



中国浦东干部学院博士文库（第二辑）

技术性贸易壁垒 对农产品国际贸易的影响

——一个经济学分析框架

余 佶·著

A Framework for the Economic Analysis of Impacts of
TBT on International Agricultural Trade



上海社会科学院出版社



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总 序

P R E F A C E

创办中国浦东、井冈山、延安干部学院，是党中央从推进中国特色社会主义伟大事业和党的建设新的伟大工程全局出发作出的一项重大决策。

中国浦东干部学院自 2005 年 3 月正式开办以来，按照胡锦涛总书记提出的联系实际创新路、加强培训求实效的指示精神，秉承实事求是、与时俱进、艰苦奋斗、执政为民的办学要求，以把学院办成中国共产党领导骨干的信念教育和开放教育基地、全国干部教育培训体制改革创新基地、中国干部教育培训国际化基地为目标，努力探索干部教育培训的浦东模式，取得了较为突出的业绩，正在向世界一流的执政党骨干和国家公务员培训学院的方向稳步迈进。

办好一所学院的关键是教师。人才是事业之本，人才兴则事业兴、事业旺。“所谓大学者，非大楼之谓也，有大师之谓也”，这句话对中国浦东干部学院来讲同样有指导意义。中国浦东干部学院汇集了一批优秀的教师，他们当中，既有国外学成归来的学子，也有来自国内著名高校、科研机

构的青年才俊。他们有火热的创业激情,有对干部教育培训事业的执著和热爱。他们大多拥有博士学位,在自己所属的学科领域已崭露头角。这支队伍是建设好中国浦东干部学院的人才支持和智力保证。为他们搭建平台,促进他们成长,引领他们发展,是学院义不容辞的职责。

支撑一所学院的基础是学术。学院之称,有学科、学养、学理之意蕴。没有了学术,学院也就失却了原动力和根基。中国浦东干部学院创办以来,坚决贯彻并创造性地执行中央的战略决策和一系列办学要求,明确了教育培训、科学研究、咨询服务、领导测评、网络教育五位一体的功能定位,突出强调了学术研究、学科建设在学院发展中的重要地位。整合学术资源、加强学科建设对学院发展至关重要。

体现一所学院办学水平的重要标志是品牌。品牌汇集了办学的智慧,凝聚了办学的精华,同时也提升了学院的美誉度。中国浦东干部学院以问题为核心,以能力为导向,以现场教学资源为依托,自创办以来培训了大批学员,培训成果显著,一批具有较高质量的课程品牌、教学品牌正在形成。从一所学院的发展来看,既要有教学的品牌,也要有科研的品牌;既要有品牌学员,也要有品牌教员;而这一切都需要长期积累。求木之长必先固其本。积累品牌素材,探寻品牌来源,滋养品牌发展,是学院发展的长远大计。

基于上述认识,我们组织出版了这套中国浦东干部学院博士文库。入选文库的书稿均为学院青年教研人员的博

士学位论文,并经过了严格的“双盲”评审。作者根据评审意见和所论问题的发展以及研究的深化,都进行了认真修改,可以说基本反映了所论问题的学科前沿。我们希望,这套分辑出版的文库能开启和激励我们的后续研究,促进学院自身研究特色和学术传统的形成,促进相关学科领域的建设,促进学术交流与繁荣。

文库的出版得到了上海社会科学院出版社领导和编辑同志的鼎力支持和帮助,借此表示诚挚谢意。同时,对为文库的建设作出贡献的评审专家和付出辛劳的同志表示诚挚的感谢。

文库中存在的不足,敬恳广大读者批评指正。

中国浦东干部学院博士文库编委会

2008年10月

ABSTRACT

Since the negotiations were launched and the Agriculture Agreement was accepted in the Uruguay Round, many countries especially the developed ones have increasingly resorted to technical measures to control the agricultural imports. It's evident that technical barriers to trade (TBT) have an increasing impact on international agricultural trade, nominally to ensure the food safety, protect the health of animals and plants and the environment as well. Although it's natural for consumers to demand a higher and higher standard of products with the pace of science and society, the increase of consumers' income, yet TBT have played and maybe will go on to play a substantial role in limiting the trade flow between countries. That's why the policy-makers, the interests groups and economists all attach great importance to them. So it's quite significant to evaluate the economic impacts of TBT.

There are nine chapters in this book. Besides the introduction of chapter 1, chapter 2 provides background materials about TBT. After describing the three different definitions of TBT—the neutrality-oriented, the trade flow-oriented and the welfare-

oriented, the paper expounds TBT have dual functions. Their positive effects are to protect the life and health of human being, animals and plants as well as the environment in nature, but TBT also can be used by trade-protectionists as instruments for trade protection. To the importing country and exporting country, TBT have definitely different impacts. The chapter makes a comprehensive classification of TBT by policy instrument, the scope of the measure and regulatory goals in order to provide an introductive explanation to estimate the economic effects, and forecasts TBT will dominate in the public policy debates in the foreseeable future.

