

Classification of Foreign Technical Trade Barriers Facing U.S. Agricultural Exports

In 1996, the U.S. Department of Agriculture (USDA) asked field personnel in its Foreign Agricultural Service (FAS), who collectively cover 132 countries, to identify questionable foreign measures that threatened, constrained, or blocked U.S. exports of primary and processed agricultural, forestry, and fishery products. Each producer group that participated in the FAS Cooperator Program was also asked to identify foreign technical trade barriers.¹⁵ This information was subsequently vetted by scientists and analysts in USDA's regulatory agencies,¹⁶ who recommended deletion of identified barriers in the data set that were judged to be in conformity with international legal commitments, such as the WTO and NAFTA SPS Agreements.

The USDA survey results provide the most comprehensive view to date of regulatory regimes facing an important agricultural exporting nation.¹⁷ The results confirm the importance of technical barriers in international agricultural markets. Questionable technical

¹⁵ The Cooperator Program at FAS includes approximately 40 groups representing specific U.S. commodity sectors such as horticultural products, feed grains, wheat, soybeans, and rice. These groups are funded by their members, primarily agricultural producers and processors. FAS and the cooperators share in the cost of overseas market-development activities.

¹⁶ These agencies include the Animal and Plant Health Inspection Service (APHIS), the Food Safety and Inspection Service (FSIS), the Agricultural Marketing Service (AMS), and the Grain Inspection, Packers and Stockyards Administration (GIPSA).

¹⁷ Prior to USDA's 1996 survey, the only institutional attempt known by the authors to systematically identify technical barriers has been the United Nations Committee on Trade and Development's (UNCTAD's) Trade Control Measure (TCM) database. In addition to technical barriers, the TCM database records the use of other NTB's, such as quotas, licensing measures, price controls, and monopolistic practices. The shortcomings of this database are widely recognized, such as the lack of any information on health or safety regulations in most EU countries (Ndayisenga and Kinsey). The fact that the TCM database indicated that the United Kingdom employed only one kind of NTB—bilateral quotas—illustrates the piecemeal nature of the data collected.

barriers were reported for 62 countries. Over 300 market restrictions were identified that threatened, constrained, or blocked an estimated \$5.0 billion of U.S. agricultural, forestry, and fishery exports, 7.1 percent of the \$69.7 billion total exported in 1996. Market retention issues accounted for 61 percent of the estimated export revenue losses, with market expansion issues (24 percent) and market access issues (15 percent) accounting for the remainder.¹⁸ A wide range of products was affected by these measures, but four commodity groups accounted for most of the estimated export revenue losses: processed products (26 percent), grains and oilseeds (24 percent), animal products (19 percent), and horticultural products (13 percent). The restrictions identified in the survey were dominated by risk-reducing measures, particularly those addressing commercial plant and animal health issues (210 measures, which produced estimated export revenue losses equal to 61 percent of the total) and food safety (76 measures, which resulted in estimated export revenue losses equal to 48 percent of the total).¹⁹

The survey data on foreign technical barriers are classified by the regulatory regimes identified in the preceding matrix, both to permit examination of the distribution of measures likely to be most trade-restrictive and to provide perspective on the relative importance of measures that fall in different regulatory goal categories (table 5). The proportion of the observations that fall in the category of risk-reducing

¹⁸ Market retention issues involve regulations under consideration by a foreign government in 1996 that could have prevented or curtailed ongoing U.S. exports of a product or products. Market expansion issues are those where a foreign regulation imposes restrictions on allowable varieties, breeds, or provenance of U.S. agricultural exports. Expansion issues also include instances where a foreign country's rigorous conformity assessment requirements impede, but do not preclude, U.S. exports. Market access issues include those foreign regulations that prohibit any entry of U.S. exports.

¹⁹ The percentages sum to more than 100 because some measures span regulatory goals. Details of the survey design as well as summary descriptive statistics of foreign technical barriers to U.S. agricultural exports can be found in Roberts and DeRemer (1997). Summaries of the aggregated survey results are also provided in Thornsbury, Roberts, DeRemer, and Orden (forthcoming).

