

An Analysis on the Motivations of Technical Barriers to Trade

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Supported by Ministry of Education Humanities and Social Sciences Research and Planning Funded Project: An Empirical Analysis and Countermeasure Study on the Impacts of Technical Barriers to Trade to China's Exports (12YJA630042). Southwest University PhD Funded Project: A Study on the Formation and Economic Effects of Technical Barriers to Trade (SWU1309306).

Received 8 March 2015; accepted 2 May 2015

Published online 30 June 2015

Abstract

The formation of technical barriers to trade (TBT) is the result of many influential factors, and the motivations have been explained from a variety of perspectives. This paper mainly analyzes the motivations of TBT from the perspectives of overcoming market failures, technical gap and competitions among the interest groups.

Key words: TBT; Motivation; Market failure; Game

Jiang, L. (2015). An Analysis on the Motivations of Technical Barriers to Trade. *International Business and Management*, 10(3), 8-11. Available from: <http://www.cscanada.net/index.php/ibm/article/view/6876>
DOI: <http://dx.doi.org/10.3968/6876>

INTRODUCTION

Because of the characteristics of strong concealment, strong pertinence, flexibility and being hard to monitor and forecast, TBT is increasingly becoming the main policy tool and instrument for countries to conduct trade protection. A theoretical analysis on the motivations of formation of TBT contributes to a better understating of the nature of TBT and its impact on international trades.

1. THE MOTIVATION BASED ON OVERCOMING MARKET FAILURES

Economic theory suggests that a moderate government trade policy intervention can overcome market failures and improve the domestic welfare. TBT is set to correct the information asymmetry in market economy, external effects, a lack of social public goods supply and other market failures.

1.1 Resolve the Information Asymmetry in Trades

Asymmetric information leading to adverse selection is a common phenomenon in market transactions. With the absence of technical regulations, standards and conformity assessment procedures in the market, producers and consumers have a serious information asymmetry for the same product; with an inability to determine product quality, consumers' willingness to pay will not adjust with the improvement of product quality, enterprises therefore choose to take low-quality low-cost competition method to make profits, thus the end result of market equilibrium is to produce low-quality products (Zhang, 2004). Asymmetric information leads to market failures and the generation of "lemon problem". Under this circumstance, the government should promulgate strict technical standards, conformity assessment procedures, health inspection and quarantine measures and other technical measures to clearly define the production process and quality of products, so as to help consumers fully access to the related information of product features and qualities, thus cannot only eliminate consumers' concerns on product qualities, protect their rights and interests, but also regulate and guide the behaviors of enterprises and avoid the generation of "lemon market".

1.2 Correct Negative Externalities

Trading activities often produce negative external effects, such as the possibility of new plant and animal diseases and pathogens brought about by some imported goods, which will not only survive in the importing country, reproduce and disseminate, and may produce new lesions and cause incalculable economic losses and safety risks to the importing country. China's environmental protection bureau data show that until 2004, there have been 16 kinds of alien species which formed serious harms in China, infringing as many as 1.5 million hectares of forest area annually, of which more than 1.4 million hectares are farmlands, causing a direct economic loss of 57.4 billion yuan per year (Wang, 2010). On the basis of risk assessment, the government's issuing qualification certification on imported products, inspection and quarantine of animals and plants, and other appropriate technical trade measures can control the negative externalities which may arise by imports.

1.3 Solve the Insufficient Supply of Public Goods

Theory and reality have proved: a simply market mechanism cannot produce sufficient quantity of public goods to meet social needs. Therefore, an appropriate government intervention through regulations, policies and other means to induce or forcibly achieve the supply of social public goods is the routine practice of governments. As for international trade, the performance is that the government enacts technical standards, conformity assessment procedures, inspection and quarantine measures and other technical barriers to restrict foreign goods which do not meet the requirements to enter, so as to ensure product quality, safety and health protection of human, animals and plants, protection of environments and other public welfare purposes. Of course, we cannot deny that when a government policy intervention objectively restricts foreign goods to enter and enhances the domestic well-being, it also may form on a trade protection of domestic industries.

2. THE MOTIVATION BASED ON TECHNOLOGICAL GAP

Although many technical measures help improve product quality, protect consumer rights and interests and promote international trades, because of the different levels of technological development, countries differ in terms of regulations, standards, conformity assessment procedures, inspection and quarantine systems, therefore increase the costs of cross-border flow of goods and form barriers to trade.

2.1 TBT Caused by the Gap Between Technological Developmental Levels

In reality, the consumers in developed countries and regions have a higher requirement on goods quality and performance, and have advanced detective and monitoring

tools, so their technical regulations and standards tend to be more demanding; however, due to the limited level of productive technologies, testing and monitoring means, developing country's sense of quality and standard levels are often far behind the developed countries, so the high-tech standards of developed countries often form barriers to trade with developing countries.

Taking the important global public health problem of pesticide and veterinary drug residues in food products affecting agricultural and food safety as an example: although numerous studies have already indicated that excessive pesticide and veterinary drug residues in the body can lead to direct poisoning, teratogenic, carcinogenic and many other reactions, due to the insufficient studies on food safety and human health and a serious lack of productive, testing and monitoring technologies, developing countries cannot develop appropriate technical regulations and standards to regulate; however, based on better public health technological supports, developed countries continuously improve existing standards of pesticide residues and veterinary drug residues, continue to introduce new restricted list of pesticides and veterinary drugs, causing a huge trade obstacle to the exports of developing countries.

2.2 TBT Caused by Systematic Differences of Technological Measures

Due to differences in national levels of technological development and technological developmental path, the technical measures based on which are also quite different.

