain types of products from the market. In order to be sold in the market, products must guarantee a certain minimum level of safety. Products not able to meet these criteria cannot be sold. Such a policy is likely to have stronger impacts on trade flows than the policies mentioned so far, but may be justified if the risks incurred by consumers using the lower quality products are significant. In such a situation the government may want to eliminate any possibility of the risky products being consumed by simply taking them off the market.

The above paragraphs show that different policy instruments can be more or less trade restrictive. Economists would accept the use of more trade restrictive instruments the more severe the market failure (e.g. credence goods versus experience goods) and the more likely and larger a possible negative impact of the use of low-safety products on consumers.[134] The welfare maximizing instrument would be the one that equalizes (brings into perfect "balance") the marginal cost of introducing the instrument, including any negative trade effects, to its marginal benefits, in terms of risk reduction.

(ii) Striking a balance in WTO jurisprudence

As mentioned before the GATT has no specific language authorizing a balancing test, but the "balancing" of a range of factors has, for example, been explicitly mentioned in cases where recourse was taken to GATT Article XX(d) in interpreting the term "necessary". The term "necessary" also appears in Article XX(b). Article XX(b) and (d) state that:

[134] This implies that risk assessments have to be carried out to determine the possible size of such a negative impact and the probability that negative impacts will occur. See Subsection (c) for a further discussion of risk assessment.

"Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

(b) necessary to protect human, animal or plant life or health;

(d) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement, including those relating to customs enforcement, the enforcement of monopolies operated under paragraph 4 of Article II and Article XVII, the protection of patents, trade marks and copyrights, and the prevention of deceptive practices;"

In *Korea–Various Measures on Beef* (see Box 17), the Appellate Body stated that "a treaty interpreter assessing a measure claimed to be necessary to secure compliance of a WTO-consistent law or regulation may, in appropriate cases, take into account the relative importance of the common interests or values that the law or regulation to be enforced is intended to protect". Indeed, the Appellate Body sets up, rather explicitly, a balancing test. It considers the degree to which the measure contributes to the realization of the end pursued: "the greater the contribution, the more easily a measure might be considered to be 'necessary'".[135]

Box 17: "Balancing" in *Korea–Various Measures on Beef* (WT/DS 161, 169)

Korea-Various Measures on Beef concerned several measures taken by Korea affecting beef imports and Korea's internal beef market. One of these measures led to the establishment of a dual retail system for the sale of beef. Under this system, most imported beef had to be sold either in specialized stores that sell only imported beef (although they may sell other meat products, both foreign and domestic), or in larger, department-style stores, where imported beef must be kept in separate sales areas. Stores selling imported beef had to display a "Specialized Imported Beef Store" sign to distinguish them from domestic beef sellers.

With regard to this dual retail system, the Panel found that this measure resulted in less favourable treatment for imports in violation of GATT Article III:4, and was not justified under GATT Article XX(d). Korea appealed this finding, but the Appellate Body upheld the Panel's conclusion that Korea's dual retail system was not "necessary" to secure compliance with the Korean Unfair Competition Act, and therefore was not justified under GATT Article XX(d).

The Korean Unfair Competition Act aimed, among other things, at the prevention of deceptive practices. In the present case, the alleged deceptive practices the dual retail system was supposed to prevent, were the misrepresentation of the origin of beef, i.e. selling imported beef as domestic beef, a practice which is commercially profitable because of the price differential.

The Panel argued that in order to demonstrate that the dual retail system was "necessary" to secure compliance with the Unfair Competition Act, Korea had to show that no alternative measure consistent with the WTO Agreement was reasonably available at present in order to deal with the misrepresentation in the retail beef market as to the origin of beef. The Panel considered that Korea had not discharged this burden for two inter-related reasons. First, Korea had not found it "necessary" to establish "dual retail systems" in order to prevent similar cases of misrepresentation of origin from occurring in other sectors of its domestic economy, for instance in the case of domestic dairy cattle beef. Second, Korea had not shown to the satisfaction of the Panel that measures, other than a dual retail system, compatible with the WTO Agreement, were not sufficient to deal with cases of misrepresentation of origin involving

[135] See also the above Appellate Body quote from *Korea-Various Measures on Beef*.

imported beef. In this context a number of alternative measures were discussed including labelling, record-keeping, prosecution and fines that would be effective in detecting and preventing deceptive practices as to the origin of beef.

The Appellate Body upheld the Panel's finding and noted that the "weighing and balancing process" outlined in the main text of this Section is comprehended in the Panel's approach.

In *EC–Asbestos* the Appellate Body referred to its decision in *Korea–Various Measures on Beef* when stating that:

> "In this case, the objective pursued by the measure is the preservation of human life and health through the elimination, or reduction, of the well-known, and life-threatening, health risks posed by asbestos fibres. The value pursued is both vital and important in the highest degree. The remaining question, then, is whether there is an alternative measure that would achieve the same end and that is less restrictive of trade than a prohibition."

Box 18 below discusses the asbestos case in relation to the necessity requirement.

Box 18: *EC–Asbestos* (WT/DS135) and the necessity requirement

Background

In December 1996, France adopted a Decree imposing a ban on asbestos in order to protect workers' and consumers' health. Asbestos is the name of a group of highly fibrous minerals with separable, long, and thin fibres. In 1998, Canada, the world's largest exporter and second largest producer of asbestos (after Russia), claimed the French Decree violated several GATT and TBT Articles and therefore complained to the DSB.

Necessity

Among the issues considered in this case, the question of necessity in relation to GATT Article XX proved crucial. In this regard, the Panel found that the Decree was justified under GATT Article XX(b) as a measure necessary "to protect human [...] life or health". In its October 2000 appeal, Canada challenged this conclusion on two grounds.

First, Canada disputed the evidence that asbestos represents a risk to public health. In this case, according to Canada, there was no need for a measure that protects life or health. The Appellate Body (AB), however, upheld the Panels' decision on the ground that majority scientific opinion agreed that asbestos represents a serious risk to human health.

Second and contrary to the Panel's finding, Canada claimed that a "controlled use" of asbestos constituted a reasonably available alternative. On this point, the AB also rejected Canada's argument on two grounds. Firstly, consistent with the analysis of Article XX(b) in the *Korea–Beef* case (see Box 17), the AB considered the pursued objective, namely preservation of human life or health, as "both vital and important in the highest degree" and consequently claimed that it should be easier for the EC to prove the necessity of the measure at issue, namely a ban on asbestos. Secondly, it argued that the effectiveness of "controlled use" in fulfilling the pursued objective had yet to be demonstrated. Therefore, the AB concluded that no reasonably available alternative existed and confirmed the Panel's decision that the EC had demonstrated the Decree was indeed necessary under GATT Article XX(b). The appeal was adopted in April 2001.

The need for balance is also reflected in Article 2.2 of the TBT Agreement, which states that "technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create". It has been argued that it is reasonable to expect that the interpretation of this article will in the future be parallel to that developed under the necessity test of Article XX.[136] Note that towards the end of the negotiations of the Uruguay Round, a footnote was included in draft Article 2.2 that read: "This provision is intended to ensure proportionality between regulations and the risks non-fulfilment of legitimate objectives would create." This footnote is not present anymore in the current text of the TBT Agreement.

In the SPS Agreement the idea of "balancing" seems to be reflected in Article 5.6: "[M]embers shall ensure that such measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility."[137] Besides, footnote 3 to this Article adds: "[F]or the purpose of paragraph 6 of Article 5, a measure is not more trade-restrictive than required unless there is another measure, reasonably available taking into account technical and economic feasibility, that achieves the appropriate level of sanitary or phytosanitary protection and is significantly less restrictive to trade."

In *Australia–Salmon*, the Appellate Body declared that Article 5.6 and, in particular, the related footnote "clearly provides a three-pronged test to establish a violation of Article 5.6". The complaining party must prove that an alternative measure exists which: " (1) is reasonably available taking into account technical and economic feasibility; (2) achieves the Member's appropriate level of sanitary or phytosanitary protection; and (3) is significantly less restrictive to trade than the SPS measure contested." The Appellate Body added that:

> "These three elements are cumulative in the sense that, to establish inconsistency with Article 5.6, all of them have to be met. If any of these elements is not fulfilled, the measure in dispute would be consistent with Article 5.6. Thus, if there is no alternative measure available, taking into account technical and economic feasibility, or if the alternative measure does not achieve the Member's appropriate level of sanitary or phytosanitary protection, or if it is not significantly less trade-restrictive, the measure in dispute would be consistent with Article 5.6."

