Trade Impacts of Voluntary Quality Standards for Livestock Products

by

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Introduction

Many trade economists have predicted that technical barriers to trade will become increasingly important as nations reduce tariffs and dismantle non-tariff barriers to trade in food and agricultural products. Almost exclusively, the analyses of these technical barriers to trade have considered only those barriers laid down by governments to "restrict imports of products that fail to meet a country's health, quality and environmental standards . . ." (Roberts, Josling and Orden, 1999, p iii)

Standards, as defined by Roberts, Josling and Orden and others, are "a technical specification or set of specifications related to characteristics of a product or its manufacturing process." (p. 3) Standards are often a legislated or a regulatory technical requirement laid down by national governments, but they may be developed and voluntarily implemented at any stage in a value-added chain, or across several stages in a supply chain. There is growing evidence that voluntary standards, such as food quality and safety assurance schemes that become standard business practice, are increasingly important to trade. Collective quality marks and place names, common in Europe, such as the French *Label Rouge* and the Bavarian *Qualität aus Bayern - Garantierte Herkunft*, are, in effect, quality assurance schemes meant to ensure traditional production methods and the integrity of traditional or regional products. Recent proposals include establishment of international organizations to certificate production to *kosher* and *halel* religious standards.

These labels and corresponding quality assurance schemes have increased in number and coverage for two main reasons. First, producers and processors see these schemes as an effective way of differentiating their output from foreign competition. They find it easier to develop and to implement voluntary standards than to successfully lobby for legislative or administrative technical requirements. Second, tacit support through generous subsidies is often given development and implementation by national, state and even local governments.

In this paper, we first develop a conceptual framework that is used to describe the provisions of quality assurance schemes in the red meat sector in the United Kingdom. The approach, drawing directly from Bredahl, Northen and Boecker, keys on intrinsic and extrinsic product attributes meant to be affected by the standard and identifies the stage(s) in the value-added change to which the standard is applied. We then report the application of this conceptual framework to the red meat sectors in the United Kingdom. We conclude the paper with some conjectures of the impact of voluntary standards on trade in red meats.

Voluntary Quality Assurance in the United Kingdom

Almost all species of livestock and all regions of the United Kingdom are covered by voluntary quality assurance schemes. Many of the schemes were initiated in the early 1990s, but membership grew slowly until the discovery of the linkage of bovine spongiform encephalopathy (BSE) to its human

counterpart (Creutzfeldt-Jakob disease, or CJD) in the mid 1990s. The continued growth of existing schemes and the development of new ones can be traced to other contributing factors. The UK retail sector is controlled by a few large multiple retailers with a significant proportion of sales as 'own-brand' products. They operate proprietary quality assurance schemes that extend the provisions of the voluntary quality assurance schemes. A requirement for supplying fresh and processed meats to the multiple retailers was that supplies of live animals must come from farms certificated to one of the voluntary quality assurance schemes. In addition to maintaining product standards, requiring membership in a voluntary quality assurance scheme was seen by the retailers as contributing to the 'due diligence' requirement of the 1990 Food Safety Law. All of these factors, coupled with consumer demand for extrinsic process attributes, meeting animal welfare requirements, for example, have led to almost universal application of voluntary quality assurance standards in the UK red meat sector.

Quality assurance schemes aim to communicate to customers that particular attributes of a product have been positively affected. Some operating practices may jeopardize the integrity of the scheme. This problem arose in the administration of the Farm Assured British Beef and Lamb (FABBL) as it allowed inspections to be carried out by participants in the supply chain. The credibility of the scheme was questioned and only by introducing independent, and more stringent, inspections have confidence in the scheme been restored.

In order to further demonstrate that scheme technical requirements and inspections are credible, an additional tier of monitoring has been developed for the fresh red meat sector. Assured British Meat (ABM), introduced in 1998, acts as an independent certification body for the development of both quality assurance technical requirements and for the formal approval of competent third-party inspection bodies.

Farm level quality assurance schemes include both "generic" schemes, which have been developed with broad public participation, and proprietary schemes developed and operated by food retailing chains and large processing firms. In the livestock sector, separate generic farm-level schemes have been developed for the major livestock species and for the different regions of the UK (i.e., England, Wales, Scotland and Northern Ireland). Generic farm-level schemes may extend beyond the farm level to specify welfare and trace-back requirements when transporting animals to slaughter. Standards have also been developed for trace-back capability through livestock auctions. Process-level schemes often include animal welfare practices and provisions for the slaughter and processing of meat. Many farm-level schemes dovetail with processor level quality assurance schemes to provide integrated quality assurance throughout the supply chain.

In addition, the major food retailers have implemented "proprietary" quality assurance schemes used in the production of own-label products. All proprietary schemes require their members to be a member of one of the generic farm-level schemes, but specify a variety of additional requirements, such as carcass specifications, age limits, breed, additional feed constraints and enhanced ability to document the animal's source and how it was produced.

