CHOICES
The magazine of food, farm, and resource issues
4th Quarter 2004
A publication of the American Agricultural Economics Association

Country-of-Origin Labeling and the Beef Industry

David P. Anderson and Oral Capps, Jr.

Country-of-origin labeling (COOL) was probably the most contentious issue to come out of the 2002 farm bill. This issue of *Choices* features COOL as one thematic contribution. Some agricultural and consumer advocacy groups, notably US cow-calf producer and fruit and vegetable grower and shipper associations, have argued for legislation that would require suppliers to provide consumers with country-of-origin information about food products. Opponents to COOL—in particular, US cattle feeder and hog finishing operations, meat packers, processors, and retailers, have countered that the costs of labeling, recordkeeping, and operating procedures would be extremely burdensome. Congress amended the Agricultural Marketing Act of 1946 and mandated COOL for beef, lamb, pork, poultry, fish, and other agricultural commodities as part of the Farm Security and Rural Investment Act of 2002. Initially, according to this act, COOL was to be put into operation by September 30, 2004. However, in response to much criticism, Congress agreed to delay the implementation of COOL until 2006. This delay applied to meats, produce, and peanuts, but not to farm-raised and wild-caught fish. Arguments over its implementation and start-up dates continue at this time, keeping COOL a hot issue.

Interestingly enough, the economic impacts of COOL for the affected commodities had been studied very little, if at all. There was no information on the benefits of COOL; it was not clear whether consumers would pay a premium for the information. It was assumed by proponents that, of course, consumers were clamoring for that information and would pay more for it. There were no estimates of COOL costs, but costs are heavily dependent on implementation requirements, which were not known until the USDA released a final rule. Cost estimates that surfaced after the farm bill was passed depended on assumptions about how to interpret the law. COOL may be a good example of supporting and passing a law that sounded good at the time without really knowing what the benefits and costs were going to be. Given the continued controversy surrounding COOL, this issue of *Choices* pulls together current research on costs, benefits, demand shifts, willingness-to-pay (WTP) issues, and a look ahead at potential industry changes.

In this issue of *Choices*, we examine who will bear the costs of COOL in the beef, pork, and poultry sectors; the demand shifts needed for those engaged in the beef industry to be no worse off under COOL; the premium, if any, consumers are willing to pay for COOL-labeled meat; and the potential impact of COOL on the vertical coordination/vertical integration strategies in the beef industry. Emphasis is placed on the impacts of COOL associated with the beef industry. Contributors to this theme are Gary Brester, John Marsh, Joseph Atwood, John Anderson, Wendy Umberger, Ernie Davis, Dan Hanselka, David Anderson, and Oral Capps, Jr., respectively. We also wish to recognize the following reviewers whose comments greatly improved the content and readability of each of the papers: Dillon M. Feuz, Chris Bastian, Janet Perry, Clem Ward, Ted Schroeder, and John VanSickle. Any remaining omissions or errors are the sole responsibility of the contributors and editors.

Articles in this Theme:

CHOICES
The magazine of food, farm, and resource issues
4th Quarter 2004
A publication of the American Agricultural Economics Association

Who Will Bear the Costs of Country-of-Origin Labeling?

Gary W. Brester, John M. Marsh, and Joseph Atwood

Several studies have attempted to quantify the expected costs of COOL (Davis, 2003; Hayes & Meyer, 2003). Annual cost estimates for the beef industry range from $200 million to $6.4 billion and from $20 million to $1 billion for the pork industry. Proponents of COOL argue that most of the larger cost estimates are overstated. They also emphasize results of experimental auctions and surveys that suggest some consumers may be willing to pay a premium for beef that has been labeled by country-of-origin. Conversely, others argue that although some consumers may be willing to pay for country-of-origin labeling, they may not have to pay for any of it, given that the majority of beef and pork products are of domestic origin (Plain & Grimes, 2003). Thus, imported meat products could sell at a discount rather than domestic products commanding a premium. In addition, the US Department of Agriculture (AMS, 2003) found "little evidence that consumers are willing to pay a price premium for country-of-origin labeling" (p. 50) and that "estimated benefits associated with this rule are likely to be negligible" (p. 49).

Meat suppliers, retailers, and restaurants can voluntarily choose to label meat products by country of origin. Because such activity currently occurs only on a small scale, one might argue that market evidence indicates the costs of country-of-origin labeling exceed the benefits. However, one also could argue that voluntary country-of-origin labeling does not occur because benefits and costs of labeling may accrue at different levels in the marketing channel. Furthermore, if consumers do not trust the accuracy of voluntary labels, then adverse selection occurs as a result of asymmetric information. Thus, country-of-origin labeling benefits may only accrue if labeling is mandatory. In the beef and pork industries, market forces cause increases in marketing and processing costs to be distributed across market levels. Thus, the incidence of COOL costs depends primarily on relative demand and supply elasticities at each level of the marketing chain. Furthermore, changes in the well-being of producers and consumers are best estimated by considering changes in producer and consumer surplus.

This article reports estimates of short- and long-run changes in market prices and quantities of meat and livestock in the beef, pork, and poultry sectors that would result from the implementation of COOL. We develop a type of economic model that incorporates estimated COOL costs, accounts for interrelationships along the marketing chain for each meat sector, and allows for substitutability among meat products at the consumer level. The model is used to simulate price and quantity adjustments to COOL cost shocks and the impact of potential demand increases that might be induced by COOL. In addition, we estimate cumulative changes in producer welfare at each level of the marketing chain and consumer welfare at the retail level to determine the effects of COOL on consumers and livestock and meat producers.

Evolution of Country-Of-Origin Labeling

Country-of-origin labeling is mandated for most products imported by the United States under section 304 of the 1930 Tariff Act. However, several agricultural products, including livestock (but not processed livestock products) and several "natural" products (e.g., some fruits, nuts, and vegetables) are included on a "J" list of commodities exempt from existing US country-of-origin labeling requirements. Country-of-origin exempt products are generally combined with similar domestic products during processing and marketing (e.g., domestic and imported beef carcasses). For nonexempt products, current country-of-origin labeling legislation requires listing the source (country) of imported products through the marketing system until purchased by a final consumer.

The 2002 Food Security and Rural Investment Act added a new subtitle (Subtitle D—Country of Origin Labeling) to the Agricultural Marketing Act of 1946. The subtitle mandated voluntary COOL on September 30, 2002 and mandatory COOL by September 30, 2004. Unprocessed fresh, frozen, and ground beef and pork will be required to be labeled by country of origin, but poultry products, delicatessen food items, processed foods, restaurants, food services, and small retailers (those with less than $230,000 of annual sales) will remain exempt. Recently, Congress approved a two-year delay for COOL implementation.

Background on US Meat and Livestock Imports

The United States imports feeder cattle from Mexico (which are subsequently finished in US feedlots), trimmings and ground beef from Australia and New Zealand, and a mix of high-value muscle cuts, manufacturing/trimming beef, fed and cull slaughter cattle, and cattle carcasses from Canada. Over 75% of slaughter cattle imports have been grain-fed. Imported beef is inspected and must meet food safety standards equivalent to that for domestically-produced beef products. Beef imported as live fed cattle or as carcasses is eligible for US Department of Agriculture quality grades. In 2002, beef imports from all sources represented 16.9% of total US beef supplies. In 2002, 51% of all beef imports were trimming and manufacturing grade beef which is subsequently ground into hamburger. Live cattle imports (on a carcass weight basis) from Canada represented approximately 28% of US beef imports in 2002.