Box 19: *Australia–Salmon* (WT/DS18) and SPS Article 5

In 1975, Australia introduced a quarantine measure requiring fresh, chilled, and frozen salmon products be heat-treated for certain prescribed durations and at certain temperatures before being imported into Australia. This measure was aimed at preventing the spread of fish diseases among Australia's salmon population. As a consequence, imports of salmon were limited to smoked and canned salmon.

In 1994, Canada urged Australia to conduct an Import Risk Assessment (IRA) of wild Pacific salmon imports. In justifying its request, Canada claimed among other things that evisceration of salmon (as opposed to heat-treating) is a widely accepted practice to effectively prevent the spread of diseases and that therefore no other measure should be required. Although two preliminary drafts of the IRA Report conducted by Australia concluded that imports of salmon should be permitted, the final version of the Report, released in 1996, recommended the ban be maintained.

In 1997, Canada filed a complaint before the DSB. In 1998, the Panel found that Australia's ban on fresh, chilled and frozen salmon from Canada was inconsistent with GATT Articles XI and XIII and with SPS Articles 2, 3 and 5. However, according to the hierarchy in WTO Agreements, it was enough for the Panel to prove inconsistency with the most specific and relevant article of the most specific and relevant Agreement, SPS Article 5 in the present case. The Panel concluded that the measure at issue was inconsistent with Articles 5.1 (and 2.2 by implication) in that it was not based on a risk assessment. The Panel also found the measure

136 Marceau and Trachtman (2002).

137 The concept is also reflected in SPS Article 2.2: "Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, ...".

violated Article 5.5 (and Article 2.3 by implication), for it adopts arbitrary or unjustifiable distinctions in levels of protection in different but comparable situations that result in discrimination or a disguised restriction on international trade. Finally, the Panel claimed the measure violated Article 5.6, since it was more trade restrictive than necessary. Australia appealed the Panel's ruling.

With regard to Article 5.1, the Appellate Body (AB) reversed the Panel's decision, stating that the Panel had examined the wrong measure (the "heat-treatment requirement") instead of the "import prohibition". Nonetheless, when considering the "correct" measure, the AB concluded that it also violated Article 5.1, for it was not based on a risk assessment, which required: (1) identification of potential diseases to be prevented with an SPS measure; (2) evaluation of the likelihood of entry, establishment or spread of these diseases and associated potential consequences; (3) evaluation of likelihood of entry, establishment or spread of the diseases under various available SPS measures. The AB noted that Australia failed to meet the second and third requirements. Consequently, the AB reached the same conclusion as the Panel.

The AB also found that the measure at issue failed to meet all the (cumulative) elements of Article 5.5: (1) the Member adopts different appropriate levels of sanitary protection in several "different situations"; (2) those levels of protection exhibit differences which are "arbitrary or unjustifiable"; (3) the measure embodying those differences results in "discrimination or a disguised restriction on international trade". The AB considered other fish product imports (herring, cod, haddock, etc.) comparable to salmon imports as to the risks they present. The AB noted that Australia treated those different situations much more leniently as compared to salmon imports, and these distinctions were "arbitrary and unjustifiable" and constituted a "disguised restriction to international trade". The AB therefore found, as the Panel did, that Australia acted inconsistently with Article 5.5 (and with Article 2.3 by implication).

Finally, the AB noted that three elements lead to the violation of Article 5.6: (1) there is a measure which is reasonably available taking into account technical and economic feasibility; (2) this measure achieves the Member's appropriate level of SPS protection; (3) this measure is significantly less restrictive to trade than the measure contested. While the Panel found that such alternatives existed, the AB noted that factual information contained in the 1996 Final report, and regarding the level of protection achieved by these available alternatives, was insufficient to conclude that these alternatives would permit the achievement of the same level of protection, namely a "zero-risk" level, as the prohibition of salmon imports did. As a result, the AB did not uphold the Panel's finding that Australia acted inconsistently with Article 5.6.

(b) Consistency

Notwithstanding the stated preference for international standards, WTO Members are free to set their own appropriate level of sanitary protection against the risks to human, animal or plant health or life.[138] SPS measures cannot, however, be maintained "without sufficient scientific evidence" and they should be based on risk assessment.[139] Article 5.5 of the SPS Agreement states that:

> "With the objective of achieving consistency in the application of the concept of appropriate level of sanitary or phytosanitary protection against risks to human life or health, or to animal and plant life or health, each Member shall avoid arbitrary or unjustifiable distinctions in the levels it considers to be appropriate in different situations, if such distinctions result in discrimination or a disguised restriction on international trade."

This obligation relates to the objective of achieving consistency in the level of risk a Member can accept in respect of "different situations". It aims at avoiding situations where a Member – without making explicit

[138] See para. 199 of the Appellate Body report in *Australia–Salmon* and also WTO (2000a).

[139] SPS Articles 2.2. and 5.1-5.3, as discussed in more detail in the next Subsection p. 144.

origin-based distinctions – imposes a very high level of protection for one situation or product, while at the same time being very lenient with respect to another situation or product even though both pose the same danger (or the former poses an even more serious danger than the latter).[140] Such "inconsistent" behaviour should, at the very least, raise the suspicion that the objective of the relevant SPS measure may be to discriminate against foreign suppliers rather than to protect domestic health or life.

In case law the following three elements have been identified in order for there to be a violation of SPS Article 5.5:

1. the Member concerned adopts different appropriate levels of sanitary protection in several "different situations";
2. those levels of protection exhibit differences which are "arbitrary or unjustifiable"; and
3. the measure embodying those differences results in "discrimination or a disguised restriction on international trade".[141]

The first two points are most directly related to the concept of "consistency". In particular the question arises as to how to interpret the concept of "different situations". In *EC-Hormones*, the Panel found that the situations to be compared are those "where the same substance or the same adverse health effect is involved".[142] In this case the regulation on the use of hormones administered to cattle for growth promotion was compared to the regulation of the same hormones occurring naturally in cattle and other products (such as milk and eggs) or administered for other purposes, as well as to the use of non-hormonal antimicrobial growth promoters in swine production. In *Australia-Salmon*, the Appellate Body found that situations which involve a risk of "the same or a similar disease" as well as situations with a risk of "the same or similar associated potential biological and economic consequences" have some common elements sufficient to render them comparable under SPS Article 5.5. As herring, live ornamental finfish and salmon all have at least one disease in common, the Panel compared the different "appropriate levels of protection" chosen by Australia across those products. That is, the import prohibition on salmon was compared to the few controls on the admission of herring in whole, frozen form used as bait and the allowed importation of live ornamental finfish.[143]

Box 20: *EC–Hormones* (WT/DS26, WT/DS48) and the consistency requirement

Background

The European Communities (EC) adopted a set of Council Directives that resulted in a prohibition of the importation and marketing of meat and meat products treated with any of six hormones used for growth purposes. Three of these hormones are naturally produced by animals (oestradiol-17ß, progesterone and testosterone), whereas the others are artificial (trenbolone, zeranol, and melengestrol acetate).

In 1996, in their complaint to the DSB, first the United States then Canada argued that this prohibition violated SPS Agreement Articles 2, 3 and 5 and TBT Agreement Article 2. The United States also claimed that the measures at issue violated GATT Articles I and III, while Canada argued that they violated GATT Articles III and XI. Since the matter challenged by the United States and Canada was the same, only one Panel was established. Two similar, but not identical, reports were released, both concluding that the EC measures were inconsistent with SPS Agreement Articles 3.1, 5.1 and 5.5. The EC appealed the decision in September 1997.

140 Pauwelijn (1999).

141 *Australia–Salmon*, Panel Report, para. 8.108; Appellate Body Report, para. 140.

142 Para. 8.176, US Panel Report and para. 8.179 Canada Panel Report. Note that this legal test was upheld by the Appellate Body but that its application by the Panel was reversed by the Appellate Body (see Box 20).

143 This rather broad interpretation of the notion "different situations" in *EC–Hormones* and *Australia–Salmon* stands in contrast to the more restrictive notions of "like" and "directly competitive and substitutable" products in the GATT (Pauwelijn, 1999 and Pienaar, 2003).

Consistency

The finding that the EC measures at issue violated Article 5.5 is relevant as an example of how compliance with the principle of consistency was assessed.

In its Report, the Appellate Body (AB) stated that three elements are necessary for a finding of violation of Article 5.5: (1) the Member adopts different appropriate levels of sanitary protection in several "different situations"; (2) those levels of protection exhibit differences which are "arbitrary or unjustifiable"; (3) the measure embodying those differences results in "discrimination or a disguised restriction on international trade".