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Because the impacts of TBT are complicated, chapter 3 studies the impacts by two models from the perspectives of trade and welfare. The first simple small-country model of protection postulates a situation where the foreign supplier of the good is required to comply with some form of technical measure as a condition of importation. Compliance with this technical measure is assumed to involve a cost, which acts like a tariff on the quantity of trade (but without tariff revenue) and then the technical measure is aimed to protect domestic producers. As a result, the importing country suffers a loss, essentially forgoing some of the potential gain from trade. Domestic producers gain and consumers pay both for the producer gain and for the cost of the useless measure. But this is only an extreme assumption, because nearly all TBT are scientifically based more or less. The second model postulates the technical measure is to correct the market failure and address the externality caused by the imports, under which the importing country's supply and demand curve

will shift. If the net national welfare is positive, then TBT are welfare-enhancing. So they are economically reasonable. As to the exporting country, the negative effects of TBT depend on the scope of measure. If the measure used by all importing countries is targeted to all the exports, the compliance cost will be shared among the exports and imports in terms of price. Furthermore, if the technical measure is used only by one specific importing country, the cost will be absorbed entirely by the importing country and the effect on any small export is not significant. But if there is one and only target country, the compliance cost will be borne by the exporter and results in the decline of export volumes and trade gains which can be often observed in reality.

Following the analysis of chapter 3, chapter 4 and 5 try to provide some approaches to estimate the impacts and evaluate the various empirical approaches.

However, given the heterogeneous nature of technical measures, a unifying methodology does not exist. Chapter 4 presents promising methodologies for modeling and quantifying TBT in the agricultural sectors from aspects of trade and welfare and mainly focuses on SPS and technical regulations that can have an impact on trade and provides some quantitative estimate methods of the impact of such barriers on market equilibrium, trade flows, economic efficiency, and welfare. As to the trade flow estimate, there are tariff equivalent (price wedge) method, gravity model approach and inventory as well. As to the welfare estimate, there is risk-assessment-based cost-benefit measure, which also implies the shift of trade flow. The approach of cost-benefit measure can identify the cost of technical measures and

discern whether TBT are used to correct the market inefficiency or to protect the domestic producers. The chapter finally also points out their strengths and weaknesses of these kinds of the methods.

Chapter 5 goes on to consider the welfare impacts of labeling systems technically. If the technical measures such as the mandatory and voluntary labeling which give consumers information on GMOs (Genetically modified organisms) content in foods inform consumers about the product information, the consumers will expect what they will get from the products-benefit or loss, so the measures may increase or decrease the demand of consumers. Because it's hard to estimate the welfare impacts accurately, chapter 5 tries to study why and how the two labeling systems have different impacts on different firms and consumers. With a dispute case of U. S and EU about labeling systems of GMOs and a model of vertical differentiation in competitive markets, chapter 5 evaluates the effects on price equilibrium and welfare levels, taking into account of differences in consumers' preference and implementation costs. It shows that the mandatory labeling scheme would be optimal in those countries with more GMO-averse consumers and no-GMOs practices producers. Voluntary labeling would instead optimally be chosen in those countries where producers are using GMOs and consumers are more concerned about the costs savings resulting in this technology adoption. The results are proved by the positions of the U. S. A and EU. Meanwhile, the chapter pointes out that China as the fourth big country of GMOs needs to enhance the importing and exporting regulation of GMOs.

Chapter 6 studies the relevant agreements of agricultural technical barriers. They are "Agreement on the application of sanitary and phytosanitary measures", "Agreement on technical barriers to trade", "Trade-related aspects of intellectual property rights", "Agreement on preshipment inspection" and "Agreement on rules of origin". The chapter evaluates the agreements and points out their possible negative impacts on the developing countries which are also mainly TBT-restricted countries for their lacking of technical innovation abilities, financing support, special knowledge and necessary institutions so as to their limited participation in international standard bodies.

Chapter 7 focuses on the TBT environment of China's exports. Due to laggard technology, China's agricultural exports such as aquatic products, fruits and vegetables and animal products are greatly restricted by TBT. If the trade barriers cannot be removed, China's trade terms and welfare will be suffered. The chapter elaborates the technical regulations and measures implemented in U. S, EU and Japan which are main countries restricting China's agricultural exports.

Then, chapter 8 tables proposals to deal with TBT from the perspectives of enterprises and governments which include taking part in the international standard bodies, improving the agricultural products safety system and supporting the domestic firms by finance, policy, management and negotiation etc. The empirical agricultural trade cases of Shandong Province and Shanghai give support to the proposals. In the end, the paper admits the best way to overcome TBT is the promotion of technological and economic levels.

Chapter 9 is the conclusion of the research.

The results of the research are as follows.

1. TBT have duplicate economic functions. On one hand, their goals are to correct the market inefficiency caused by externality as producing, marketing and consuming the imports. On the other hand, they may lead to the rent seeking behavior of some domestic industries as an instrument of trade protection. For the specific feature of agricultural trade, TBT are more easily to be used by policy makers as a tool to protect their own agriculture. But without evaluation of TBT's economic impacts, any opinion should be cautious.