In 2002, the United States imported approximately 1.1 billion pounds of pork, which represented about 5.2% of total US pork supplies. Over 80% of these imports originated in Canada. In addition, the United States imported 5.7 million head of hogs and feeder pigs, which represents about 5.7% of US hog slaughter. Almost all hog imports originated in Canada.

The US poultry industry is the world's largest producer and exporter of poultry meat. In 2002, US poultry meat (broilers, other chicken, and turkey) exports were about 14.5% of domestic poultry supplies. In 2002, imports amounted to 16 million pounds, or less than 0.5% of domestic production. US consumption of poultry meat (broilers, other chicken, and turkey) is considerably higher than either beef or pork consumption, but less than total red meat consumption. However, the United States imports only small amounts of poultry products.

Modeling Strategy

An economic displacement model was developed assuming that COOL imposes additional marketing costs on suppliers at each market level (for a complete discussion of the model, see Brester, Marsh, & Atwood, 2004). The model is based on supply and demand relationships in the beef, pork, and poultry industries using actual quantities produced and supply and demand elasticities. These costs are generated by increased commodity segregation, record keeping, verification, labeling, and certification. The beef marketing chain consists of four distinct sectors: retail (consumer), wholesale (processor), slaughter (cattle feeding), and farm (feeder cattle). The pork marketing chain is more integrated than the beef sector; therefore, we consider demand and supply relations for only three sectors: retail, wholesale, and slaughter (hog feeding). The poultry sector is highly integrated so only the retail and wholesale sectors are considered.

Estimates of COOL Costs

The costs of COOL costs at each level of the beef and pork industries were obtained from Sparks Companies (2003). Although these estimates are smaller than those suggested by Davis (2003) and larger than those suggested by Vansickle et al. (2003), they are similar to recent USDA estimates. Sparks Companies estimate that COOL will result in a $1.653 billion annual increase in operating costs to the beef industry. Furthermore, they estimate that these cost increases would be distributed as $805 million to the retail sector, $500 million to the packer (wholesale) sector, $150 million to the feedlot (fed cattle) sector, and $198 million to the cow/calf (feeder cattle) sector. Using 2002 average prices and quantities for each market level, these costs estimates represent the following percentage increases in costs relative to total value: 1.24% at the retail level, 1.71% at the wholesale level, 0.50% at the fed cattle level, and 0.96% at the feeder cattle level.

Sparks Companies estimate that COOL will generate $713 million of additional costs for the pork industry, with $263 million occurring at the retail level, $350 million at the wholesale level, and $100 million at the hog finishing level. Based on 2002 average prices and quantities, these cost increases represent the following percentage increases relative to total value at each level: 0.66% at the retail level, 3.41% at the wholesale level, and 1.08% at the hog fin-

ishing level. These percentage increases generate vertical shifts of their respective supply functions. Currently, poultry is exempt from COOL legislation. Therefore, we assume that no additional costs are incurred by the poultry industry as a result of COOL.

Simulation Results

Price and Quantity Effects of COOL Assuming No Change in Consumer Demand

We initially simulate short- and long-run impacts of the above percentage cost changes assuming that COOL has no effects on consumer demand for beef and pork. Beef, pork, and poultry prices increase at the retail and wholesale levels, and feeder cattle prices increase at the farm level, but all beef and pork quantities decline. These results are theoretically consistent, because additional marketing costs increase farm-retail price spreads. Poultry prices and quantities increase because poultry demand increases as consumers substitute away from relatively more expensive beef and pork products.

Economic studies often include impacts stated in terms of economic welfare or producer and consumer surplus. Consumer surplus simply means the benefits consumers get from a product over what they paid for it. Similarly, producer surplus is the revenue producers receive over their production costs.

In the absence of demand increases, producer surplus declines at all levels of the beef and pork industries; beef and pork producers are clearly worse off, economically, without a demand increase to pay for the costs of compliance. Increased poultry demand generates increases in producer surplus at every level of the poultry industry. Across all meat sectors, retail level consumer surplus declines.

It is appropriate to consider *cumulative* changes in producer surplus as an industry adjusts from a short-run to a long-run equilibrium. To simulate these cumulative effects, we assume that it takes 10 years (the average length of a cattle cycle) to adjust from the short run to the long run in the meat industry. We report the present value of these changes in producer and consumer surplus assuming a 5% discount rate. Over the 10-year adjustment period, producer surplus declines at every market level of the beef and pork industries. In addition, retail level consumer surplus declines in both the beef and pork industries. Although the poultry industry gains producer surplus and retail-level consumer surplus, the entire meat industry loses producer surplus and retail-level consumer surplus if COOL does not increase consumer demand for beef and pork.

Price and Quantity Effects of COOL Resulting From Changes in Consumer Demand

A second simulation was conducted to determine the COOL-induced beef and pork demand increases required so that farm-level cattle and hog producers do not lose cumulative (present value) producer surplus over the 10-year adjustment period. The model predicts that one-time permanent increases of 4.05% in beef demand and 4.45% in pork demand would be necessary for the present value of gains and losses in the feeder cattle and hog production sectors to be zero. Most livestock prices increase in the short run, and all prices and quantities increase in the long run.

A Discussion of the Simulation Results

The above simulation results are contingent upon our selection of COOL costs for each market level of the beef and pork industries. Overall, the price, quantity, and producer surplus changes in the livestock industries are relatively small; however, COOL-induced marketing costs also are small relative to revenues generated at each market level. Furthermore, if actual COOL costs are smaller or larger than those used in this simulation, the estimates of price, quantity, and producer and consumer surplus changes will be proportionally smaller or larger. The critical point of our research is that livestock producers lose producer surplus if the implementation of COOL fails to increase consumer demand for domestically-produced beef and pork products. If one-time permanent demand increases do occur, they need to exceed 4.05% for beef and 4.45% for pork if the lowest levels of the beef and pork production sectors (feeder cattle and hog producers) are to be no worse off in the long run.

It should be noted that COOL applies only to beef and pork muscle cuts and ground products sold through grocery stores. Approximately 52% of beef volume is sold through retail outlets. Therefore, an industry-wide 4.05% increase in beef demand would have to be generated by approximately one half of the beef market.

Concluding Comments

If COOL-induced demand increases do not occur, then all sectors of the beef and pork industries lose producer surplus. In addition, retail beef and pork consumers lose consumer surplus. To determine the ultimate effects of COOL on producer and

retail level consumer surplus, the discounted present value of cumulative effects of producer and consumer surplus gains and losses should be calculated over a sufficiently long period to allow for gradual change in livestock and meat supplies. Retail beef and pork demand would have to experience one-time permanent increases of 4.05% and 4.45%, respectively, if feeder cattle and hog producers were to be no worse off than before COOL. Because COOL applies only to beef and pork muscle cuts and ground products sold through retail outlets, this sector of the beef and pork industries must generate the entire demand increase. These results are, of course, specific to our assumptions regarding the size and distribution of marketing costs resulting from the implementation of COOL.