In considering the first element, the AB noted that situations are comparable to each other if they involve the same substance or the same adverse health effect. The AB relied on the Panel which had identified five situations that were comparable but exhibit different levels of protection: (1) the level of protection in respect of natural hormones when used for growth promotion; (2) the level of protection in respect of natural hormones occurring endogenously in meat and other foods; (3) the level of protection in respect of natural hormones when used for therapeutic or zootechnical purposes; (4) the level of protection in respect of synthetic hormones (zeranol and trenbolone) when used for growth promotion; and (5) the level of protection in respect of anti-microbial agents (carbadox and olaquindox).

The AB then examined the second element, whether the levels of protection exhibited arbitrary and unjustifiable differences in the treatment of these different situations. There was, according to the AB, a fundamental distinction between added hormones used for growth promotion (situations (1) and (4)) and naturally-produced hormones (situation (2)), thus justifying different levels of protection in each situation for it is impossible in the latter case to limit residues. In this regard, the AB disagreed with the Panel who described as "arbitrary or unjustifiable" the differences of treatment between those three situations. However, the AB found that the levels of protection in situations (1) and (4) did exhibit arbitrary and unjustifiable differences with those in effect in situation (5). On this point, the AB upheld the Panel's finding.

Having found that the level of protection exhibited "arbitrary or unjustifiable" differences between at least two comparable situations, it remained for the AB to examine whether the third requirement was met, that is, the measures at issue resulted in discrimination or a disguised restriction on international trade. Here, the AB challenged the Panel's finding that "the import ban on treated meat and the Community-wide prohibition of the use of the hormones here in dispute for growth promotion purposes in the beef sector were not really designed to protect its population from the risk of cancer, but rather to keep out US and Canadian hormone-treated beef and thereby to protect the domestic beef producers in the European Communities" (AB Report, para. XII.245). Therefore, the AB concluded that the measures failed to meet the third requirement.

Overall, given this last point, the AB reversed the Panel's conclusion that the measures at issue were inconsistent under Article 5.5.

With a view to clarifying the practical implications of the requirements of Article 5.5, WTO Members adopted on 18 July 2000 "Guidelines to Further the Practical Implementation of Article 5.5".[144] The Guidelines have to some extent built on SPS jurisprudence and the practice of Members and have added variables to be used for the operationalization of Article 5.5.[145]

144 WTO (2000a).

145 See Marceau and Trachtman (2002).

Neither the GATT nor the TBT Agreement contains explicit consistency requirements, but it has been argued that the GATT Article XX necessity test contains a "soft" consistency requirement.[146] In particular, the Appellate Body in *Korea-Various Measures on Beef* stated the following:

> "The application by a Member of WTO-compatible enforcement measures to the same kind of illegal behaviour – the passing off of one product for another – for like or a least similar products, provides a suggestive indication that an alternative measure which could "reasonably be expected" to be employed may well be available. The application of such measures for the control of the same illegal behaviour for like, or at least similar, products raises doubts with respect to the objective necessity of a different, much stricter, and WTO-inconsistent enforcement measure."[147]

The use of the term "similar" indeed indicates that in this argument "comparability" may be applicable to a broader category of goods than in the context of determining "likeness" or "directly competitive or substitutable" goods. The Appellate Body in *Korea–Beef* refers to the use of different enforcement measures in comparable situations, whereas in the case of SPS Article 5.5 the issue is one of justifying different "appropriate levels of protection" in "comparable" situations.

(c) Scientific evidence and consumer preferences

When it comes to disputes concerning standards there is, in general, no disagreement on the legitimacy of the policy objective the defendant claims to pursue. The protection of human or animal health, for instance, or the protection of the environment are broadly accepted policy objectives. Disagreement may arise, within or among societies, about the desirable degree of protection to be achieved. Disagreement may also arise about the existence of a link between a tradable good (e.g. hormone-treated beef) and the pursued policy objective (e.g. food safety) and about the level of that link. Last but not least, disagreement may arise about the effectiveness of a given policy instrument, like a standard, to achieve a certain policy objective.

The Preambles of the SPS Agreement and the TBT Agreement indicate that WTO Members are free to determine what they consider their "appropriate level of protection".[148] This has been confirmed in the relevant WTO jurisprudence, also with respect to the GATT Agreement.[149] Disputes concerning standards and their effect on trade flows may, however, ensue from disagreement on the other two issues: the link between a traded item and the claimed policy objective, and the appropriateness of using a certain type of standard in the relevant situation.[150]

Scientific evidence can play an important role in shedding some light on these two issues. For instance, in many countries a whole range of products, like medications or chemicals, have to go through established testing procedures before they are even allowed to circulate in the internal market. Scientific evidence also plays a role in WTO Agreements. This is to some extent the case in the TBT Agreement, but above all in the SPS Agreement.[151] This Section will therefore have a stronger focus on the SPS Agreement. Some major differences between the TBT Agreement and the SPS Agreement, in particular with respect to the relevance of scientific evidence, are discussed in Box 21.

146 Marceau and Trachtman (2002).

147 Appellate Body Report *Korea–Various Measures on Beef*, WT/DS161/AB/R and WT/DS169/AB/R para. 172.

148 This is reflected in imposing the burden of proof on the country challenging a standard to prove that it is WTO inconsistent even if it is admitted by both parties that the challenged national standard is set at a level higher than an existing international standard.

149 See Marceau and Trachtman (2002).

150 In theory, a fourth issue could arise even if there is agreement between Members on the three aspects mentioned so far. This is the issue of whether the measure chosen by one Member to achieve its appropriate level of protection should be the measure that maximizes national welfare, or the one that maximizes global welfare (see Subsection (a)).

151 This difference is mainly due to the fact that the SPS Agreement is narrower in its coverage than TBT, focusing on food safety and the prevention of the entry and spread of pests and diseases.

Box 21: Distinction between TBT and SPS standards

The TBT Agreement has a considerably wider coverage than the SPS Agreement. It also contains much broader, less closely-defined objectives for the introduction of technical regulations, standards or conformity assessment procedures than the SPS Agreement.

The SPS Agreement covers all measures whose purpose is to protect human or animal health from food-borne risks; to protect human health from animal- or plant-carried diseases; to protect animals and plants from pests or diseases or to prevent or limit other damage to a country from the entry, establishment or spread of pests. The TBT Agreement covers all technical regulations, voluntary standards and conformity assessment procedures to ensure that these are met, except when these are sanitary or phytosanitary measures as defined by the SPS Agreement. Thus it is the type of measure which determines coverage by the TBT Agreement, but the purpose of the measure which is relevant in determining whether a measure is subject to the SPS Agreement. Most labelling requirements, nutrition claims and concerns, and quality and packaging regulations are generally not considered to be sanitary or phytosanitary measures and hence are normally subject to the TBT Agreement.

The two Agreements have some common elements, such as the basic obligation of non-discrimination and similar requirements for the advance notification of proposed measures and the creation of information offices ("Enquiry Points"). Nevertheless, many of the substantive rules are different. For example, both Agreements encourage the use of international standards. However, under the SPS Agreement scientific arguments resulting from an assessment of potential health risks are required to justify the choice of standards which are more stringent than those advocated by international standard-setting bodies. In addition, governments may impose SPS measures only to the extent necessary to protect human, animal or plant health, on the basis of scientific information. Under the TBT Agreement, WTO Members may derogate from international standards when they deem them to be either inappropriate or ineffective in the fulfilment of a legitimate objective, for instance, due to fundamental climatic or geographic factors, or fundamental technological problems. Scientific evidence may be relevant, depending of the specific legitimate objective pursued, and the specific reason for which a Member has derogated from an international standard. The TBT Agreement also calls for measures to not be more trade restrictive than necessary.

(i) Consumer preferences, scientific evidence and optimal policy instruments

While several WTO Agreements provide countries with the explicit right to implement potentially trade-distorting policies to protect the health of their citizens and environment within particular contexts, consensus on what constitutes the optimal type, timing, and extent of government intervention remains elusive. The concept of market failure developed in Section IIB provides guidance on how to address these questions.

A number of market failures exist relating to the provision of health or environmental protection. As described in a previous Section, these market failures can be related to imperfect information (e.g. credence goods) or externalities (e.g. pollution). In these situations, government intervention may be justified in order to compensate for the sub-optimal national provision of public or environmental health. In the case of medications, for instance, patients cannot know the expected positive health effects and the potential negative health effects without the advice of doctors and/or the information provided on the package insert. The market for medications suffers from information asymmetries and mechanisms of the type discussed in Section IIB are necessary to allow such a market to function efficiently. The provision of safe food also may not occur efficiently without government intervention. For instance, the improper handling of food can cause microbial contamination, such as salmonella. Those handling the food may not be aware and not take into account the full extent of the damage which problems like contamination can cause to other individuals. At the same time, consumers do not have full information about the health characteristics of these products.