Table 5--Classification of technical trade barriers to U.S. agricultural exports identified in USDA survey

| Regulatory goals/policy instruments | Risk-reducing measures | | | Non-risk-reducing measures | | | Non-classifiable | Total |
|-------------------------------------|---------------------------|---|--|----------------------------|---------------|--------------|------------------|------------|
| | Food safety | Commercial animal and plant health protection | Protection of natural environment from HNIS ¹ | Quality attributes | Compatibility | Conservation | | |
| | <i>Number of barriers</i> | | | | | | | |
| Total bans | 12 | 56 | 3 | 1 | 0 | 0 | — | 72 |
| Partial bans | 0 | 21 | 0 | 0 | 0 | 0 | — | 21 |
| Input standards | 0 | 0 | 0 | 0 | 0 | 0 | — | 0 |
| Process standards | 32 | 78 | 1 | 15 | 0 | 0 | — | 126 |
| Product standards | 26 | 33 | 0 | 13 | 0 | 0 | — | 72 |
| Package standards | 1 | 0 | 0 | 2 | 5 | 0 | — | 8 |
| Label requirements | 2 | 2 | 2 | 7 | 0 | 1 | — | 14 |
| Controls on voluntary claims | 0 | 0 | 0 | 1 | 0 | 0 | — | 1 |
| Non-classifiable | 3 | 20 | 0 | 0 | 0 | 0 | 2 | 25 |
| Total | 76 | 210 | 6 | 39 | 5 | 1 | 2 | 339 |

* The 1996 USDA survey of questionable foreign technical barriers to U.S. agricultural exports identified 302 market restrictions in 62 countries. The number of entries in this table exceeds that total primarily because some identified barriers were comprised of more than one policy instrument. A small number of individual measures spanned regulatory goals. For example, a product standard that was justified on the basis of preventing entry of zoonoses (viruses that are communicable between animals and humans) was classified as both a food safety and animal health measure.

¹ Harmful non-indigenous species

measures—just over 86 percent—is striking. The number of measures with the cited rationale of protection of commercial production (62 percent) and protection of human health (22 percent) accounted for nearly all of the risk-reducing measures.²⁰

Closer examination of the observations in the three risk-reducing regulatory goal categories (table 5) indicates that the number of measures aimed at the reduction of risk presented by biological stressors such as noxious weeds, yield-reducing arthropods, or food-borne microbial pathogens was far greater than the number of measures that target risks posed by chemical stressors such as food and feed additives. All of the 210 measures in the Commercial Animal and Plant Health Protection category are justified on

the basis of reducing risks posed by biological hazards. More than half (47) of the 76 measures in the Food Safety category also target biological stressors. The principal differences between chemical and biological stressors are that biological organisms grow, reproduce, and may multiply; actively and passively disperse; interact with ecosystems in unpredictable ways; and randomly evolve (Powell, citing Simberloff and Alexander). Powell notes that the principles, methods, data, and conventions for chemical risk assessments are far more advanced than for the assessment of risks associated with biological stressors and that, in many cases, there may be “large, irreducible uncertainties” in assessing the potential consequences of biological hazards (*op. cit.*, p. 8). Recalling the discussion above (p. 14) about ambiguity-averse behavior by regulatory authorities, it is perhaps not surprising that the large majority of the most trade-restrictive measures, import bans, mitigate risks posed by biological hazards that fall in the Commercial Animal and Plant Health Protection category. A less charitable view of the large number of trade-restrictive measures in this category is that the large uncertainties and relatively immature state of risk assessment for biological hazards offer, in some instances, a convenient veil for regulatory protectionism.