2. TBT have different impacts on importing and exporting countries. A possible result is the decline of trade flow however, if TBT provide harmonious standards so as to reduce the transaction cost, the trade flow may be increased. In terms of the welfare, if the net national welfare of importing country is positive, it can be said that the TBT for importing country are reasonable. For exporting country, the impacts of TBT may be insignificant in some cases theoretically. But in reality, its trade terms and welfare are suffered at least in a short time.

3. Up to now, a unitary approach to evaluate the economic impacts doesn't exist. The approaches of estimating the impacts on trade flow such as tariff-rate equivalents and gravity modeling and those estimating the impacts on welfare such as risk-based cost-benefit analysis have their strengths and weaknesses. The weaknesses lie in the simplification of the assumption (for example, the approach of tariff-rate equivalents divides the price wedge into the tariff and TBT simply, so the impact of TBT may

be enlarged.), the data unavailability and the uncertainty of risk assessments. Indeed, the information on how regulation affecting the supply, the external cost and the price gap between imports and domestic goods are the key to the modeling framework. Even if the results caused by TBT may be observed, it's hard to quantify the TBT explicitly other than grasp some other information such as the supply elasticity. Besides, the effect of standards on consumers' willingness to pay and information of product's credit attribution such as GMOs is perhaps even more difficult to quantify, especially in the case of imaginary risks or in the case of ethical characteristics of the goods. As a result, the estimates are questionable in many cases.

4. For the controversial GMOs labeling barriers, a model of vertical differentiation in competitive markets shows that mandatory labeling may result welfare superior in those countries where highly GMO-averse consumers are prevalent and producers are using mainly a no-GMOs technology. On the other hand, when consumers are not strongly averse and prefer the price reduction associated with GMOs and producers mainly adopted GMOs technologies, a country optimally prefers to enforce a voluntary labeling system. The stances of U. S. A and EU can be explained by the result of model. Meanwhile, as the fourth big country of GMOs, China needs to enhance the importing regulation of GMOs and promote the commercial producing of GMOs to enter the foreign market and overcome the technical barriers. To achieve the goals, China needs to deepen its understanding of the global market and regulate its domestic GMOs products effectively.



5. As a restricted country by TBT, China's agricultural exports will be circumscribed with higher exporting costs at least in a short term. Its exports and national welfare will be both suffered by the negative effects of TBT. In order to remove the TBT, China's enterprises and governments need to put more efforts. What the governments should do is participating in the international standard bodies to command the standard-making rights and enjoy the special rights of developing countries; establishing a sound agricultural safety system; providing more supports and services which include giving more technical and financial supports to big exporting firms, lowering the inspecting and quarantining expenses, reinforcing the management of the pesticides and animal drugs and preventing the diseases of plants and animals; regulating the export rules to improve the exporting environments; setting up a precaution institution for agricultural exports; enhancing communicating with the international agencies and foreign governments to remove the unreasonable TBT. It's also pointed out that the best way to overcome TBT depends on the promotion of technological and economic levels.

However, this book is only to provide an analytical framework for evaluating the impacts of TBT in view of Economics. It has been a consensus that the TBT in agricultural trade are not simply the economic affairs to some extent for they are quite easily driven by non-economic factors such as political groups in home and abroad.

主要缩略语

BSE——Bovine Spongiform Encephalopathy 疯牛病

CODEX——Codex Alimentarius Commission 食品法典委员会

EU——European Union 欧盟

FAO——Food and Agriculture Organization of the United Nations 联合国粮农组织

GATS——General Agreement on Trade in Services 服务贸易总协定

GATT——General Agreement on Tariffs and Trade 关税与贸易总协定

GIs——Geographical Indications 地理标识

GMOs——Genetically Modified Organisms 转基因生物体

GMP——Good Manufacturing Practices 良好生产制造规范

HACCP——Hazard Analysis Critical Control Point 危害分析关键控制点

HNIS——Harmful Non-Indigenous Species 非本土有害物种

IPPC——International Plant Protection Convention 国际植物保护公约

NAFTA——North American Free Trade Agreement 北美自由贸易协定

NTB——Non-tariff Trade Barrier 非关税贸易壁垒



OECD——Organization for Economic Cooperation and Development
经济合作和发展组织

OIE——Office International des Epizooties (International Office of
Epizooties) 国际兽疫组织

PPM——Production and Processing Methods 生产与加工方法

PRA——Pest Risk Assessment 有害生物风险评估

SPS——Sanitary and Phytosanitary 卫生和植物卫生(动植物检疫)

TBT——Technical Barriers to Trade 技术性贸易壁垒

TRIPS——Trade-related Aspects of Intellectual Property Rights 与贸易相关的知识产权

UNCTAD——United Nations Conference on Trade and Development
联合国贸易与发展大会

USDA——United States Department of Agriculture 美国农业部

WTO——World Trade Organization 世界贸易组织

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