In order to determine the appropriate type and level of intervention, governments have a series of decisions to make. As a first step, to determine the policy goals, governments must weigh the preferences of diverse groups with different opinions as to the optimal policy outcome. Typically in relation to health and environmental policies, this outcome relates to a desired level of risk either to human or environmental health. In the theoretical economic models, these types of value judgements should reflect consumer attitudes towards risk and towards the link between cause and effect. In other words, in economic analysis consumer preferences determine to a large extent whether and with which policy tool a government should intervene.[152] Producer interests will also play a role in such a decision. Compared to consumers, producers may, for instance, prefer more flexible policies which would allow them to adopt flexible compliance strategies. In the context of an economic analysis of these policies, one would also care about the associated costs of implementing a certain policy and about the policy's effects on the policy objective. In developing (public/private) labelling schemes to provide consumer information, for example related to credence goods, it might not be optimal, or feasible, to provide all information which consumers may be interested in.

Scientific evidence is likely to be one of the determinants of consumer opinions. This raises important questions about the availability of scientific evidence to consumers, the quality of that evidence and its timeliness.[153] Much more is known today, for instance, about the health effects of smoking than at the time cigarettes were launched to the broad public. The recent removal of certain arthritis drugs from the market also illustrates the issue of the appropriate timing and design of scientific research.

Other actors and phenomena, including media coverage, influence consumer opinion. As a result, preferences related to risks may not always reflect the true risk of a situation, but rather a consumer's pre-existing bias or a misinterpretation of facts. Consumers may, for instance, have disproportionate aversion to risks and prefer to avoid all risk, even when the cost of avoiding these risks is high. In some situations, consumers may believe that a direct causal link exists between a consumption activity and a particular outcome, regardless of whether they have scientific evidence establishing a link. In this situation, the government must weigh the current benefits of introducing a certain policy measure against its costs and its potential future benefits in terms of risk reduction. These future benefits will be lower than consumers expect today if they have misinterpreted the actual risk involved. In other words, policies based on erroneous consumer opinions concerning risk may end up being very costly for a society.

Evaluating the trade-off between costs and benefits of a policy is often also made difficult by the timing of a policy's impact. In the case of environmental goods, for example, the impacts of particular policies may only be evident in the long-term. In addition, predicting ecological responses to policy interventions is complicated by a lack of certainty. Science therefore also plays an important role in evaluating the possible impacts of government interventions on pursued policy objectives.

(ii) The role of science in WTO agreements and jurisprudence

The SPS Agreement acknowledges countries' right to implement measures to protect the health of the population, plants, animals and the environment. According to the TBT Agreement, governments have the right to implement policies which are not "more trade-restrictive than necessary to fulfil a legitimate objective". Legitimate objectives include "national security, prevention of deceptive practices, protection of human health or safety, animal or plant life or health, or the environment". Scientific evidence plays an important role in the judgement of whether an SPS measure is justified or not, while in the TBT Agreement the requirement for scientific justification is less rigorously defined. At the same time, in both Agreements, this right is balanced by obligations in order to prevent the protectionist use of these measures. The texts of agreements, various dispute panel reports, ministerial conference decisions and committee guidelines have provided guidance to countries about the role of science in justifying measures which may be potentially trade-distorting.

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152 In more technical terms, consumer attitudes towards risk and the link between "cause and effect" are typically implicit in the utility function. The utility function is in turn one of the main determinants of the welfare maximizing policy (see IIB.2(a)).

153 See for instance the discussion in Martin (2004).

WTO Members, according to the SPS Agreement, have the right to determine their appropriate level of protection (ALOP) and are obliged to ensure that they avoid arbitrary and unjustifiable distinctions in the levels considered to be appropriate in different situations, if these differences result in disguised restrictions to trade. Dispute jurisprudence has affirmed that "the level of protection deemed appropriate by the Member establishing a sanitary ... measure, is a prerogative of the Member concerned".[154] Thus the determination of ALOP is considered separately from the choice and application of measures to achieve this ALOP.

As mentioned above, the TBT Agreement preamble recognizes the right of each WTO Member to determine the level of protection which it considers appropriate subject to the requirement that measures are not applied "in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on international trade". The TBT Agreement accords to governments a high degree of flexibility in the preparation, adoption and application of their national technical regulations, but tempers this flexibility by the requirement in Article 2.2 that technical regulations "are not prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to trade". This Article also specifies that "...technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create". And further "In assessing such risks, relevant elements of consideration are, *inter alia*: available scientific and technical information, related processing technology or intended end-uses of products."

Regarding sanitary and phytosanitary measures, countries have a range of options in terms of achieving their ALOP. On the permissive end of the spectrum, countries may choose limited interventions and therefore allow all food and agricultural products to be traded without restrictions based on food safety or environmental risks. Alternatively, WTO Members have the right to restrict trade in these products under certain conditions. The SPS Agreement (Article 2.2) provides that sanitary and phytosanitary measures must be based on scientific principles and may not be maintained without sufficient scientific evidence, except in the case of insufficient scientific evidence (as permitted under Article 5.7 discussed below). However Members are encouraged to choose measures that conform to international standards or guidelines. In these circumstances, a rebuttable presumption arises that the SPS measure selected meets all SPS disciplines, including the requirements of "sufficient scientific evidence" and "risk assessment".[155]

While consumers may prefer very strict food safety standards, under the SPS Agreement governments are obliged to justify the standards they set either by basing them on international standards as discussed above, or by conducting their own risk assessment. In relation to the SPS Agreement, the potential for consumer preferences to drive national food safety standards to a zero risk tolerance is tempered by the obligations of the government only to maintain measures that are based on scientific principles. Therefore, while governments have the right to set very strict risk thresholds for particular products, these thresholds must relate to a demonstrable risk.

SPS Article 2.2 states that SPS measures must not be maintained "without sufficient scientific evidence." In the *Japan–Varietals* case the Appellate Body stated:

> "The ordinary meaning of 'sufficient' is 'of a quantity, extent, or scope adequate to a certain purpose or object'. From this, we can conclude that 'sufficiency' is a relational concept. 'Sufficiency' requires the existence of a sufficient or adequate relationship between two elements, in casu, between the SPS measure and the scientific evidence ... the obligation that an SPS measure not be maintained without sufficient scientific evidence requires that there be a rational or objective relationship between the SPS measure and the scientific evidence."[156]

154 *Australia–Salmon* Appellate Body, para. 199.

155 See Pauwelijn (1999). In a sense international standards represent the "globally" preferred level of risk. However, developing countries may find it difficult to participate effectively in international standard-setting bodies due to financial and human resource constraints. Thus, the negotiated standards may not represent the global consensus on risk preferences, but rather the preference of the wealthier countries. Since wealth is linked to higher demand for such attributes as environmental quality, lack of representation of developing countries in international standard setting bodies could lead to the adoption of higher standards with negative trade impacts for developing countries (Drahos 2004). See also the discussion in Section IIC.

156 *Japan–Varietals*, Appellate Body Report, paras. 73 and 84.

In the case of this dispute, the Panel and Appellate Body concluded that Japan's requirement that import approval must be sought separately for each variety of fruit was not maintained with sufficient scientific evidence. Dispute jurisprudence has confirmed that the determination of whether a measure is justified scientifically should be conducted on a case-by-case basis.

The SPS Agreement (Article 5) discusses the types of evidence which Members should take into account when conducting a risk assessment. These factors include scientific evidence, particularly related to prevalence of specific diseases or pests, existence of pest or disease-free areas, and relevant ecological and environmental conditions. This information provides the basis for determining the risks associated with a particular product if it were introduced without policy interventions to mitigate the risks. In addition, this Article indicates that Members should consider policy and production-related evidence including the existence of quarantine policies or other treatment, relevant processes and production methods, relevant inspection, sampling and testing.

The text of the SPS Agreement (Annex A paragraph 4) distinguishes between risk assessments required for food-borne risks and those for disease or pest risks. In *Australia–Salmon* the Appellate Body stated:

> "While [risk assessment for food-borne risks] requires only the evaluation of the potential for adverse effects on human or animal health, the [risk assessment for disease or pest risks] demands an evaluation of the likelihood of entry, establishment or spread of disease, and of the associated potential biological and economic consequences."[157]

The Salmon dispute clarified the criteria for the risk assessment related to pest or disease risks. In this dispute the Appellate Body ruled that a risk assessment within the context of the SPS Agreement must do the following:

1. identify the diseases whose entry, establishment or spread a Member wants to prevent within its territory, as well as the potential biological and economic consequences associated with the entry, establishment or spread of these diseases;
2. evaluate the likelihood of entry, establishment or spread of these diseases, as well as the associated potential biological and economic consequences; and
3. evaluate the likelihood of entry, establishment or spread of these diseases according to the SPS measures which might be applied.[158]

In addition, governments must demonstrate a rational relationship between scientific evidence and the measure in question, and risk assessment must "connect the possibility of adverse effects with an antecedent or cause".