²⁰ A small number of observations could not be classified, a fact which perhaps should not be unanticipated in view of the fact that the survey targeted questionable barriers. In some instances, the rationale for import restrictions is unclear, either because the foreign government provides no explanation or provides conflicting explanations for the policy. In other cases, the prima facie regulatory goal is clear, but the policy instruments could not be clearly identified because of erratic enforcement of de facto measures that had never been formally promulgated by the foreign government.

The relatively small number (six) of risk-reducing measures aimed at protecting the natural environment from HNIS might be explained by the fact that regulators typically examine the potential harm to native flora and fauna only after an evaluation indicates that the proposed imports present negligible risks to commercial crops and livestock. Consequently, some measures justified only on the basis of reducing the biological risks to crops and livestock likely protect native flora and fauna as well. The U.S. ban on entry of commercial cultivars of the genus *Rhododendron* in growing media illustrates this point. For years the ban was rationalized on the basis of protecting domestic nursery stock. APHIS's reexamination of the risks posed by allowing entry of *Rhododendron spp.* in the early 1990's led to a determination that these imports posed negligible risks to the domestic industry if imported under the proposed risk management protocol. However, the measure remained in place because the agency had insufficient information to conclude that the proposed imports did not threaten wild *Rhododendron spp.*, which are protected by the Endangered Species Act (Romano and Orden).

Most of the nearly 14 percent of measures identified in the three non-risk-reducing regulatory goal categories were Quality Attribute measures. A review of the survey responses in this category indicates that, in many instances, Quality Attribute measures were identified as barriers because of the administration or enforcement of the measure, rather than the measure per se. For example, compliance with the grading regimes of foreign countries was sometimes difficult or impossible for exporters of perishable products in view of the importing country's conformity assessment requirements. Other Quality Attribute measures spanned a wide range of issues, from government-mandated shelf-life periods to bans on "inferior" breeds of livestock. The number of measures identified in the Compatibility category, as anticipated, was small. Four of the five identified measures established dimensions for fresh produce containers that were mandatory for imports but not enforced nationally.

The identification of only one Conservation measure is somewhat surprising in view of the prominent controversies over the use of import restrictions to achieve environmental goals in the 1980's and 1990's

(Esty, McDorman). One hypothesis is that while foreign environmental measures such as container-recycling requirements might have increased costs for U.S. exporters of agroindustrial products, they were not viewed by USDA field personnel and U.S. producer groups as questionable measures if domestic firms were obliged to comply with the requirements as well. There could be two explanations for why survey respondents did not identify more foreign trade restrictions (adopted either unilaterally or as a part of a multilateral coalition) which were aimed at preventing environmental harm outside the importing country. The first is that the United States is often a member of these multilateral coalitions, and usually enforces its obligations under treaties, such as the International Convention for the Regulation of Whaling, to place restrictions on domestic production practices related to preservation of the global biosphere. Thus exports of products that might be denied entry to foreign markets because they deplete stocks of globally endangered species, for example, are likely not produced by the United States, either for domestic consumption or export. A second reason emerges from a recent study of the use of trade measures against foreign environmental practices. Hudec notes that "only a few GATT Members have both the power and the inclination to make significant use of unilateral trade restrictions for environmental purposes" (*op.cit.*, p. 145). The EU and the United States most frequently adopt these kinds of measures, Hudec observes, but "no other government comes close to matching" the volume of U.S. legislation that authorizes or mandates the use of externally directed trade restrictions. This may change over time, of course, but survey respondents identified only one foreign Conservation trade barrier in the 1996 USDA study.

More generally, evaluation of the data requires that the results be examined within the context of the survey design. For example, a broader sample that included major food manufacturers would likely have led to the identification of more measures in the Food Safety and Quality Attribute categories, even though the estimated export revenue losses attributed to technical barriers for processed agricultural products in the 1996 survey were already greater than for any other product category (Roberts and DeRemer).