On standard terms, the differences mainly include: (1) The contents under standards are different. For example, the EU bans the imports of beef containing synthetic hormones, but the United States, Japan and Korea, etc. do not have this stipulation. (2) On the means of standard, some countries tend to set standards by specifying product performances, while some other countries use only standard to specify product ingredients. (3) Specific requirements on the standard for similar product may vary.

Differences in terms of qualification assessment are manifested in the following aspects: (1) The standards of qualification assessment are different. Qualification assessment and quarantine are standards-based, but national levels of standards on a similar product may be quite different. (2) Qualification assessment systems have different contents. Some systems only make type test for product samples; some other systems also conduct inspection and evaluation on the manufacturer's quality assurance ability; moreover, some systems also implement daily supervision. (3) Different status of certification bodies. In some countries, certification bodies are government departments having the required capacity and reliability to carry out third-party quality certification or civil institutions authorized by the government, while other countries may be dominated by private organizations having relatively weak certification capability and reliability; Trust provided

by different authentication systems are different, and it is difficult to achieve a mutual recognition. A study by the OECD shows that testing and certification costs associated with different technological regulations and standards among countries have accounted for 2% to 10% of the production costs of enterprises (Kang, 2006).

In addition, countries' electronic data interchanges (EDI), units of measurement, bar codes, product identification labeling requirements and other trade-related information statements are not consistent and corresponding, which also obstruct trades. For example, the United States in 1999 required all customs to use EDI, otherwise customs formalities cannot be performed; appropriate unit of measurement is an important factor affecting many commodities, especially equipments, tools and dies, etc. to be successfully exported; many countries require to print bar codes on commodities within a time limit, otherwise imports are impossible, so that the bar code system has also become a de facto trade barrier.

Except for the central governments, local governments and non-governmental institutions also frequently issue many technological regulations whose numbers are constantly increased and forms are various. Due to insufficient information communication, exporting countries often lack an in-depth understanding on importers' technical regulations, standards and qualification assessment procedures, and are little known of new technical requirements, thereby delay the transaction opportunities and hinder exports.

2.3 WTO Rules Provide Basis for Progress of Technological Evolution and TBT

WTO-TBT / SPS agreements allow all members, under the condition of "reasonable scientific basis", to develop and maintain higher level technical measures than the existing international standards and guidelines. The flexibility clauses actually provide an important basis for developed countries to evolve their demanding requirements in terms of safe operation, sanitation and environmental protection which are based on advanced technologies to be TBT.

3. THE MOTIVATION BASED ON THE GAME AMONG INTEREST GROUPS

From the perspective of political economy, the formation of TBT is actually a process of public choice, and TBT policies can be viewed as a "public goods" characterized by non-market decision-making; governments at various levels also have their own pursuit of interest, and are not the "benevolent governments" in order to maximize social welfare; policy decision is a rational decision-making result among the "self-interested" government and various interest groups. The formation of TBT is an interest expression and selection result among producers, importers, consumers, various interest groups and government departments on the basis of their respective

right resources, is a game under the interest conflicts of parties, and is a political deal among the government and interest groups, and among various interest groups. The last extent to which a policy option can meet the requirements of different interest groups depends on the disposable powers of different interest groups in bargaining with the government.

From the perspective of producers, they want the government to set up a suitable standard which is able to squeeze out foreign firms so that they can fully occupy the domestic market and make monopoly profits, namely, producers prefer a protective standard which is higher than eliminating negative externalities; from the perspective of consumers, they want a minimum standard which is able to protect their safety and health, so that they can enjoy a decent product to maximize its utility at a low price.

A single people or enterprise is rational, they seek to maximize the utility or profit under the given condition. When the goal is the same, they will organize themselves to take collective actions for maximum benefits. The public selective process of TBT is a collective selective process under individual rationality, but individual rationality does not necessarily lead to collective rationality.

Despite of the large number and large size of consumers benefiting from free trades, their interests are dispersed and information are asymmetric, it's easy to produce a phenomenon of "free rider" and often difficult to organize effectively to exert a pressure on the government. But the manufacturers benefiting from trade protection are less but have a concentrated interest and strong economic foundation. They are easy to organize a major impact on government decision-making through lobbying and other activities, even to "capture" the government's decision-making process. This is the view of collective action proposed by Olsen, who holds that if an industry has a stronger capability to overcome the "free rider", it's more likely for the industry to organize a collective action to influence the government decision-making in order to get more protection. Therefore, those enterprises who are less, whose geography and sales are highly concentrated, or those industries falling into a difficult situation with low growth, high importing penetration and high unemployment are more likely to obtain a higher protection.

From the perspective of policy supply, when the government as the rational "economic man" in the system market sets a technical barrier to trade, in addition to taking into account the national interests, they also consider the demands of various interest groups so as to get political donations or political supports. Meanwhile, the policy action is also subject to the restriction of domestic and international system structures. Therefore, despite a higher technical barrier to trade harms the interests of a majority of people, when the majority is scattered and cannot unit to affect the decision-making, but to meet the demands of a few interest groups can gain

more revenues and political supports, compliant to the nature of a “rational man”, the government will tend to set a higher technical barrier to trade.

We often see such cases in reality, the American protection case of the sugar industry which is recorded by the American scholars Paul Krugman and Maurice Obstfeld in *International Economics* is illustrative. The US sugar industry does not have many employees (about 12,000 people), but the cost of the government to protect them is not small (over 500,000 US dollars’ cost for each job). They succeeded in persuading the government to protect them, because the impaired people of the protection policy- ordinary consumers are many but scattered. When the loss is at less than \$ 5 per capita, it is difficult for them to organize to put pressure on the government. But for producers, non-protection means the loss of millions of dollars, so they have a strong incentive to organize collective actions to put pressure on the government, to seek protection, and achieve success (Li, 2006).

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