EC–Hormones was the first dispute to consider arguments related to the SPS Agreement. In this dispute the Panel and the Appellate Body both ruled on Article 5.1 as it related to the arguments of the case. Both bodies found that a rational relationship did not exist between the EC's measures and the scientific evidence submitted on five of the hormones. No risk assessment was submitted for the sixth hormone. Six invited experts were consulted, including experts in animal health and foods safety (see Box 20).

In *Japan–Apples*, the United States argued that Japan had maintained measures against US apple exports "without sufficient scientific justification". The Panel in this case heard testimony from a variety of plant health experts and concluded that the scientific evidence "suggests a negligible risk of possible transmission of fire blight through apple fruit". The Panel also discussed the view apples could act as a pathway for the entry, establishment or spread of fire blight within Japan and concluded that scientific evidence did not support this view. The Panel then drew conclusions based upon this scientific evidence and the elements of the Japanese import inhibiting measure that were considered "disproportionate" to the risk (see Box 22).[159]

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157 *Australia–Salmon,* Appellate Body Report, footnote 69.

158 *Australia–Salmon*, Appellate Body Report, para. 121.

159 The SPS Agreement does not call for a comparison of "like products" or distinguishing "product versus process" characteristics. Rather, the focus of the analysis for determining whether a product has been discriminated against is the justification for the discrimination (Marceau and Trachtman, 2002).

Box 22: "Scientific evidence" in *Japan–Apples* (WT/DS245)

Background

In an attempt to prevent the spread of a plant disease caused by the fire blight bacterium to its domestic production of apple fruits, Japan imposed restrictions on imports of apples from the United States. This bacterium affects a number of host plants, including apple trees but not humans. Under Japanese restrictions, imports of apples from the United States remained possible provided that certain requirements regarding production, handling and exporting were met.

According to the United States, there had never been any scientific evidence that harvested apple fruits transmit fire blight. In its submission to the DSB in 2002, the United States claimed that Japan's import-restrictive measure was inconsistent with a number of Articles of the GATT, the SPS Agreement and the Agriculture Agreement. For reasons of judicial economy, the Panel decided to examine only the measure in question with respect to SPS Agreement Articles 2.2 (necessity of the measure and need for scientific evidence), 5.1 (risk assessment), 5.2 (risk assessment based on scientific evidence), 5.7 (provisions for insufficient scientific evidence), as well as Article 7 and Annex B (transparency of SPS regulations).

Scientific evidence

Before the Panel, the United States contended that the measure was contrary to Article 2.2, which states that any SPS measure is not to be maintained without sufficient scientific evidence, except as provided in Article 5.7. The Panel concluded that, in the present case, the scientific evidence "suggests a negligible risk of possible transmission of fire blight through apple fruit," and that "scientific evidence does not support the view that apples are likely to serve as a pathway for the entry, the establishment or spread of fire blight within Japan." A measure is considered maintained without sufficient scientific if there is no rational or objective relationship between the measure and the relevant scientific evidence. Here, the Panel concluded that the measure was "clearly disproportionate to the ['negligible'] risk identified on the basis of scientific evidence" (Panel Report, para. VIII.198). Following an appeal by Japan, the Appellate Body upheld the Panel's finding that the measure was contrary to Article 2.2.

With respect to Article 5.7, Japan argued before the panel: "should the Panel find the scientific evidence insufficient to support Japan's measure under Article 2.2, the measure could be considered to be a provisional measure in the context of Article 5.7 […]". Article 5.7 provides that "[i]n cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information […]". The Panel objected that an important amount of relevant, high quality scientific evidence existed on the risk of transmission of fire blight through apple fruit. Therefore, the Panel concluded that this was not a situation in which the scientific evidence was insufficient hence Article 5.7 did not apply.

In all the disputes under the SPS Agreement, experts have been invited to provide scientific advice to the panel. These scientific experts do not have to represent mainstream science. The selection process for experts entails discussion among the panel and the parties to the dispute. Typically the panel seeks recommendations from the international standard-setting bodies as well as from the parties. Parties can object to particular scientific experts on legitimate grounds, but the final choice of experts rests with the panel, which can override objections of the parties. Of course, science does not always provide a single interpretation of a particular set of facts, and scientific experts, in this case, may provide conflicting information to the panel.

Article 5.7 allows for the use of provisional measures where scientific evidence is insufficient. Members should in such cases act on the basis of available information and seek to obtain the additional information needed for a more objective assessment of risk. The dispute Panel on *Japan–Apples* provided further interpretation of

this Article, clarifying that insufficient scientific evidence should not be interpreted as scientific uncertainty. In this case, Japan's contention that its measure was provisional was found to be unsubstantiated, because many studies related to fire blight existed.

One concern often raised in the context of measures relating to health of citizens or the environment which may restrict trade is that given scientific uncertainty relating to particular events or risks, and given the potential for extremely negative consequences, countries would like to maintain the right to implement measures in order to avoid these consequences.[160] While the precautionary principle was not included explicitly in the SPS Agreement, the Panel and Appellate Body in *EC–Hormones* found that the precautionary principle "found reflection in" the SPS Agreement, particularly in Article 5.7 and that invoking the "precautionary principle" did not override a country's obligations under Article 5.1.

Both the dispute reports from *Japan–Varietals*[161] and *Japan–Apples* provide further clarification regarding the appropriate implementation of provisional measures in the context of the SPS Agreement. First, Members must seek to obtain information even after implementing a measure based upon Article 5.7. Hence, the adoption of a provisional measure does not alleviate the obligation to seek the scientific justification of a measure. In addition, the Appellate Body in the *Japan–Apples* dispute ruled that uncertainty is not the same thing as insufficient scientific evidence. In the case of *Japan–Apples*, many well-conducted scientific studies existed. It was still possible that in cases where a large number of poorly conducted scientific studies existed, Article 5.7 would apply.

(d) Product and process standards

In Section IIB it was noted that the distinction between product and process standards has become important in the context of the multilateral trading system, particularly those process standards involving unincorporated processes and production methods (PPMs). Several environmental disputes bearing on the use of PPM-type standards have been taken up in the GATT and WTO. In what follows, an economic analysis of product versus process standards is undertaken. Then there is a discussion of how PPM related cases were resolved in the GATT and WTO and how different WTO Agreements apply to PPMs.

(i) Economic analysis

Apart from the trade literature, there is little controversy about standards that are applied to a product and standards applied to the process by which a product is made. For example, in dealing with an environmental externality the usual question posed is whether a tax or a non-price instrument, such as a standard, best restores economic efficiency, and not whether a process or a product standard is better. As discussed in Section IIB, environmental standards are widely used. And it turns out that many of them are process standards. For environmental reasons, regulators frequently prescribe standards on firms' waste water discharge, smoke emissions or energy use. In the mining industry, for example, a host of standards exists to regulate the types of chemicals used to separate precious minerals from ore and the treatment of mining discharge. The reason for these process standards is that environmental costs occur during the process of production and not during the consumption of the final product. In cases where the externality is generated by the consumption of the final product, a product standard can be used. For example, the use of petrol in motor vehicles leads to the release of large amounts of lead in the air. Because this poses major health risks, most countries have required the use of unleaded gasoline. So both product and process standards can be economically justified, depending on the source of the externality. The reasons why the distinction between product and process standards has given rise to international trade disputes are unrelated to the economic justification for standards. They are instead related to the difficulties to control and enforce standards of processes and production methods that are applied on production sites abroad.

[160] See Harremoës et al. (2002) and Martin (2004), on the one hand, and Marchant and Mossman (2004) on the other for differing views on the role of the "precautionary principle" in this context.

[161] WT/DS76.

Take the case, discussed in Section IIB.2, of an environmental resource (timber) that is used as an input to make a final product (furniture), which is traded internationally. Initially, two countries trade with one another, with the exporter selling furniture made from timber cut from its forests. But a subset of the citizens in the importing country care about the way timber is harvested in the exporting country. Unsustainable logging in the exporting country constitutes a negative externality for them, although they would be willing to support harvesting of timber in concessions where forestry management was "environmentally friendly". However, because of differences in resource endowments and the level of development, there is nowhere near the same level of concern on the part of the citizens in the exporting country about how its forests are harvested. For them, the use of their trees to make furniture does not embody a negative externality – on the contrary, the industry simply represents a source of income.