The poultry industry is the only unequivocal winner of the implementation of COOL. We assumed that the poultry industry's cost structure was unaffected by COOL because poultry is currently excluded from COOL legislation. Consequently, increased COOL marketing costs in the beef and pork sectors that increase retail beef and pork prices encourage consumers to substitute towards poultry products. This demand increase causes subsequent increases in poultry prices, quantities, and producer and consumer surplus in the poultry industry.

COOL is receiving a chilly reception by some market participants primarily because of the uncertainty regarding potential increases in demand and costs resulting from the legislation. It is interesting to note that the most vocal proponents of COOL have been groups primarily representing feeder cattle producers. The strong support of COOL provided by some feeder cattle producers indicates that those producers expect COOL-induced beef demand increases to more than offset additional marketing costs. They may be unaware that the incidence of both COOL costs and benefits will largely be determined by relative supply and demand elasticities among meat industries and market levels.

For More Information

Brester, G.W., Marsh, J.M., & Atwood, J.A. (2004). Distributional impact of country-of-origin labeling in the U.S. meat industry. *Journal of Agricultural and Resource Economics*, *29*(2), 206-227.

Brester, G.W., & Smith, V.H. (2000). Beef at the border: Here's the beef. *Choices*, *2000*(2), 28-32.

Davis, E.E. (2003). *Country of origin labeling.* Available on the World Wide Web: http://livestock-marketing.tamu.edu/COOL.html.

Hayes, D.J., & Meyer, S.R. (2003). *Impact of mandatory country of origin labeling on U.S. pork exports* (white paper). Ames, IA: Iowa State University.

Plain, R., & Grimes, G. (2003). *Benefits of COOL to the cattle industry* (AEWP 2003-2). Columbia, MO: University of Missouri Department of Agricultural Economics.

Sparks Companies, Inc. (2003). *COOL cost assessment: Prepared by the Sparks/CBW Consortium*. Memphis, TN.

United States Department of Agriculture Agricultural Marketing Service. (2003). *Mandatory country of origin labeling of beef, lamb, pork, fish, perishable agricultural commodities, and peanuts* (proposed rule no. LS-03-04). Available on the World Wide Web: http://www.ams.usda.gov/cool.

VanSickle, J., McEowen, R., Taylor, C.R., Harl, N., & Connor, J. (2003). *Country of origin labeling: a legal and economic analysis*. International Agricultural Trade and Policy Center Paper PBTC 03-5. Gainesville, FL: University of Florida.

Gary Brester and John Marsh are professors and Joseph Atwood is an associate professor in the Department of Agricultural Economics and Economics at Montana State University.

CHOICES
The magazine of food, farm, and resource issues
4th Quarter 2004
A publication of the American Agricultural Economics Association

Demand Shifts in Beef Associated with Country-of-Origin Labeling to Minimize Losses in Social Welfare

Daniel D. Hanselka, Ernest E. Davis, David P. Anderson, and Oral Capps, Jr.

A primary concern of the COOL program are the costs incurred by retail chain stores and distributors, meat packers and processors, and others in the supply chain. Since the release of the mandatory COOL program in the 2002 Farm Security and Rural Investment Act, a number of individuals and organizations have put forth estimates of the additional costs associated with the implementation of the mandatory COOL program. The various studies pertaining to the implementation and compliance of COOL have a broad range of cost estimates for numerous covered commodities. This article provides a cost assessment, based on survey results, for implementing COOL regulations for the beef industry, and an estimate of the change in demand for retail beef, wholesale beef, fed cattle, and feeder cattle needed to negate the increase in costs of implementing mandatory COOL.

The literature indicates that estimates of the costs to the beef industry range from $200 million to $5.9 billion dollars, although the upper estimate appears to be unduly large (see Hanselka, 2004, for details). But, in arriving at these cost figures, none of the studies used an in-depth, structured survey methodology of industry participants. This research collected financial and production data and information from surveys of prepared questions administered to various industry representatives in order to determine estimates of incremental COOL costs to the beef industry. The surveys were developed to collect actual company cost estimates and production data that would result from the implementation and compliance of COOL. Additional company costs regarding COOL implementation included both incremental and capital costs associated with identification, segregation, preservation, management, operational, labeling, labor, and other compliance and enforcement costs. The survey included questions about identification and distribution changes that could occur as a result of the implementation of COOL, such as segregated production lines by origin or elimination of foreign origin beef processing.

Surveys were sent to the top 30 US cattle feeders and beef packers, as identified by *Cattle Buyer's Weekly*, an industry newsletter. The 75 largest grocery retailers, as identified by industry newsletters, also were surveyed. The surveys were sent out by registered mail to company officials identified as having operational knowledge of compliance costs. Follow-up calls were made to ask for help with the research, and additional survey copies were provided. Response rates were 50% for the stocker and feedlot operators, 30% for packers, and 11% for retailers.

The questions were developed by economists specializing in livestock and meat economics and meat scientists specializing in meat processing. The survey questions were pretested with several industry participants; adjustments were made to the questions based on their responses in order to make the survey more useable and answerable.

The retail chain store and distributor level costs for the beef supply chain were estimated to be approximately $0.08 per pound of beef sold to reconfigure their meat departments to maintain product identity, to maintain required record-keeping at individual stores, and to place COOL labels on beef items in the meat case. An estimated $16.99 per head was calculated for meat packers and processors to reconfigure their slaughter and fabrication departments to maintain segregation and identity of cattle into boxed beef. Costs for the cattle feedlot segment are estimated at $12.94 per head for feeding segregation, data storage, and costs associated with tracking cattle. Finally, it is estimated that the additional costs of implementing COOL for cow-calf operators, cattle backgrounders, and

cattle stockers were about $3.89 per head for identifying the movement of cattle and starting the passport transactions up to delivery of the animal to finishing. These were calculated as weighted averages, by volume, of the survey respondents.

Importantly, the cost estimates at each level of the marketing channel varied noticeably by firm. This variation is due, in part, to the specific management and production practices of the company and whether that particular company handles only foreign beef products or cattle, only domestic beef products or cattle, or a combination of foreign and domestic beef products.

We apply the estimated costs to actual beef industry production levels in 2003 in order to estimate the total costs incurred at each level of the supply chain in the beef industry. Using consumption figures of 18.9 billion pounds (retail weight) of beef in 2003 and assuming 52% was sold at retail, total incremental costs of the mandatory COOL program accruing to retail chain stores and distributors amounted to $818 million. For meat packers and processors, given that 35.5 million head of cattle were slaughtered in 2003, total additional costs added to the meat packing sector amounted to $603 million. Based on 27.6 million head of fed cattle marketed in 2003, total costs to the cattle feeding sector was estimated to be $356 million. Feedlot placements totaled 24.9 million head of calves in 2003, yielding an estimated total incremental cost of $97 million to the cow-calf producer, cattle backgrounder, and cattle stocker segments of the beef industry. For the beef industry as a whole, then, the estimated additional annual costs to satisfy COOL requirements would total $1.9 billion using 2003 production levels. These cost estimates are comparable to those reported in the literature, albeit falling at the upper end of the spectrum.