Also, since only questionable barriers were targeted in the survey, the distribution of policy instruments could be skewed toward those that are generally more trade restrictive (the top of table 5). Twenty-six percent of the measures used to protect commercial production agriculture are bans; had respondents identified all technical measures limiting or potentially limiting U.S. exports rather than only questionable ones, this proportion might well be smaller. And finally, it is not known how robust the profile of regulatory regimes that emerges from the survey results is across countries (see box). A different country could face a substantially different distribution of questionable regulatory regimes if the commodity composition of its exports varies from that of the United States. The destination of exports is also likely to be a relevant factor—a country that exports primarily to developing countries may face different regimes from one that ships to markets in North America, Japan, and Europe.

It should also be noted that the estimated trade impacts reported in the survey were expert consensus estimates of U.S. producer revenue losses resulting from a restricted quantity of U.S. exports at a fixed world price. These estimates were not derived from

formal economic models—a difficult task in view of the fact that restrictions were identified for products ranging from grass seed to goats—but nonetheless aided USDA's program agencies in identifying priorities by providing an order-of-magnitude indication of the economic significance of these measures to U.S. producers. The profile of technical barriers that emerged from the survey estimates thus provided USDA with a starting point for targeting technical assistance funding; developing proposals to spur effective multilateral implementation of the WTO SPS and TBT Agreements; and crafting U.S. strategies for participation in international standards-setting organizations. Formal empirical models can be used to corroborate or challenge the estimated trade impacts reported in the survey, but clearly these tools can also be used to furnish policymakers with other important information. For example, models can be used to assess the welfare costs of current measures as well as to evaluate proposed alternatives, thereby enabling a ranking of regulatory options. Models can also provide estimates of the distributional effects of alternative measures, information which is sometimes regarded as an important factor in regulatory decisions.

U.S. Technical Trade Barriers

In 1997, ERS expanded its efforts to widen the information base on technical trade barriers by collecting data on U.S. import policies that foreign exporters had raised for discussion with U.S. officials. These measures were identified in interviews with officials in the regulatory agencies of the Executive Branch that are responsible for enforcing regulations and standards that affect imports, as well as individuals in USDA's Foreign Agricultural Service. The regulatory agencies include four USDA agencies (Animal and Plant Health Inspection Service; Food Safety and Inspection Service; Agricultural Marketing Service; Grain Inspection, Packers and Stockyards Administration), the Environmental Protection Agency, and the Food and Drug Administration.

Individuals in these 7 agencies reported that representatives from 14 countries had collectively identified 63 contentious U.S. measures. These data were then classified by regulatory goal, using the same taxonomy as the one developed for foreign technical barriers (the data were not sufficiently detailed to further classify the measures by policy instrument). The results of this classification indicate that the distribution of U.S. and foreign technical trade across regulatory goals are approximately the same. Risk-reducing measures dominate the identified U.S. barriers, as they dominate the identified foreign barriers. Quality Attribute measures represent the largest category of non-risk-reducing measures in both samples. Further examination of the data on U.S. barriers indicates that the development status of the foreign country is correlated with the number of identified measures.

U.S. technical barriers to imports

| Regulatory goal/measure identified by: | Risk-reducing measures | | | Non-risk-reducing measures | | | Total |
|--|---------------------------|---|--|----------------------------|---------------|--------------|-------|
| | Food safety | Commercial animal and plant health protection | Protection of natural environment from HNIS ¹ | Quality attribute | Compatability | Conservation | |
| | <i>Number of measures</i> | | | | | | |
| Developed countries | 5 | 17 | 1 | 8 | 0 | 2 | 33 |
| Upper middle income countries | 1 | 15 | 0 | 4 | 0 | 4 | 24 |
| Lower middle income countries | 1 | 8 | 0 | 0 | 0 | 0 | 9 |
| Least developed countries | 0 | 2 | 1 | 0 | 0 | 0 | 3 |
| Total* | 7 | 42 | 2 | 12 | 0 | 6 | 69 |

¹ Harmful non-indigenous species

* The total number of measures classified by regulatory goal (69) exceeds the total number of identified measures (63) because some measures spanned regulatory goals.