Generic Assurance Schemes

The United Kingdom has witnessed a rapid growth in the number of farm level assurance schemes covering the livestock sector. A generic quality assurance scheme now exists for cattle, sheep, and pigs for each major region of the United Kingdom. The majority of schemes were implemented in the early 1990s, largely in response to food retailers' concerns regarding the due diligence defense for product safety. Membership in the programs jumped significantly following the BSE crisis in March 1996, and has been maintained at these higher levels since, as processors and retailers increasingly required products from farms adhering to these programs. For example, membership in Farm Assured British Beef and Lamb (FABBL) and other schemes became a de facto mandatory requirement of major processors, who were in turn responding to pressure from major food retailers, restaurants, and food service.

In 2000, about half of English beef producers and about a quarter of English lamb producers belonged to Farm Assured British Lamb and Beef (FABBL). They produced 76 percent of beef and 51 percent of lambs slaughtered in England. About 30 percent of pig producers belonged to Farm Assured British Pigs (FABPIGS), but they produced about 85 percent of the pigs slaughtered in England.

Table 1. Inventory of Generic Farm Quality Assurance Schemes Operating in the UK Livestock Sector.

Scheme	Regions	Species	Date started	Members
Farm Assured British Beef and Lamb (FABBL)	England and Wales	Cattle and Sheep	1992	18,500
Scotch Quality Beef and Lamb Assurance (SQBLA)	Scotland	Cattle and Sheep	1990	6500
Farm Assured Welsh Lamb (FAWL)	Wales	Cattle and Sheep	1992	6700
Northern Ireland Farm Quality Assurance Scheme (NIFQAS)	Northern Ireland	Cattle and Sheep	1991	7000
Farm Assured British (FABPIGS)	England and Wales	Pigs	1996	3000
Scottish Pig Industry Initiative (SPII)	Scotland	Pigs	1990	200
Northern Ireland Pig Assurance Scheme (NIPAS)	Northern Ireland	Pigs	1999	n.a.

Source: Bredahl, Northen and Boecker (2000)

Generic processor-level assurance schemes in the fresh meat supply chain have existed for a similar length of time as the farm assurance schemes. While proprietary quality assurance schemes require participation in a farm-level assurance scheme, membership in a processor-level scheme is not de facto mandatory. Generic processor-level schemes are used more widely when the processed meat is sold through other supply channels such as specialist butchers or restaurants and food service. However, 'Specially Selected Scotch' meat (through the SQBLA and GSQMS schemes) is increasingly being seen in supermarkets.

The provisions of the Scotch Quality Meat Suppliers Scheme are reported in Table 2. The rightmost five columns reference the stages in the processing chain: F - farm, P - processor, and R - retail. The other columns indicate transport from one stage to the next. The presence of a tick mark indicates the

Table 2. Provisions of the Scotch Quality Meat Suppliers Scheme.

Attributes	Provisions	F	T	P	T	R
Process						
Animal Welfare	Animals must be unloaded promptly.		T	T		
	Pens, gates and walkways must be designed to minimize stress.			T		
	Animals must be penned in the groups they were transported in.			T		
	Animals must have access to adequate clean water and feed when necessary.			T		
	Slaughter: animals must be slaughtered humanely and with minimum of distress.			T		
Traceability	Animals must come from SQBLA farm assurance Scheme.	T	T	T		
	Animals must be penned in groups they were transported.		T	T		
	After slaughter, sides must be clearly identified.				T	
	Precise and up-to-date records must be maintained.	T	T	T	T	
Food Safety						
Pathogens/ Toxins	Product labels of retail packs should carry full instructions for domestic storage					T
	Processing: carcass must be dressed in accordance with official specifications. Brain, spinal cord etc. must be removed.			T		
	Chilling procedure must ensure that first 10 hours of slaughter the muscle temperature remains above 10°C.			T		
	Cutting must occur in clean, hygienic conditions and be quick enough to avoid contamination from micro-organisms.			T		
Sensory						
Taste	Packaging must not affect organoleptic characteristics of the meat. Specified carcass characteristics according to EU standards.			T	T	T
Tenderness	If sides are to be aitch bone hung this must be done within one hour of stunning.			T		
Color	Fat must be firm and white; muscle must be good color; muscle and fat must be free from bruising and blood splash			T		
Value/Functional						
Size	Specified carcass characteristics according to EU standards.			T		
Convenience	When deboning all major tendons must be removed and the joints trimmed to remove excess seam fat, exposed blood vessels, glands and blood staining			T		

Source: Bredahl, Northen and Boecker

stage to which the listed provisions apply. In additional to affecting several process attributes, the scheme convenes to consumers the presence of several process attributes that address animal welfare and traceability. Several requirements of the scheme are meant to address consumer concerns with animal welfare and to provide the ability to trace animals to the farm of origin. Several requirements at the processing and retail stages are meant to affect sensory and organoleptic product characteristics.