Aside from estimating the incremental and capital costs accruing to each market level of the beef industry, this research also examined the changes in market demand, price, and overall economic welfare effects of COOL on all participants of the beef industry. Several studies have been conducted examining the market, social welfare, and revenue effects of COOL on the beef, pork, and poultry industries. Unlike previous studies, this research estimates the magnitude of increases in the demand for retail beef, wholesale beef, fed cattle, and feeder cattle needed to offset or negate the induced costs of COOL so that producers and consumers would be no worse off from an economic welfare standpoint. Economic welfare simply means the value consumers get from the product over what they paid for it and the revenue producers get from a product over the costs of producing it.

In order to estimate the necessary demand shifts, a model was developed using elasticity estimates previously published in the literature, as well as actual livestock and beef numbers. The changes in demand and prices are calculated to estimate the amount needed to offset the estimated incremental costs of COOL to leave the quantity moved through the supply chain and the welfare of those engaged in the beef marketing channel unchanged. The purpose for holding the original quantity constant is to determine the magnitude of the demand shift necessary at each marketing level to offset the increased COOL costs. By holding quantity constant, volumes are held constant in each production sector.

Livestock and beef quantities from 2003, elasticities of supply and demand supplied by Brester, et al., and the COOL compliance costs developed in the survey reported above were used to estimate the change in beef demand necessary to make producers and consumers just as well off. The model was solved using an Excel spreadsheet. The advantage of using a spreadsheet is that it allows for sensitivity analysis given varying assumptions on elasticities, quantities, and costs. This type of sensitivity analysis then could be performed using other estimates of costs, elasticities, and quantities for other years.

The results indicate that an increase of 1.2% in beef demand would be necessary for the welfare gains and losses in the retail sector to be zero. An increase in wholesale demand for carcasses of 0.8% would be necessary for the producers and consumers in the wholesale production sector to be no worse off economically. Finally, for fed cattle and feeder cattle markets, the results indicate that increases of 0.56% and 0.24% in demand for fed and feeder cattle, respectively, are necessary to leave welfare effects unchanged.

With this demand shift, retail beef price is estimated to increase by 2.4%. Similar to the retail market, the wholesale beef price is estimated to increase by 1.8%. Fed cattle price is estimated to increase by 1.4% and feeder cattle price to increase by 0.6%.

Whether the economic costs of COOL can be recovered ultimately depends on two factors: (a) the level of marketing and production costs that accrue at all marketing levels of the industry, and (b) the increase in demand at the various marketing levels needed to offset the costs of COOL. Based on this research, the

beef industry costs associated with the mandatory program appear to be large, totaling about $1.9 billion. It would appear, however, that rather moderate shifts in demand at each level of the marketing channel are necessary to offset implementation costs, holding quantities constant. In any large industry like the beef industry, seemingly small shifts in demand can translate into large shifts in revenue. In this case, these results indicate that a 1.2% increase in beef demand at the retail level would offset COOL costs. The necessary demand shift is smaller in this work compared to others in the literature because we look at beef alone, and we hold quantity constant. There is no interaction with pork and poultry where market share has to be recaptured. Holding quantity constant allows beef industry participants to maintain volumes produced. Given apparent increasing demand for beef in recent years, perhaps a one percent increase in demand at the retail level is possible. If so, then the implementation of COOL may not negatively impact those engaged in the beef industry along the marketing channel.

For More Information

Hanselka, D.D. (2004). *Economic impact of country-of-origin labeling in the U.S. beef industry.* Unpublished master's thesis. College Station, TX: Texas A&M University.

Daniel D. Hanselka is an extension associate, Ernest E. Davis is professor emeritus, David P. Anderson is an associate professor, and Oral Capps, Jr. is a professor and Southwest Dairy Marketing Endowed Chair in the Department of Agricultural Economics at Texas A&M University.

CHOICES
The magazine of food, farm, and resource issues
4th Quarter 2004
A publication of the American Agricultural Economics Association

Will Consumers Pay a Premium for Country-of-Origin Labeled Meat?

Wendy J. Umberger

Proponents of mandatory country-of-origin labeling (COOL) of meat argue that COOL would provide US producers with a competitive advantage in the marketplace. They contend that US consumers perceive domestic meat products to be higher quality than imported meat products. Therefore, because of its higher perceived quality, U.S.-labeled meat will garner a premium over imported meat. Advocates of mandatory COOL draw on the results of several recent academic studies to attest that US consumers support and are willing to pay for certified US products. Are the COOL advocates' assumptions regarding the higher perceived quality of US meat and subsequent premiums justified?

Is there Evidence to Support Premiums for Country-of-Origin Labeling of Meat?

Recent studies of US consumers and meat marketers have sought to determine if support exists for a mandatory country-of-origin labeling program for meat sold in the United States. In general, the studies find support for a mandatory country-of-origin labeling program and potential premiums for "Certified U.S." meat products. For example, 93% of Louisiana consumers surveyed supported mandatory COOL of fresh and frozen beef (Schupp & Gillespie, 2001a). The majority of Louisiana meat handlers surveyed also favored a mandatory COOL program; they were particularly supportive if they believed their customers would find the label valuable (Schupp & Gillespie, 2001b).

Three separate studies explore whether US consumers would value COOL by assessing whether consumers would be willing to pay a premium for "Certified U.S." meat. The first willingness-to-pay (WTP) study surveyed 243 Colorado consumers at supermarkets during spring 2002. Colorado consumers indicated that they were willing to pay an average of 38% and 58% more to obtain "Certified U.S." steak and hamburger, respectively (Loureiro & Umberger, 2003). Additionally, the same set of Colorado consumers were asked to indicate their support for a mandatory COOL program, provided it would cost their household a specified amount. Consumers were willing to pay an average of $184 per household for a mandatory COOL program.

The second WTP study on COOL, conducted in Chicago and Denver during summer 2002, used survey procedures and experimental auction methods to determine premiums for COOL (Umberger et al., 2003). In this study, 73% of the consumers surveyed indicated they would be willing to pay average premiums of 11% and 24% for COOL of steak and hamburger, respectively. However, after participating in an experimental auction, only 69% of the same consumers were willing to pay an average premium of 19% for a "U.S.A. Guaranteed" steak over an unlabeled, generic steak. Consumers expressed the following reasons for preferring US guaranteed beef over imported beef: food safety concerns regarding imported meat, a fear of meat from specific countries that had outbreaks of Bovine Spongiform Encephalopathy (BSE, or Mad Cow Disease), a preference for the general information provided by the label, a desire to support US producers, and a belief that the quality of meat from specific countries was better.

The third and most expansive WTP study was conducted in spring 2003 and surveyed households throughout the continental United States via mail. The contingent valuation methods employed in this study were similar to those of Loureiro and Umberger (2003); however, premiums for "Certified U.S." labeling of three different meat products were compared: beef steaks, pork chops, and chicken breasts. The continental US consumers surveyed were only willing to pay average premiums of 2.5–2.9% over the original market price to obtain "Certified U.S." chicken breasts, pork chops, and ribeye steaks (Loureiro & Umberger, in press).