Assume that each national authority is intent only on maximizing national welfare. Then the national authority in the exporting country would adopt a *laisser-faire* policy towards its timber industry. However, because of the welfare impact that the cutting of trees causes a subset of its citizens, the authority of the importing country would want to take measures to curtail the activity. One possible measure would be a process-related standard which required all furniture, including imported furniture, to be produced from sustainably-logged forests. This is an example of an unincorporated PPM, since the fact that the timber used in making the furniture has been logged in a sustainable manner is not embodied or discernable through any kind of test on the furniture. The imposition of the mandatory standard in the importing country would be the source of a potential trade dispute. The importing country has addressed what it regards as a negative externality in its jurisdiction. The exporting country considers the measure unacceptable, reflecting a protectionist intent and/or an extra-territorial imposition.

Although this issue has been cast as an environmental externality, there is no prima facie reason why markets might not work sufficiently well to manage such problems. The Coase theorem states that in the absence of transactions costs, bargaining among the parties would lead to an economically efficient outcome, i.e. the costs associated with the externality will be minimized. If consumer preference for furniture made from sustainably-logged forests is sufficiently strong in the importing country, there is no reason why furniture makers in the exporting country will not respond to that demand. If they do so, the switch from the previous process of unsustainable forestry management to the new process constitutes a voluntary reaction in pursuit of higher profits. So the adoption of a different process of furniture manufacturing in the exporting country would have been effected by market forces and not by a standard imposed by a foreign government. It is very likely that if this sequence of events had occurred in our example, much less difficulty would have been created by the imposition of a process standard by the importing country.

A significant reason why the market may not react in the circumstances described above arises from the existence of information asymmetry. Consumers are not able to tell whether a piece of furniture is made from timber grown in sustainably-logged forests or not. And this information asymmetry is sufficiently acute to prevent an international market for furniture made from sustainably-logged forests to arise. But again, there are ways that the market mechanism itself can provide an answer in the form of private labelling schemes.[162]

A private labelling scheme is less trade restrictive than a mandatory standard, because the former allows for the co-existence of different types of timber in the market. The same can be said for a public labelling scheme. An important difference between both types of public policies and a private scheme consists in enforcement. Enforcement can in most cases not be left to producers as they have incentives to cheat and to declare that a PPM-type standard is met even if this is not the case. In the case of a public scheme enforcement will therefore to some extent be in the hands of the importing country's government, which may raise concerns with respect to the sovereignty of the exporting country. But also in the case of private labelling schemes, enforcement by independent bodies is required. Those bodies need to have access to the production site in the exporting country and need to be trustworthy from the point of view of the importing country's authorities.

[162] See footnote 27 on the shortcomings of labelling schemes related to PPMs.

(ii) WTO jurisprudence

How has WTO jurisprudence dealt with the issue of PPMs? In the case of *US-Shrimp* (see Box 23), the dispute centred on a US measure (Section 609 of Public Law 101-162) which prohibited the importation of shrimp or shrimp products when harvested with commercial fishing technology that adversely affected endangered species of sea turtles. To avoid the import ban, it was necessary to certify that a country's shrimp fishing fleet used technology that minimized the risk of catching sea turtles. The measure is an example of a PPM because it is a standard that is applied to the way the shrimp is caught rather than to the shrimp itself. It is also an example of an unincorporated PPM since it is not discernible from inspecting or testing the shrimp whether it has been caught with an environmentally-friendly fishing technology or not.

The US measure was examined under Article XX (General Exceptions) of GATT 1994. Applied to environmental issues, Article XX says that so long as a measure is not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail or a disguised restriction on trade, GATT 1994 does not prevent Members from adopting or enforcing "measures relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption".

In the first dispute, which was brought by India, Malaysia, Pakistan and Thailand, the Appellate Body decided that although the US measure served an environmental objective that was recognized as legitimate under Article XX of GATT 1994, it had been applied in a manner which constituted arbitrary and unjustifiable discrimination between Members of the WTO. The United States had failed to engage these Members in serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements for the protection and conservation of sea turtles. The United States negotiated seriously on certification with some Members, but not with others that exported shrimp to the United States. Thus, the US measure was found inconsistent with the chapeau of Article XX, which requires that measures not be applied in a manner constituting arbitrary and unjustifiable discrimination between Members. The Panel and Appellate Body reports were adopted by the WTO's Dispute Settlement Body (DSB).

As a result of this, the US revised the guidelines implementing the relevant provisions of Section 609 of Public Law 101-162. This set forth new criteria for certification of countries to export shrimp to the US. But negotiations with one of the countries in the dispute (Malaysia) on an agreement on certification did not succeed. So Malaysia brought a new case to the WTO claiming that the US had failed to comply with the recommendations of the DSB. However, the Panel which looked into this second case decided that the revised guidelines were applied in a manner that did not constitute a means of "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" and was within the scope of measures permitted under Article XX. It found that while the United States had an obligation to negotiate an international agreement regarding the protection of sea turtles, there was no obligation to conclude such an agreement. The Appellate Body subsequently upheld the Panel's ruling that the revised guidelines were justified under Article XX.

The treatment of PPMS by WTO jurisprudence seems clear. In the first Panel report on *US-Shrimp*, the Panel had found that Article XX could not justify a country imposing "measures conditioning access to its market for a given product upon the adoption by the exporting Members of certain policies". But on appeal, the Appellate Body gave a different view regarding this feature of the measure:

> Conditioning access to a Member's domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the exceptions (a) to (j) of Article XX.[163]

Thus, one possible interpretation of this view is that PPM-type standards are allowed (see Marceau and Trachtman, 2002) so long, of course, as they satisfy Article XX (a) to (j) and they are not applied in a manner that results in arbitrary or unjustifiable discrimination between countries where the same conditions prevail.

[163] Appellate Body Report on *US–Shrimp*, para. 121.

Box 23: *US–Import Prohibition of Certain Shrimp and Shrimp Products* (WT/DS58)

Under the Endangered Species Act of 1973, the United States issued regulations requiring all US shrimp trawl vessels to use approved Turtle Excluder Devices (TEDs) or tow-time restrictions in specified areas where there was a significant mortality of sea turtles in shrimp harvesting.

With respect to trawlers from other nations, Section 609 of Public Law 101-162 called for negotiations to develop agreements with them to protect and conserve sea turtles. Section 609 imposed an import ban on shrimp harvested with commercial fishing technology which may adversely affect sea turtles. But the ban did not apply to harvesting nations that obtained certification from the US State Department that they had (a) a fishing environment which did not pose a threat of the incidental taking of sea turtles in the course of shrimp harvesting or (b) a regulatory programme governing the incidental taking of sea turtles in the course of shrimp trawling that was comparable to the US programme, and where the average rate of incidental taking of sea turtles by their vessels was comparable to that of US vessels.

The first dispute arose from a complaint filed by India, Malaysia, Pakistan and Thailand against the import ban imposed by the United States under Section 609 on the importation of certain shrimp and shrimp products from these countries.

The panel decided that the import ban on shrimp and shrimp products was not consistent with Article XI:1 of GATT 1994, and could not be justified under Article XX of GATT 1994. The United States appealed the decision that the measure could not be justified under Article XX. The relevant provisions of Article XX are: Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

> (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;

The Appellate Body concluded that the measure qualified for provisional justification under Article XX(g). Sea turtles were an exhaustible natural resource, the US measure was related to the conservation of the exhaustible natural resource, and the measure was made effective in conjunction with restrictions on domestic production or consumption.

But the Appellate Body decided that the measure failed to meet the requirements of the *chapeau* of Article XX and, therefore, was not justified under Article XX of GATT 1994. Section 609 had been applied in a manner constituting "unjustifiable discrimination between countries where the same conditions prevail." Section 609 required all other exporting members to adopt the same policy as that applied to domestic US shrimp trawlers. The United States did not permit imports of shrimp even if they were harvested by commercial shrimp trawl vessels using TEDs if those shrimp originated in waters of countries not certified under Section 609. The United States failed to engage the appellees in serious, across-the-board negotiations with the objective of concluding bilateral or multilateral agreements for the protection and conservation of sea turtles. And the United States negotiated seriously on certification with some Members, but not with others that exported shrimp to the United States. In adopting a regulatory programme that was essentially the same as the US programme without inquiring into the appropriateness of that programme for the conditions prevailing in the exporting countries, the application of the measure was judged to constitute "arbitrary discrimination".

As a consequence, the US Department of State issued a set of revised guidelines for the Implementation of Section 609 of Public Law 101-162 relating to the protection of sea turtles in shrimp trawl fishing operations. However, a second dispute was filed by Malaysia. The US and Malaysia had failed to conclude an agreement on certification to enable Malaysia to export shrimp to the US. The Panel in this second dispute found that while the United States had an obligation to negotiate an international agreement regarding the protection of sea turtles, it had no obligation to conclude such an agreement. The revised guidelines were applied in a manner that did not constitute a means of "arbitrary or unjustifiable discrimination between countries where the same conditions prevail" and was within the scope of measures permitted under Article XX. When the Panel's ruling was appealed by Malaysia, the Appellate Body upheld the Panel's finding that the revised US measure was justified under Article XX as long as serious, good faith efforts to reach a multilateral agreement, remain satisfied.

