



# BRIEFING

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## Distributional Impacts of Country-of-Origin Labeling in the U.S. Meat Industry

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### Objective

### Analysis

### for Informed

### Decision Making

### Introduction

Concerns about the effects of imports of beef and cattle into the United States on domestic livestock prices have increased interest in country-of-origin labeling (COOL) legislation as a means of improving market conditions for U.S. livestock producers. Proponents of the legislation generally argue that consumers have the right-to-know and choose the source of their meat products. Some argue that the legislation would enhance food safety and quality and improve the welfare of domestic livestock producers because of expected increases in demand for domestically-produced products. Opponents argue that the numerous marketing levels, the blending of products from multiple origins, and number of ownership exchanges that occur in livestock and meat markets would cause the implementation of COOL to be prohibitively expensive. The resulting debates have been both heated and expansive (Brester and Smith, 2000).

Mandatory COOL will require that unprocessed fresh and frozen beef and pork muscle cuts and fresh and frozen ground beef be labeled by country-of-origin. Poultry products, delicatessen food items, processed foods, food services, and small retailers (those with less than \$230,000 of annual sales) are excluded from mandatory COOL.

Several studies have attempted to quantify the expected costs of COOL (Davis; Hayes and Meyer; Sparks

Companies; USDA). Cost estimates for the beef industry range from \$200 million to over \$6 billion annually, and from \$20 million to \$1 billion annually for the pork industry. Proponents of COOL argue that the lowest ends of these ranges are most appropriate (VanSickle, etc.). In addition, proponents highlight the results of experimental auctions and surveys which suggest that consumers may be willing-to-pay these additional costs (Loureiro and Umberger; National Cattlemen's Beef Association). Conversely, others argue that while some consumers *may be* willing-to-pay for country-of-origin labeling, they *may not have* to pay for labeling because the majority of beef and pork products are of domestic origin (Plain and Grimes). Therefore, it could be that imported meat products would sell at a discount rather than domestic products selling at a premium. In addition, the USDA "...finds 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). Historically, increases in marketing and processing costs in the beef and pork industries have been distributed throughout the various marketing levels. Whether or not demand increases occur, the incidence of COOL costs will likely be distributed throughout the industries.

We estimate changes in prices and quantities of meat and livestock products in the beef, pork, and poultry sectors from costs of implementing COOL and potential demand increases. One would

**Table 1: Percentage Changes in Prices and Quantities at the End of 10 Years Under Specified Demand Conditions**

Demand Conditions		
Price/Quantity	No Demand Increase	2.72% Beef Demand Increase 4.40% Pork Demand Increase
<i>Beef Sector:</i>		
Retail Beef Price	0.23%	0.75%
Retail Beef Quantity	-0.13%	2.41%
Wholesale Beef Price	0.39%	1.05%
Wholesale Beef Quantity	-0.36%	1.89%
Fed Cattle Price	-0.04%	0.70%
Fed Cattle Quantity	-0.39%	1.47%
Feeder Cattle Price	0.16%	0.60%
Feeder Cattle Quantity	-0.45%	0.96%
<i>Pork Sector:</i>		
Retail Pork Price	0.16%	1.14%
Retail Pork Quantity	-0.05%	3.75%
Wholesale Pork Price	1.22%	2.60%
Wholesale Pork Quantity	0.98%	1.79%
Hog Price	0.04%	1.24%
Hog Quantity	-1.00%	1.16%
<i>Poultry Sector:</i>		
Retail Poultry Price	0.004%	0.01%
Poultry Quantity	0.05%	0.18%
Broiler Price	0.004%	0.02%
Broiler Quantity	0.04%	0.17%

expect different changes in prices and quantities depending upon the length of time considered. We report the price and quantity effects that would occur after allowing for a 10-year adjustment process. We use a statistical supply and demand model that accounts for interrelationships along the marketing chain for each meat sector and the substitutability of meat products at the consumer level.