Would These Premiums Actually Exist at the Supermarket?

As mentioned previously, some proponents of COOL interpret the results of these WTP studies to be evidence that premiums would exist at the supermarket for US meat products. Before reaching that conclusion, a number of other factors must be considered. All of the WTP studies utilized common contingent valuation or experimental auction methods, which have been shown to be very useful for determining values for both nonmarket and market goods. However, as with any contingent valuation or experimental research, the results obtained from these studies are estimates of potential values and are dependent upon both the methods used (research design) and the sample of the population studied. The potential for differences in WTP estimates due to elicitation method used is evident by the wide distribution of premiums across studies. The size of premiums for "Certified U.S." or "Guaranteed U.S." meat products decrease as a larger sample of the population is surveyed. The premiums elicited from the more expansive Chicago and Denver sample (Umberger et al., 2003) and the continental US sample (Loureiro & Umberger, in press) are much lower than the premiums obtained from the regional Colorado study (Loureiro & Umberger, 2003).

It is also important to note that the labels and certification methods used to elicit WTP values in the studies mentioned above are likely different than those that would be used in the mandatory COOL program. The WTP studies essentially compare a US product to an unlabeled or generic beef product. The 2002 Farm Bill's COOL provision explicitly states that only animals born, raised, and slaughtered or processed in the United States can qualify for a US country-of-origin label (USDA AMS 2002). Under the current AMS COOL guidelines (released in October 2003), imported beef products from cattle produced entirely (born, raised, and processed) in any country other than the United States would be labeled as "Imported from Country X." However, "blended-origin" meat products such as hamburger, which may contain meat products from multiple countries, would contain a label indicating in alphabetical order the different countries of origin of the meat. Additionally, under these 2003 labeling guidelines, meat produced from "mixed-origin" animals, such as feeder calves imported into the United States from a country such as Mexico and finished in a US feedlot, would be labeled as "From Animals Born in Mexico, Raised and Processed in the U.S.A." (USDA AMS 2003).

Therefore, under a mandatory COOL program, all fresh meat products sold at a supermarket would carry some kind of country-of-origin label. At the retail level, US beef products could potentially be marketed next to beef products from countries such as Canada, Australia, New Zealand, Mexico, and South American countries. How would the perceived quality of US meat compare to meat imported from other countries? Would consumers choose a US product over an imported one? In order to answer this question, it is important to understand the factors influencing the perceived quality of meat.

What Determines Consumers' Perceptions of Meat Quality?

Quality is a rather ambiguous term, meaning different things to different people depending upon their preferences for the various attributes of a product. Consumers tend to use multiple attributes to evaluate the quality of, and subsequently determine their preference for, one food product over another. When evaluating food product quality, consumers use both *intrinsic* and *extrinsic* quality cues. Intrinsic cues are attributes inherent to the product that cannot be changed without changing the physical properties of the product. Extrinsic cues are attributes only related to the physical product. Product attributes are typically further categorized as *search*, *experience*, or *credence* attributes. Search attributes are quality attributes that can be evaluated by the consumer at the point of purchase and prior to consumption. For meat products, color, leanness, and marbling (intramuscular fat) are intrinsic search characteristics. Examples of extrinsic search characteristics include brand name, price, and country of origin (Grunert).

Experience attributes are observable during or following consumption and include the eating quality (texture, juiciness, flavor, and smell) of a meat product as well as food safety (e.g., whether there is an adverse effect immediately following consumption). Credence attributes are quality attributes that the consumer may value but cannot discern when purchasing a product or even after normal use. Process and production attributes, such as country of origin, organic, animal welfare, environmentally friendly, and free-range, are examples of credence attributes. Credible and auditable labeling systems are necessary for verification of credence attributes.

Research on consumers' perceived meat quality suggests that consumers use a multitude of intrinsic and extrinsic search attributes as well as experience and credence attributes

to determine the quality of a product. The relative importance of different types of attributes to consumers differs depending on sociodemographic characteristics and the location of consumers. For example, various segments of the population prefer and are willing to pay more for COOL than others, and the importance of country of origin in a consumer's assessment of perceived value has been shown to differ depending upon the particular country where the study was conducted (Davidson, Schroder, & Bower; Grunert).

Therefore, given the multitude of factors which consumers may use to assess a product's quality, the premiums for COOL and "Certified U.S." meat over unbranded products may be inflated, because consumers were specifically asked to focus only on the country-of-origin attribute rather than on other meat quality attributes, which may be equally (or more) important to consumers. For example, in the contingent valuation studies, consumers were not able to use other extrinsic cues (such as price, brand, and USDA grade) or any intrinsic cues (such as color or marbling) to determine the value of the products.

In evaluating the ability of the premiums elicited in the WTP studies to be good predictors of premiums that might be obtained in the actual marketplace, one should also consider the importance of country of origin and source assurance relative to other experience and search attributes. In each of the three consumer WTP studies, consumers were asked to rate, in terms of importance in their meat purchasing decision, a series of meat product attributes commonly used as meat quality cues. Food safety inspection and freshness were rated as the two most important beef quality attributes in all three studies. Other attributes, such as leanness, color, tenderness assurance, quality grade, and price, generally received higher average ratings than country of origin or source assurance (Loureiro & Umberger, 2003, in press; Umberger et al., 2003).

The results of the aggregate attribute rankings indicate that although some consumers indicate they are willing to pay a premium for the source assurance provided by country-of-origin labels, the premiums would only exist if US beef were perceived to be safer and of higher quality (in terms of non-safety-related meat quality attributes) than beef from other countries. According to the results of a national survey, 80% of the 819 US consumers surveyed believed that food produced or raised in the United States is fresher and safer than food imported from global food sources (Wimberley et al.). Results from the continental US consumer study conducted by Loureiro and Umberger (in press) also indicate that US meat is perceived to be the safest relative to meat from Argentina, Australia, Canada, Denmark, Mexico, and New Zealand. Nonetheless, meat from Canada, Australia, and New Zealand still received an average rating of "safe," but meat produced in Mexico and Argentina was not rated as safe.[1]

In terms of other quality attributes, US meat initially may be perceived to be of higher quality than imported meat. However, some consumers may actually prefer meat from other countries, particularly after experiencing it and being provided with additional labeling information on specific process- and production-related credence attributes. Consider, for example, a beef product labeled as "Certified US corn-fed beef" marketed next to a product labeled as "Certified Australian grass-fed beef." If given the choice, what product would consumers prefer and which one would they potentially pay a premium for?