(e) Harmonization

As discussed in previous Sections, harmonization is one approach to resolve potential problems in international trade when standards in the exporting and importing countries differ. Harmonization is nothing more than the agreement to use just one common (existing or new) standard in a situation where standards across jurisdictions differed before. Such a standard may be referred to as an "international standard".

As noted previously, both the TBT and SPS Agreements make reference to international standards. The TBT Agreement contains the obligation to use relevant international standards as a basis for technical regulations and standards set at the national level, except when such international standards would be ineffective or inappropriate in achieving their goal, for instance because of climatic or geographical factors or technological problems. An often-cited example is international standards for building construction, which may not be appropriate in areas prone to earthquakes. Similarly, the SPS Agreement mandates Members to base their sanitary or phytosanitary (SPS) measures on international standards, subject to certain exceptions. Most importantly, a country may have SPS measures in place that result in a higher level of SPS protection than that implicit in the international standard, if there is a scientific justification[164] or if the level of SPS protection deemed appropriate by the Member requires such measures in light of the risk assessment performed.[165]

The (legal) importance of international standards is highlighted by the fact that SPS measures conforming to (and TBT requirements being "in accordance with") international standards are presumed not to constitute trade barriers.[166] Apart from this important advantage of using international standards, both Agreements allow Members to define the "legitimate objectives" (TBT) – an open-ended, illustrative list is provided in TBT Article 2.2 – or an "appropriate level of protection" (SPS) such that stricter TBT requirements or more SPS-stringent measures than those sanctioned by a given international standard may be needed in order to achieve these objectives. The TBT Agreement (Article 2.2 and 2.4) provides that a technical regulation not based on an international standard must be evaluated in terms of two dimensions: first, in regard to its trade effects, a TBT measure may not be more trade-restrictive than necessary to fulfil its (supposedly legitimate) objective; second, in regard to its effectiveness, the risks of not achieving that objective must be assessed, taking into consideration, among other factors, the available scientific and technical information, related processing technology or intended end-uses of products.

164 According to footnote 2 of Article 3 of the SPS Agreement, a scientific justification exists if, on the basis of available scientific information, a Member determines that the relevant international standards are not sufficient to achieve the appropriate level of SPS protection.

165 This paragraph loosely paraphrases some key obligations contained in TBT Article 2.4 and Paragraph F of the Code of Good Practice, as well as SPS Articles 3.1, 3.3 and 5. It omits others as well as some potentially important legal nuances.

166 Again, this is only a rough representation of TBT Article 2.5 and SPS Article 3.2. It should be noted that only standards conforming to international standards, i.e. not merely being based on them, benefit from this rebuttable presumption of conformity. In *EC-Hormones*, the Appellate Body clarified the difference between "based on" in SPS Article 3.1 and "conform to" in SPS Article 3.2. "A measure that 'conforms to' and incorporates a Codex standard is, of course, 'based on' that standard. A measure, however, based on the same standard might not conform to that standard, as where only some, not all, of the elements of the standard are incorporated into the measure" (WTO, 1998: para. 163; see also paras. 164-166).

Pursuant to SPS Article 2.2, SPS measures may only be applied to the extent necessary to achieve protection of human, animal or plant life or health, must always be based on scientific principles and may not be maintained without sufficient scientific evidence (except for "precautionary" measures in accordance with SPS Article 5.7). They must also include an assessment of the risks against which a country wishes to protect itself (SPS Articles 5.1. to 5.4).[167]

All in all, the requirements imposed on SPS measures not conforming to international standards seem to be greater than on TBT measures, especially about the need to furnish scientific evidence and, for each measure, routinely to carry out an assessment of risks. In this context, it is worth noting that under the SPS Agreement, there are clear indications of what constitutes an international standard. In Article 3.4 and Annex A, paragraph 3, of the SPS Agreement, the standards of only three organizations are concretely identified as such (see Box 16). But no international standardizing bodies are listed in the TBT Agreement. Annex 1.4 of the TBT Agreement only contains a rather broad reference to an "international body or system" as one whose membership is open to the relevant bodies of at least all Members. Additional guidance on the identification of these bodies is provided in a decision by the TBT Committee (WTO, 2000b: 24-26, Annex 4), which established principles concerning transparency, openness, impartiality and consensus, relevance and effectiveness, coherence, and developing country interests to help clarify the concept of international standards for the purposes of the TBT Agreement.

It has been discussed in previous Sections that a common standard has the potential to facilitate trade across borders by making products more substitutable, improving consumer confidence in specific product characteristics, ensuring compatibility between products, and so on. To the extent that different standards have artificially segmented the domestic from foreign markets, harmonization is expected to lead to increased trade and competition and, ultimately, to lower prices and/or enhanced quality. All of these reasons may explain the strong support that harmonization and the adherence to international standards receive in both the TBT and SPS Agreements. Yet, the discussion in Section IIB also showed that harmonization and the possibly resulting reduction in product variety is not always desirable. This underlines the importance of the flexibility granted to Members in both the TBT and the SPS Agreement to deviate from international standards if sufficient justification for such a deviation is provided.

In WTO jurisprudence reference to international standards was made in *EC–Sardines* (see Box 24). In this case Peru disputed an EC Regulation that prohibited the use on cans/tins of the term "sardines" for species other than *Sardina pilchardus* (caught mainly off European coasts). A marketing standard for preserved sardines by the FAO/WHO Codex Alimentarius Commission (Codex Stan 94) allows for the use of the term "sardines" (albeit in a qualified manner, e.g. jointly with the country or species name) for a number of species other than *Sardina pilchardus*, including *Sardinops sagax* from the Eastern Pacific harvested by Peru. The central questions under Article 2.4 of the TBT Agreement were whether Codex Stan 94 constituted a relevant international standard, whether it had served as a basis for the disputed measure and, if not, why it had not been used – that is, why it was considered ineffective or inappropriate to fulfil the policy objective pursued.

On the first question, the EC's arguments were rejected. It had claimed that Codex Stan 94 was not a relevant international standard, as it had not been adopted by consensus and had a different product coverage than the EC regulation. The Appellate Body upheld the decision by the panel that, for the purposes of the TBT Agreement, the definition of a "standard" in Annex 1.2 to the TBT Agreement did not require approval by consensus for standards adopted by a "recognized body" of the international standardization community. It also confirmed that the Codex standard "bears upon, relates to, or is pertinent to" the EC technical regulation.

[167] In *EC–Hormones*, the Appellate Body succinctly observed: "In generalized terms, the object and purpose of Article 3 is to promote the harmonization of the SPS measures of Members on as wide a basis as possible, while recognizing and safeguarding, at the same time, the right and duty of Members to protect the life and health of their people. The ultimate goal of the harmonization of SPS measures is to prevent the use of such measures for arbitrary or unjustifiable discrimination between Members or as a disguised restriction on international trade, without preventing Members from adopting or enforcing measures which are both "necessary to protect" human life or health and "based on scientific principles", and without requiring them to change their appropriate level of protection. The requirements of a risk assessment under Article 5.1, as well as of "sufficient scientific evidence" under Article 2.2, are essential for the maintenance of the delicate and carefully negotiated balance in the SPS Agreement between the shared, but sometimes competing, interests of promoting international trade and of protecting the life and health of human beings" (WTO, 1998: para. 177).

It was, therefore, to be considered a relevant international standard, as it had implications for fish species that could be sold as preserved sardines, including *Sardinops sagax* (WTO, 2002: paras. 227 and 232-233). Next, the Appellate Body examined whether the Codex standard had been used "as a basis for" the EC technical regulation, i.e. acted as a "principal constituent" of that regulation.[168] It concluded that this was not the case, as, at a minimum, the technical regulation in question should not be contradictory to the relevant international standard. Indeed, under the EC regulation, species such as *Sardinops sagax* could not be called "sardines" even when combined with the name of a country, species, etc., as foreseen by Codex Stan 94. Finally, the Appellate Body held that the capacity of a measure to accomplish the stated objectives – its effectiveness – and its suitability to do so – its appropriateness – were "both decisively influenced by the perceptions and expectations of consumers in the European Communities relating to preserved sardine products" (WTO, 2002: para. 289). It did not see evidence that consumers in the European Communities had always associated the name "sardines" exclusively with *Sardina pilchardus*. The Appellate Body also noted that, under Codex Stan 94, *Sardinops sagax* could bear a denomination distinct from that of *Sardina pilchardus* and that the very purpose of these labelling regulations for sardines of species other than *Sardina pilchardus* was to ensure market transparency (WTO, 2002: para. 290). It, therefore, concluded that Codex Stan 94 was not ineffective nor inappropriate to fulfil legitimate objectives pursued by the EC regulation: market transparency, consumer protection, and fair competition.