Proprietary Farm Assurance Schemes

Many food retail chains demand livestock that have come from farm assurance scheme members. In addition, many chains also run their own (proprietary) farm-level schemes, which go well beyond the requirements covered in the generic quality assurance schemes. There are several reasons why this has occurred:

- generic schemes' requirements do not fully meet the due diligence requirements of food retailers;
- food retailers are able to gain competitive advantage by developing additional quality requirements, such as carcass classification and breed;
- by closer cooperation with both processor and farmer, the food retailer is guaranteed a more consistent and stable supply of meat.

The benefits to the farmer of joining one of these schemes appear to be either a premium for his stock, a more stable price, and/or a more stable supply channel. Table 3 gives an overview of the requirements of these schemes for beef for five British food retailers. These five retailers account for more than 60 percent of food sales and more than 70% of meat sales in the United Kingdom (USDA).

Market and Trade Effects of Quality Assurance Schemes

The quality assurance schemes considered here may impact domestic firms and markets, as well as trade. Market and economic impacts will depend on the provisions and credibility of the scheme, the market structure of the national food system, as well as consumer demand for the attributes targeted by the schemes.

Domestic Market Effects

Domestic firms—producers, processors, and retailers--may be affected both changes in the direct costs of complying with and maintaining the required scheme standards and in terms of the transaction cost. The effectiveness of the scheme's requirements and inspections will determine likely production cost changes for the supplier to and the customer of a scheme. A credible quality assurance system may reduce transaction costs, particularly the costs associated with searching and screening for suitable customers or suppliers, in negotiating the terms of a contract, and monitoring and in enforcing the terms

of the contract. Quality assurance schemes may also provide a price from the provision of an extrinsic cue of production practices, as well as the intrinsic attributes of the product.

The development, operation, and interaction of voluntary food quality assurance schemes will be an increasingly important determinant of the competitiveness of agricultural and food industries through their effects on production, transactions costs, and prices. Quality assurance schemes may convey a competitive advantage to domestic producers covered by the program. For example, all of the large retail food chains in the United Kingdom require farm assured livestock. Clearly, in order to source this primary market, quality assurance scheme membership has become de facto mandatory, conveying an advantage to suppliers participating in the schemes, and disadvantaging those who do not. These schemes may come to convey the same advantage for their members as other national systems that aim to create a competitive advantage for some domestic producers based on the sensory attributes of food, or even on the location of production, such as that used for wine and other products.

Trade Effects

The quality assurance schemes could have important impacts on trade in food products. Providing a product attribute that closely matches intermediate customer or final consumer demands may provide a competitive advantage to domestic producers and processors.

The trade impacts of food quality assurance schemes will depend on a complex set of factors. Ultimately, the impact depends on the value customers place on particular quality attributes and companies' relative ability to deliver them. The trade impact will also depend on whether the standards are mandatory or voluntary, and whether they are adopted at the national or European Union level.

Domestic customers' specifications may act to reduce the competitiveness of foreign suppliers, if not block imports entirely. By requiring that imports contain the same set of attributes as provided by products produced through domestic quality assurance schemes, trade could be blocked. Foreign suppliers may not have easy access to required certification procedures, imposing an enormous cost disadvantage relative to domestic producers. Or, foreign suppliers may simply be unable to produce products with the required set of attributes. For example, a required attribute that production take place in a particular region of a country would absolutely disadvantage foreign producers. This type of trade barrier is likely to become more prevalent for importers into the United Kingdom as domestic customers increasingly insist that technical requirements in schemes, and inspectors of these requirements, are accredited to national or EU-level standards (Henson and Northen, 1998).

Alternatively quality assurance schemes could have a positive effect on trade by establishing a set of clearly defined and readily available performance standards (like ISO 9000 standards) that, by reducing transaction costs, facilitate commerce between countries. For this to occur, schemes would need to exist in each country, and foreign customers would have to accept the technical requirements and inspections of foreign schemes.

Taking the example of the FABPIGS farm-assurance scheme, several trade effects are suggested for countries exporting pork to the United Kingdom. The demand for farm assured pigs (and other livestock) with animal welfare and trace-back attributes in the United Kingdom is well developed. Many retail food chains (the likely buyers of most imported meat) demand farm assured livestock, hence quality assurance schemes such as FABPIGS have become de facto mandatory for supplying the primary retail market. Although retail food chains may be prepared to accept pork from comparable schemes in other countries, the animal welfare and trace-back elements of such schemes are likely to have been developed for their own domestic market and may therefore need significant revision to satisfy the UK market. In addition, the mechanism by which the foreign scheme is inspected may not be sufficiently rigorous. Any revision to their technical requirements or inspection procedures will result in additional expense for foreign suppliers, which in turn may affect their relative competitiveness. In the case of pork, the costs of compliance with UK customers' demands are not likely to be prohibitive for all foreign suppliers. More likely, discrimination between foreign suppliers will occur, as those countries with welfare and trace-back standards similar to those in the UK will incur lower costs of meeting UK standards (for example the Netherlands and Denmark).

On the positive side, however, where foreign schemes are acceptable to UK buyers, the presence of the quality label (an extrinsic cue) should be sufficient to indicate the necessary quality and/or safety of the meat and allow for reduced transaction costs of UK buyers. This in turn may encourage a greater trade of meat between countries.

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