In blind taste tests, 23%, 17%, and 34% of consumers studied preferred the flavor of, and were willing to pay a premium for, Argentine, Australian, and Canadian beef, respectively, relative to US beef (Umberger et al., 2002; Sitz et al.). The Australian and Argentine beef products used in the taste panel studies were from grass-fed cattle. Most of the beef imported into the United States from these countries is grass-fed, whereas US beef is typically corn-fed. In addition to the flavor attribute, some consumers perceive grass-fed beef to be of higher quality in terms of nutritional content. Consequently, if US consumers view Australian beef to be comparable to US beef in terms of food safety, then consumers who prefer the perceived nutritional benefits and/or taste attributes of grass-fed beef relative to corn-fed beef may consider a US beef product to be lower quality than the Australian product. If they also now have the opportunity at the supermarket to choose between a US beef product and an Australian product,

1. *It is important to note that these surveys were conducted prior to the December 23, 2003 case of BSE (Mad Cow Disease) in Washington State. A separate survey of 1,001 US consumers conducted in January 2004 determined that 85% of those surveyed were knowledgeable of the December BSE case; however, the majority of the knowledgeable consumers indicated that their confidence in the US beef supply remained unchanged (Hallman, Schilling, & Turvey).*

then consumers who find the Australian beef to be of superior quality may actually discount the US product.

Premiums Under a Voluntary vs. a Mandatory COOL Program

A final aspect of a mandatory COOL program that must be considered when determining if retail premiums exist for U.S.-labeled meat products is the market share of US meat products relative to the share of imported meat products. Although the results of the WTP studies suggest a potential premium for U.S.-labeled meat products over unlabeled meat, the premium only exists at the retail level if the quantity of U.S.-labeled meat supplied is less than the quantity demanded. Given the current production capabilities of US producers, the supply of "Certified U.S." meat under a mandatory COOL program would exceed the quantity demanded, and there would be no premiums for "Certified U.S." meat products at the retail level. For instance, in the case of COOL of beef, about 89% of the supply of US beef steaks and roasts would qualify to be labeled as a product of the United States (Plain & Grimes). Therefore, if only 69% of the consumers were willing to pay a premium for US beef (as indicated by Umberger et al., 2003), premiums for US beef would not exist.

Conversely, under a voluntary program, not all retail meat would be labeled with country-of-origin information, and marketers of meat products would be more likely to receive a premium for "Certified U.S." products over a product with no country-of-origin label. We do not mean to imply that under a voluntary program a premium would exist for "Certified U.S." meat, or that all consumers would pay a premium for "Certified U.S." meat products. In the WTP studies discussed previously, not all consumers were willing to pay a premium for COOL. However, there were identifiable segments of consumers that indicated they would be more likely to be willing to pay a premium for "Certified U.S." products. These consumers represent target markets where premiums might exist for "Certified U.S." meat products (Loureiro & Umberger, 2003, in press; Umberger et al., 2003).

An additional and related concern is consumers' interpretation of the COOL program. It appears that a number of the consumers who preferred COOL in the consumer studies interpreted the program to provide them with additional food safety assurances and enough traceability information to allow a meat product to be completely traced back to the farm of origin. Based on how the provision was written in the 2002 Farm Bill, a mandatory COOL program is no more than a food-labeling program and would only allow identification of a meat product's country of origin by stage of production. On the other hand, the guidelines for a voluntary program could specify complete traceback and possibly other credence attributes, further increasing consumers' quality perceptions and possibly creating actual market premiums. Voluntary COOL marketing strategies would only be successful if the labeled product met the consumers' expectations of higher quality and safer meat. Thus, for COOL to be a viable marketing strategy, US meat suppliers would have to continually work to maintain consumers' safety and quality perceptions.

Will consumers pay a premium for COOL meat? Research results indicate that although some consumers indicate they are willing to pay a premium for the source assurance provided by country-of-origin labels, the premiums would only exist if US beef was perceived to be safer and of higher quality (in terms of non-safety-related meat quality attributes) than beef from other countries. So, it remains unclear whether or not premiums would exist for COOL.

For More Information

Davidson, A., Schroeder, M.J.A., & Bower, J.A. (2003). The importance of origin as a quality attribute for beef: Results for a Scottish consumer survey. *International Journal of Consumer Studies*, *27*(2), 91-98.

Grunert, K.G. (1997). What's in a steak? A cross-cultural study on the quality perception of beef. *Food Quality and Preference*, *8*(3), 157-74.

Hallman, W.K., Schilling, B.J., & Turvey, C.G. (2004). Public perceptions and responses to mad cow disease: A national survey of Americans. Rutgers University Food Policy Institute. Available on the World Wide Web: http://www.foodpolicyinstitute.org/docs/summary/madcowsum.pdf.

Loureiro, M.L., & Umberger, W.J. (2003). Estimating consumer willingness to pay for country-of-origin labeling. *Journal of Agricultural and Resource Economics*, *28*, 287-301.

Loureiro, M.L., & Umberger, W.J. (in press). Assessing consumer preferences for country-of-origin labeled products. *Journal of Agricultural and Applied Economics*.

Plain, R., & Grimes, G. (2003). *Benefits of COOL to the cattle industry* (working paper AEWP 2003-2). Columbia, MO: University of

Missouri Department of Agricultural Economics. Available on the World Wide Web: http://agebb.missouri.edu/mkt/cool.htm.

Schupp, A., & Gillespie, J. (2001a). Handler reactions to potential compulsory country-of-origin labeling of fresh or frozen beef. *Journal of Agricultural and Applied Economics*, *33*, 161-71.

Schupp, A., & Gillespie, J. (2001b). Consumer attitudes toward potential country-of-origin labeling of fresh or frozen beef. *Journal of Food Distribution Research*, *33*, 34-44.

Umberger, W.J., Feuz, D.M., Calkins, C.R. & Killinger, K. (2002). U.S. consumer preference and willingness-to-pay for domestic corn-fed versus international grass-fed beef measured through an experimental auction. *Agribusiness: An International Journal*, *18*(4), 491-504.

Umberger, W.J., Feuz, D.M., Calkins, C.R., & Sitz, B.M. (2003). Country-of-origin labeling of beef products: U.S. consumers perceptions. *Journal of Food Distribution Research*, *34*(3), 103-116.

United States Department of Agriculture Agricultural Marketing Service. (2002). *2002 farm bill provisions, subtitle D—country of origin labeling*. Available on the World Wide Web: http://www.ams.usda.gov/cool/subtitled.htm.

United States Department of Agriculture Agricultural Marketing Service. (2003). Mandatory country of origin labeling of beef, lamb, pork, fish, perishable agricultural commodities and peanuts. *Federal Register*, *68*(210). Available on the World Wide Web: http://www.ams.usda.gov/cool/ls0304.pdf.

Wimberley, R.C., Vander Mey, B.J., Wells, B.L., Ejimaker, G.D., Bailey, C., Burmeister, L.L., et al. (2003). *Food from our changing world: The globalization of food and how Americans feel about it.* Available on the World Wide Web: http://sasw.chass.ncsu.edu/global-food.

Wendy J. Umberger is an assistant professor in the Department of Agricultural Economics at Colorado State University.

CHOICES
The magazine of food, farm, and resource issues
4th Quarter 2004
A publication of the American Agricultural Economics Association

Potential Impact of Country-of-Origin Labeling on Beef Industry Structure

John D. Anderson and Darren Hudson

Nothing about COOL has been particularly simple. In fact, COOL provisions represented one of the most vigorously debated elements of the 2002 Farm Bill. Nowhere was the debate over COOL more contentious than within the beef industry.