As noted previously, the value of harmonization hinges critically on the availability of financial means and expertise in interested countries to participate in international standard-setting. The *EC–Sardines* case has underlined the importance of taking part in such processes. Both the SPS and TBT Agreements oblige Members and their standardizing bodies to take part in the preparation of international standards within the limits of their resources (TBT Article 2.6 and Paragraph G of the Code of Good Practice, and SPS Article 3.4). A lot of effort has gone into monitoring the use of international standards (pursuant to SPS Articles 3.5 and 12.4[169]) and facilitating the participation by developing countries in the work of relevant bodies, in particular since the Doha Decision on implementation. In November 2000, Members requested that the Director-General explore with relevant international standard-setting organizations and relevant intergovernmental organizations financial and technical mechanisms to assist the participation of developing countries in standard-setting activities ("Minutes of Meeting of 18 October 2000", WT/GC/M/59, 13 November 2000, paras. 11 and 14). In 2001/2002, the Director-General contacted a number of international standardizing bodies and intergovernmental organizations for this purpose and prepared a report compiling the information received from these bodies and organizations. In the Doha Ministerial Decision on Implementation-Related Issues and Concerns adopted on 14 November 2001, Ministers took note of the actions taken to date by the Director-General to facilitate the increased participation of Members at different levels of development in the work of the relevant international standard setting organizations as well as his efforts to coordinate with these organizations and financial institutions in identifying TBT and SPS-related technical assistance needs and how best to address them. The Director-General was further instructed to continue his cooperative efforts with these organizations and institutions, including with a view to according priority to the effective participation of least-developed countries and facilitating the provision of technical and financial assistance for this purpose.[170] On the SPS side, this decision has led, for instance, to the establishment of a fund (the Standards and Trade Development Facility, STDF) by the World Bank, administered by the WTO in partnership with the FAO, OIE, WHO and World Bank. Other international organizations, in both the TBT and SPS areas, have created their own mechanisms, such as the "FAO/WHO Trust Fund for the Participation of Developing Countries and Countries in Transition in the Work of the Codex Alimentarius Commission". These capacity-building activities have been discussed in more detail in Section IIC.

168 The Appellate Body, using the usual dictionaries, found more synonyms and was also guided by its related decision in *EC–Hormones*. See WTO (2002): paras. 244-245, and WTO (1998): para. 163.

169 See also related documentation, in particular WTO (2004).

170 See WTO (2001): para. 3.5 (SPS) and para. 5.3 (TBT), and WTO (2003): 12-13, on follow-up activities.

Box 24: WTO dispute: *European Communities–Trade Description of Sardines*

This dispute arose when the European Communities prohibited the use of the term "Peruvian sardines" on tins containing sardine-like fish species (*Sardinops sagax*) caught off the Peruvian coast. The relevant EC Regulation provided that only products prepared form *Sardina pilchardus* (the "European sardine") may be marketed as preserved sardines. In other words, only products of this species were allowed to feature the word "sardines" as part of the name on the container.

The Panel, confirmed in September 2002 by the Appellate Body, ruled in favour of Peru. It found that a standard set by the Codex Alimentarius Commission for sardine products constituted a "relevant international standard" under the TBT Agreement. The Codex standard set forth specific labelling provisions for canned sardines prepared from fish from a list of 21 species, including both *Sardina pilchardus* and *Sardinops sagax*. The Panel and Appellate Body ruled that this standard had not been used as a basis for the EC Regulation and that the standard was not "ineffective or inappropriate" to fulfil the legitimate objectives" pursued by the EC Regulation. Therefore, that regulation was declared inconsistent with TBT Article 2.4.

In July 2003, Peru and the EC informed the WTO Dispute Settlement Body that they had reached a mutually agreed solution to the dispute. According to the amended EC Regulation, Peruvian sardines could be marketed in the EC under a trade description consisting of the word "sardines" together with the scientific name of the species, i.e. "Sardines – Sardinops sagax".

3. CONCLUSIONS

In this Section, the legal texts related to standards were presented and an analysis of some of the key concepts relevant to standards in the TBT and SPS Agreement as well as GATT 1994 was provided. These concepts have been compared to similar or analogous concepts in the economic analysis presented in Section IIB and reference was also made to the relevant WTO jurisprudence. The discussion has shown that economic and legal reasoning evolve along similar lines. Yet it also draws attention to the following unresolved issues.

National versus global welfare maximization

Standards that aim at resolving any one of the market inefficiencies discussed in Section IIB may have a negative effect on trade. If this is the case, the standard may reduce the welfare of the imposing country's trading partners. It is also possible that these losses outweigh the benefits going to the country introducing the policy. In other words, the standard is not one that maximizes global welfare. The exact role of the WTO in such a context seems not to have been explicitly defined.

The WTO is a multilateral organization and its role has often been defined in terms of global welfare maximization. Yet, when it comes to the use of standards, WTO legal texts and jurisprudence indicate clearly that Members have the right to define their own "appropriate level of protection". This is a concept related to national welfare maximization. It has also been argued that optimal policies from the point of view of national welfare should be considered consistent with WTO Agreements. However, it must be acknowledged that targetting global welfare maximization would be difficult in practice in this context because it would require the weighing of different "appropriate levels of protection" across Members.

The role of consumer interests and scientific evidence

Consumer preferences play a crucial role in economic analysis when it comes to determining appropriate government policy. Scientific evidence is likely to be one of the determinants of consumer opinions, which raises important questions concerning the availability of scientific evidence to consumers, the quality of that evidence and its timeliness. But consumers may not base their opinion on scientific evidence alone. Other sources of information, including media, influence consumer opinion. Consumers may also simply not have appropriate access to the relevant scientific evidence. Their opinions with respect to certain government policies, e.g. food safety or environmental standards, may therefore be "mistaken" from the point of view of scientific evidence. They may, for instance, overestimate the health risk posed by a certain food.

In this situation, a well-informed government must weigh the costs of the measure against current and future benefits of risk reduction. The future benefits are likely to be lower than consumers expect today because they misjudge the actual risk involved. In other words, policies based on erroneous consumer opinions concerning risk may end up being very costly for a society. Even so, the current benefits to consumers may be important enough to introduce a policy measure that deviates from the one that may appear most appropriate from a purely scientific point of view. Governments have a role here to improve the quality of the information available to consumers. Yet the example raises an intriguing question with respect to WTO disputes that has also been raised in the relevant literature. What if a defendant argues that health protection is only one objective and that consumer concerns or moral standards are the real basis for the relevant measure? Should the measure in this case be considered an SPS measure or not? This question is important as the SPS Agreement makes it very clear that the need for measures must be justified on the basis of scientific evidence, while in the TBT Agreement the requirement for scientific justification is less rigorously defined.

The role of international standards

The economic discussion in Section IIB concluded that the international harmonization of standards is not in all cases a desirable objective, either from the national or global point of view. The discussion in this Section has shown that WTO Agreements encourage the creation and use of international standards. In particular, countries applying an international standard are presumed to be applying WTO-consistent policies under both the SPS Agreement and the TBT Agreement. Should it be concluded that WTO Agreements are in conflict with economic thinking?

Not necessarily. Neither Agreement excludes deviations from international standards. These can be WTO-consistent if they pursue legitimate policy objectives. Besides, the SPS Agreement requires proof of a rational link between the relevant policy measure and the policy objective, or more specifically the Member's "appropriate level of protection". All these requirements make sense from an economic point of view. In particular, the emphasis on scientific evidence in the SPS Agreement appears justified considering that this Agreement only deals with mandatory measures. The discussion in Section IIB has shown that mandatory measures tend to have strong impacts on market transactions in general, and trade flows in particular. Welfare maximization considerations would therefore probably lead economists to conclude that such measures should be based on very strong evidence.

How to enforce process standards in the multilateral trade system?

The multilateral trading system has long been hesitant to deal with non-incorporated PPMs, but with the *US-Shrimps* decision, such measures may be argued to have become part of the system. The concerns about their enforcement, however, remain. Non-incorporated PPMs cannot be controlled at the border and involve control on the production site of the exporting country. In the case of *US-Shrimps*, these were vessels, but in other cases, this may involve control of other types of production sites. It is not sure whether exporting countries will, as a general rule, accept inspectors from importing countries to inspect production sites in their territory.