### 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 (such as some fruits, nuts and vegetables) are included on a "J" list of commodities exempt from existing U.S. country-of-origin labeling requirements. Country-of-origin exempt products are generally those that are

combined with similar domestic products during processing and marketing (e.g., domestic and imported beef carcasses). For products not on the "J" list, current country-of-origin labeling legislation requires listing the source (country) of imported products through the marketing system until acquisition by an ultimate purchaser.

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 new subtitle instituted voluntary COOL on September 30, 2002 and mandatory COOL by September 30, 2004. Mandatory COOL will be administered by the Agricultural Marketing Service.

Animal health inspection will continue to be the responsibility of the Animal and Plant Health Inspection Service, and meat safety will continue to be monitored by the Food Safety Inspection Service.

Unprocessed fresh, frozen, and ground beef and pork will be required to be labeled by country-of-origin. Poultry products,

delicatessen food items, processed foods, food services, and small retailers (those with less than \$230,000 of annual sales) are excluded from mandatory COOL. Under the provisions of GATT, country-of-origin labeling is permitted as long as identical rules are applied to imported products from all World Trade Organization (WTO) member countries. GATT requires that imports must be treated no less favorably than domestically produced products; that is, domestic producers must also be subject to similar labeling requirements. Labeling activities must not cause serious damage to products.

Country-of-origin labeling is permitted under NAFTA. However, country-of-origin labeling has to be maintained only until a commodity reaches an "ultimate purchaser." An ultimate purchaser is defined as an entity that purchases the product in, or very close to, the form in which it is imported.

Consequently, the compatibility of any given country-of-origin labeling requirement with GATT, NAFTA, and WTO trade agreements is a question of legal interpretation that is often resolved only on a case-by-case basis.

Country-of-origin labeling for meat imports is currently required by some countries. Japan has insisted that all meat imports be labeled by country-of-origin since July 1, 1997. In the United States, beef imports are currently labeled by country-of-origin when entering the U.S. But, the meat processing sector is not currently required to maintain country-of-origin designations through the marketing sector to consumers.

### **Modeling Strategy**

Our model is developed assuming that COOL imposes additional marketing costs on suppliers at each market level. Added costs include those associated with segregation of commodities, record keeping, verification, and certification. We model the beef marketing chain by considering four distinct sectors: retail, wholesale (processor), fed cattle (finishing), and feeder cattle (farm). The pork marketing chain is more integrated than the beef sector. Hence, we consider demand and supply relations for three sectors: retail, wholesale (processor), and hogs (finishing). Finally, the poultry sector is highly integrated so only the retail and broiler (processing) sectors are considered.

We use estimates of COOL costs as reported by Sparks Companies. Sparks' estimates represent the approximate midpoint of the range of published costs estimates. Sparks estimates that COOL will result in a \$1.6 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).

Sparks estimates that COOL will generate \$713 million of additional costs for pork industry with \$263 million occurring at the retail level, \$350 million

at the wholesale level, and \$100 million at the hog finishing level. The lower estimate for the pork industry relative to the beef industry reflects the more highly integrated nature of the pork industry.

Currently, poultry is exempt from COOL legislation. However, even if it were not exempt, the costs incurred by the poultry industry should be minimal because the United States imports very little poultry (less than one-half of one percent of U.S. total poultry supplies). Although our model includes poultry consumption and production, no additional costs would be incurred by the poultry industry as a result of COOL.

### **COOL Simulation Results**

#### *Livestock Price and Quantity Effects Assuming No Change in Consumer Demand*

We use our model to estimate changes in prices and quantities at each marketing level caused by COOL-induced cost changes -- assuming, initially, that COOL does not increase consumer demand for beef and pork. These results are reported in Table 1 as percentage changes relative to 2002 average prices and quantities. For example, column 1 shows that retail beef price would increase by 0.23 percent over 2002 levels because of an \$805 billion increase in COOL costs at the retail level. However, retail beef quantity would decline by 0.13 percent. Note that fed cattle price and quantity decline. Domestic feeder cattle and hog prices increase slightly, quantities decline by a larger percentage. Poultry prices and quantities increase slightly as consumers substitute away from relatively more expensive beef and pork products.