Among beef industry participants at all levels, arguments over COOL scarcely abated (and probably intensified) after the Farm Bill was passed. Predictably, much of the debate over COOL focused on how much it would cost (and who would have to pay for it). Estimating the costs of COOL became a virtual cottage industry—with estimates varying dramatically depending on assumptions related primarily to record keeping and traceability requirements. A good deal of debate also centered on the potential benefits of COOL in terms of increased consumer demand for beef. Here, as with cost estimates, it was very difficult to arrive at a consensus. In early 2004, due at least in part to the ongoing debate related to COOL costs and benefits, Congress added an amendment to the 2004 Appropriation Act that delayed mandatory COOL for an additional two years on all covered products except for fish and shellfish (for which mandatory COOL took effect as scheduled on September 30, 2004).

The beef industry's focus on COOL costs is understandable. The industry currently is ill equipped to provide the level of traceability that the USDA has consistently indicated the labeling program will require. Sorting out how much it will cost to make compliance possible is very important. But it is also somewhat surprising that an industry which has in the past seemed almost preoccupied with structural issues (e.g., packer concentration and captive supplies) has virtually ignored the potential market structure implications of COOL legislation.

One vital element of the COOL legislation (as it is currently written) is that retailers are responsible not only for making sure covered products are labeled, but also for documenting that labels are accurate. This situation means that information on country of origin will have to be communicated clearly along the supply chain. In the beef industry, where the supply chain is rather long and complex, with ownership of cattle often changing several times along the way, this task may be a real challenge. One logical way to deal with that challenge is through contracting, or perhaps other forms of coordination.

In this article, we discuss how country-of-origin labeling is likely to affect vertical coordination/vertical integration strategies in the beef industry. In so doing, we seek not only to inform the debate over COOL, but also to place COOL within the larger context of industrial organization issues that have been the focus of much scrutiny in the beef industry over the past twenty years. Considering COOL in this larger context may lead to a different policy outcome than from a myopic focus on the costs and/or benefits of this (or any other) individual program.

Vertical Coordination in the Cattle Industry

The issue of vertical coordination in the cattle industry has been the subject of intense debate for many years. The primary focus of this debate has been on the use of market power and "captive supplies" and their effect on cash market prices. The USDA Grain Inspection, Packers and Stockyards Administration (GIPSA) defines *captive supplies* as any cattle that are under the control of the ultimate buyer fourteen days or more prior to slaughter. The three main categories of captive supply are packer-fed cattle, cattle purchased through forward contracts, and cattle purchased under marketing agreements.[1]

Figure 1 reports GIPSA captive supply data from 1999 to 2002 (the latest year reported). Over that period of time, captive supplies increased from 32.4% to 44.4% of total steer and heifer slaughter.[2] Virtually all of that increase occurred through the use of marketing agree-

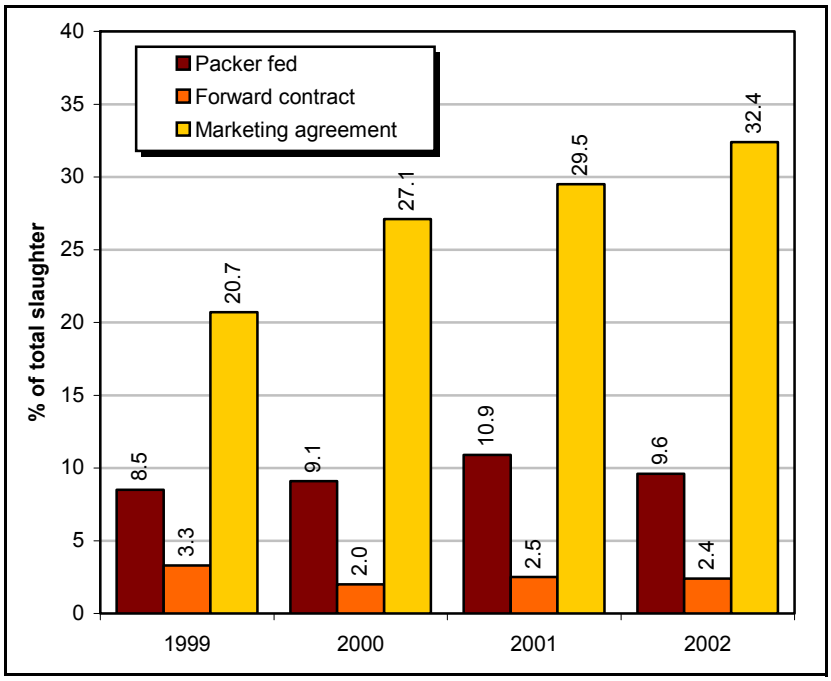

Figure 1. Packer feeding and forward purchases as a percentage of total steer and heifer slaughter-four largest packers.

Note. From USDA Grain Inspection Packers and Stockyards Administration. (2004). *Packers and Stockyards Statistical Report: 2002 Reporting Year* (GIPSA SR-04-1). Washington DC: USDA.

ments. These arrangements tend to be longer-run, standing agreements. They often give feeders considerable influence over the timing of cattle delivery. Such agreements also often involve the use of individual (or grid) pricing of cattle. In many cases, the packer provides information on the carcass merits of the cattle back to the feeder for use in future management decisions.

The inability of the price system to efficiently convey information along the supply chain often has been cited as contributing to the substantial decline in beef demand throughout the 1980s. Although marketing agreements and forward contracting clearly provide a logical means of dealing with this perceived problem, the practice has been controversial. This controversy stems from concern that packers may be able to use captive supplies strategically to depress prices. In 1996, GIPSA concluded a multiyear, congressionally mandated study of this issue. Results were somewhat mixed, showing a negative (but small) relationship between captive supply cattle as a percent of total cattle purchases and transaction price.

More recently, the controversy over captive supplies has been taken to Congress and the courts. The Senate version of the 2002 Farm Bill included an amendment offered by Tim Johnson of South Dakota that would have banned "packer control" of cattle prior to slaughter.[3] The Johnson amendment did not make it into the final version of the Farm Bill, but debate over the provision was intense.

In the courts, in early 2004, an Alabama jury issued a $1.28 billion judgment against Tyson Fresh Meats in a lawsuit brought by a group of cattle producers. The suit alleged that IBP (subsequently purchased by Tyson Foods, Inc.) had used captive supplies to depress cattle prices in the spot market. A judge later overturned the jury's decision, stating that there was no legally sufficient evidence to support the jury's verdict or the size of the award. However, the issue has not been put to rest, as the producers have filed an appeal that will likely be heard in early 2005.

Although many producers vocally opposed the Johnson amendment to the 2002 Farm Bill and the position

1. *Marketing agreements establish an ongoing relationship between the buyer and seller of cattle, in contrast to forward contracts, which generally apply only to a single transaction. Marketing agreements typically specify the number of cattle to be delivered per time period and the means by which cattle will be priced (often through a pricing formula).*

2. *GIPSA data on packer feeding go back as far as 1954. GIPSA began collecting data on forward contract and market agreement purchases in 1988; however, prior to 1999, GIPSA reported unaudited data as reported by packers. Since 1999, GIPSA has audited the data it reports. For this reason, it is difficult to compare current data on captive supplies to that reported prior to 1999.*

3. *During debate over this provision, proponents of the ban held that the rather ambiguous term "packer control" referred strictly to packer ownership of cattle, not to forward contracting or marketing agreements.*

of the plaintiffs in the *Pickett vs. Tyson Fresh Meats* case, grassroots support for both of these causes has been significant—has been, in fact, a driving force. For example, an amicus brief was recently filed in support of the *Pickett* appeal. This brief was joined by more than 50 individuals and grassroots organizations, including many with a national presence such as the Ranchers-Cattlemen's Action Legal Fund, United Stockgrowers of America (R-CALF USA), the Organization for Competitive Markets (OCM), and the National Farmer's Organization. These, along with many other producer groups on record as being strongly opposed to the practice of packer feeding and contracting, are also among the most ardent supporters of mandatory COOL.

Changing the Rules Requires Changing the Structure

Given the current structural state of the industry and the visceral obsession with market structure issues, it seems ironic that the implications of COOL on the structure of the beef industry have not been a large issue in the COOL debate. Because COOL requires retailers to be able to guarantee the accuracy of their labeling, a fundamental shift in the transactions cost for retailers would be expected. In a world where "anything goes," an open market procurement system where retailers seek out the lowest cost source of supply is sufficient to coordinate production and consumption. When one factors in supply risk and food-safety concerns, the incentives for retailers to vertically coordinate with packers and wholesalers becomes more important, leading the industry beyond its current structure.

The mandatory COOL program adds the requirement that the retailer be able to guarantee information on the source of the beef being presented to consumers. The question is: "How might one achieve this high level of information availability and integrity?" In the absence of some intervening force, the costs of researching, certifying, and *trusting* source information in an open procurement market are surely higher than if the system were vertically coordinated. If that hypothesis were true, then the impact of COOL on transactions costs would suggest that the policy creates *more* pressure for contracting in beef, not less. Grassroots organization within the beef industry that, on the one hand, argue vociferously for COOL, but, on the other, display considerable antipathy toward contracting, demonstrate that the potential linkage between COOL and contracting has not been adequately explored in this debate.

To illustrate the argument in a context that is free from the emotional baggage of COOL, consider the case of a retailer that wanted to market a product based on its location of origin because it perceived that consumers valued that information. Now, one could simply go into the market and purchase the product with little concern about the "truth" of the claims by the wholesaler. But, one could imagine the *Dateline TV* exposé on your company when they find out that you are making claims you cannot guarantee and the requisite class-action lawsuits that follow. So, what do you do? One logical solution is to bind the wholesaler in a contract which shifts the legal liability for certifying that your product does, in fact, come from where you claim it does from yourself to the wholesaler. The wholesaler, of course, wishes to shift legal liability back to the processor, and, so on. The central point of this simple illustration is that a choice by the retailer to provide information on a product attribute as a marketing tool led to this shift in market structure. In COOL, the provision of this information is mandated.

One should recognize that there are many simultaneous forces exerting themselves on the beef market—foreign animal diseases, product branding, international sourcing and trade restrictions, to name a few—each with potentially different effects on market structure and performance. The structural impacts of COOL are just a part of the myriad of issues facing the beef industry. However, it seems clear that without some intervening force, COOL is likely to increase pressure for contracting in beef.

The Potential Intervening Force—Animal Identification

The potential impact of COOL on the use of forward contracts and marketing agreements in the cattle industry has been complicated somewhat by the related issue of animal identification. In the wake of the December 2003 discovery of a dairy cow in Washington state infected with Bovine Spongiform Encephalopathy (BSE), the USDA announced its intention to implement a comprehensive animal identification program. Although the ID program would be geared toward providing rapid animal tracking capabilities in the event of a disease outbreak, such a system could perhaps be useful in meeting the requirements of a food-labeling program like mandatory COOL.

The National Animal Identification System (NAIS), as currently proposed, would include a uniform

individual-animal numbering system. Production information would not be required; however, information on animal movement (both intra- and interstate) as well as changes in ownership would be tracked in the system. The result will ideally be a concise, easily accessible record of where an animal originated and where it has been throughout its life.

If the NAIS can feasibly be implemented as planned, the information it could provide ought to facilitate the development of a COOL program. Each animal would have a record of its origin and movement. That record would, by design, follow the animal through the supply chain. This tracking capability is consistent with the needs of the COOL (or any other labeling) program.

The NAIS will not necessarily address all of the concerns related to COOL (e.g., additional costs required for segregating product by location of origin at the wholesale and retail level); however, it does potentially represent one reasonable means of collecting and transferring the information required for the COOL program. Consequently, an effective identification system potentially reduces the incentive for contracting created by COOL. If the provenance of every steer and heifer coming out of the feedlot is readily available through the identification system, there is less reason for retailers to rely on contracting as a means of reliably and efficiently securing this information.

Although the NAIS would provide tracking capability from birth to slaughter, one should keep in mind the difficulty of maintaining identification from slaughtering through fabricating a carcass into many hundreds of products. Animal tracking is one part, but keeping identification through processing is more difficult and potentially costly. Exactly how beef trimmings are to be identified is not clear. Plants or days could be identified as US only, but these structural issues certainly will affect transaction costs. Although they may satisfy COOL requirements, they may not be a traceback system.

Although a national animal identification system may reduce the cost of country-of-origin labeling, this is not to say that it will reduce total costs to the system. The higher transaction costs associated with the requirements of labeling will, in effect, become costs associated with the identification program—a program that provides additional benefits besides simply facilitating origin labeling. These costs will be the same whether animals are contracted or traded on the open market, because the requirement of the identification program will have to be met on all animals.

Summary and Conclusions

Well over two years have elapsed since passage of the COOL provisions in the 2002 Farm Bill. In that time, few if any of the more controversial aspects of the policy have been resolved, at least within the beef industry. Debate still swirls around questions such as how much the program will cost and what its potential benefits might be. At the same time, controversy continues to surround the issue of vertical integration and coordination in the beef industry. Pending court cases and the potential for additional legislation related to captive supplies will keep this issue front-and-center for the foreseeable future.

The relationship between mandatory COOL, captive supplies, and other structural changes in the beef industry (e.g., closer vertical coordination between processors and retailers) has unfortunately been virtually ignored in the lengthy debate over labeling policy. It is long past time for industry participants and policy makers to take up this discussion. Some important issues should be addressed now in order to avoid (or at least minimize) further controversy in the future.

If mandatory COOL does lead to greater vertical coordination through nonprice means (such as forward contracting and use of marketing agreements) what are the implications for the beef industry? For example, will price discovery problems associated with thin markets (already a topic of discussion in the industry) become a significant problem? More generally, will industry participants view an increase in captive supplies as an acceptable side effect of COOL, or will this simply exacerbate the current conflict, leading to additional litigation and political maneuvering? Historic precedent in the industry clearly favors the latter outcome. That being the case, industry leaders and policy makers would do well to consider what might be done now to reduce the potential for future conflicts—perhaps, for example, making changes to the provisions of mandatory COOL and/or working to more explicitly align the goals of COOL and the nascent NAIS.

John D. Anderson is an associate extension professor and Darren Hudson is an associate professor in the Department of Agricultural Economics at Mississippi State University.