#### *Livestock Price and Quantity Effects Assuming an Increase in Consumer Demand*

The implementation of COOL could generate increased demand for domestically-produced beef and pork products. However, there is considerable debate about the occurrence and size of such an increase. We use our model to estimate the size of a consumer demand increase needed so that feeder cattle and hog producers are "no worse off" as a result of the implementation of COOL. We note that COOL might increase revenues to meat sectors, but COOL will also increase costs across the beef and pork industries. Thus, we assume that producers are "worse off" if

revenue increases are smaller than cost increases as a result of COOL.

The model indicated that a one-time, permanent increase of 2.72 percent in beef demand and a 4.40 percent increase in pork demand would be necessary for feeder cattle and hog producers to be no worse off as a result of COOL. The impacts of this demand increase on percentage changes in prices and quantities are presented in the second column of table 1. Note that this assumed demand increases all prices and quantities within the meat sector.

### **A Discussion Of The Results**

The above simulation results are contingent upon selected consumer and producer behavior in response to price changes and the relative costs of COOL expected to occur at each marketing level across industries. Overall, percentage changes in prices and quantities (both positive and negative) are relatively small; however, COOL-induced marketing costs are also small *relative* to revenues generated at each market level. Nonetheless, the critical result of the simulations is that livestock producers do not benefit from COOL if it fails to increase consumer demand for domestically-produced beef and pork products. If one-time, permanent demand increases do occur, they need to exceed 2.72 percent for beef and 4.40 percent for pork if the economic well-being of feeder cattle and hog producers is to improve as a result of COOL.

Whether such demand changes are considered small or large is subject to speculation. Figure 1 illustrates the demand for beef (represented by an index) between 1980 and 2002. From 1998 to 2001, beef demand increased an average of 3 percent per year. However, beef demand declined by 1.8 percent between 2001 and 2002. Therefore, it appears that a one time, permanent 1.35 percent change in beef demand is within the range of recent demand changes.

It should be noted that COOL applies only to beef and pork muscle cuts and

ground beef that is sold through retail food stores. Based on consumer expenditures in 2002, retail food stores accounted for 51 percent of consumer food expenditures (USDA). It is likely that potential COOL-induced demand increases in retail grocery stores would not have any affect on the demand for beef and pork products sold through restaurant outlets. If the proportion of meat expenditures in retail food stores is similar to that for all food expenditures, then the demand increases noted above would have to be generated by one-half of the beef market.

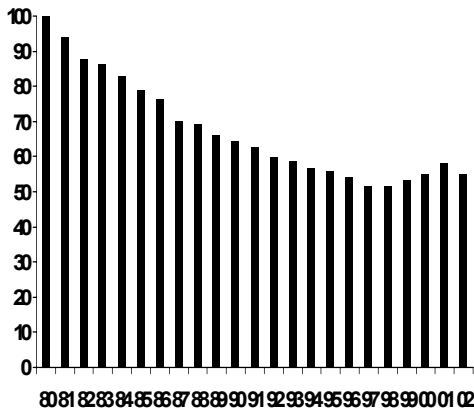


Figure 1: U.S. Beef Demand Index, 1980-2002 (1980=100)  
Source: Livestock Marketing Information Center

**Conclusions**

Our research explains why COOL is receiving a chilly reception in some sectors. The result show that an increase in consumer demand for beef and pork products as a direct result of COOL would be necessary to improve the economic well-being of feeder cattle and hog producers. If no demand increases occur, then feeder cattle and hog producers would be harmed. It is interesting to note that the most vocal proponents of COOL have been groups primarily representing feeder cattle producers. Yet, feeder cattle producers have the least to gain and the most to lose from the implementation of COOL.

Retail beef and pork demand would have to experience a one-time, permanent increase of 2.72 percent and 4.40 percent, respectively, to improve the economic well-being of feeder cattle and hog producers. Because COOL applies

only to beef and pork muscle cuts and ground beef sold through retail outlets, this sector of the beef and pork industries must generate the entire demand increase.

It is important to note that 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.

Increased COOL marketing costs in the beef and pork sectors that increase retail beef and pork prices would encourage consumers to substitute towards poultry products. This demand increase causes subsequent increases in poultry prices and quantities.

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