Executive Order 12866 – Final Regulatory Impact Analysis

USDA has examined the economic impact of this final rule as required by Executive Order 12866. USDA has determined that this regulatory action is economically significant, as it is likely to result in a rule that would have an annual effect on the economy of $100 million or more in any one year. This rule has been reviewed by the Office of Management and Budget (OMB). Executive Order 12866 and OMB Circular A-4 requires that a regulatory impact analysis be performed on all economically significant regulatory actions.

This final rule defines covered commodities as muscle cuts of beef, lamb, goat, pork, and chicken; ground beef, ground lamb, ground pork, ground goat, and ground chicken; wild and farm-raised fish and shellfish; perishable agricultural commodities; ginseng; peanuts; macadamia nuts; and pecans. Thus, this regulatory impact assessment addresses the economic impacts of all covered commodities as defined by law.

This regulatory impact assessment reflects revisions to the Interim Regulatory Impact Assessment (IRIA)(73 FR 45106). Revisions to the IRIA were made as a result of changes to the rule relative to the August 1, 2008, interim final rule, and the interim final rule for wild and farm-raised fish and shellfish published October 5, 2004, Federal Register (69 FR 89708).

The Comments and Responses section includes the comments received and provides the Agency's responses to the comments. When substantially unchanged, results of the IRIA are summarized herein, and revisions are described in detail. Interested readers are referred to the text of the IRIA for a more comprehensive discussion of the assumptions, data, methods, and results.

Summary of the Economic Analysis

The estimated economic benefits associated with this final rule are likely to be small. The estimated first-year incremental costs for growers, producers, processors, wholesalers, and retailers are $2.6 billion. The estimated cost to the United States economy in higher food prices and reduced food production in the tenth year after implementation of the rule is $211.9 million.

Note that this analysis does not quantify certain costs of the rule such as the cost of the rule after the first year, or the cost of any supply disruptions or any other "lead-time" issues. Except for the recordkeeping requirements, there is insufficient information to distinguish between first year start up and maintenance costs versus ongoing maintenance costs for this final rule. Maintenance costs beyond the first year are expected to be

lower than the combined start up and maintenance costs required in the first year.

While USDA recognizes that there appears to be consumer interest in knowing the origin of food based on the comments received, USDA finds little evidence that private firms are unable to provide consumers with country of origin labeling (COOL) consistent with this regulation, if consumers are willing to pay a price premium for it. USDA also finds little evidence that consumers are likely to increase their purchase of food items bearing the United States origin label as a result of this rulemaking. Current evidence does not suggest that United States producers will receive sufficiently higher prices for United States-labeled products to cover the labeling, recordkeeping, and other related costs. The lack of widespread participation in voluntary programs for labeling products of United States origin provides evidence that consumers do not have strong enough preferences for products of United States origin to support price premiums sufficient to recoup the costs of labeling.

Statement of Need

Justification for this final rule remains unchanged from the IRIA. This rule is the direct result of statutory obligations to implement the COOL provisions of the 2002 and 2008 Farm Bills. There are no alternatives to federal

regulatory intervention for implementing this statutory directive.

The COOL provisions of the Act changed federal labeling requirements for muscle cuts of beef, pork, lamb, goat, and chicken; ground beef, ground pork, ground lamb, ground goat, and ground chicken; wild and farm-raised fish and shellfish; perishable agricultural commodities; ginseng; peanuts; macadamia nuts; and pecans (hereafter, covered commodities).

As described in the IRIA, the conclusion remains that there does not appear to be a compelling market failure argument regarding the provision of country of origin information. Comments received on the IRIA and previous requests for comments elicited no evidence of significant barriers to the provision of this information other than private costs to firms and low expected returns. Thus, from the point of view of society, such evidence suggests that market mechanisms would ensure that the optimal level of country of origin information would be provided.

Alternative Approaches

The IRIA noted that many aspects of the mandatory COOL provisions contained in the Act are prescriptive and provide little regulatory discretion for this rulemaking. As stated previously, this final rule provides flexibility in implementation to the extent allowed by the statute. Some

commenters suggested that USDA explore more opportunities for less costly regulatory alternatives. Specific suggestions focused on methods for identifying country of origin, recordkeeping requirements, and the scope of products required to be labeled.

A number of comments on the IRIA and previous requests for comment suggested that USDA adopt a "presumption of United States origin" standard for identifying commodities of United States origin. Under this standard, only imported livestock and covered commodities would be required to be identified and tracked according to their respective countries of origin. Any livestock or covered commodity not so identified would then be considered by presumption to be of United States origin. As stated in this final rule, the Agency is allowing for producers to issue affidavits based upon a visual inspection at or near the time of sale that identifies the origin of livestock for a specific transaction. Affidavits based on visual inspection may only be issued by the producer or owner prior to, and including, the sale of the livestock for slaughter (i.e., meat packers are not permitted to use visual inspection for origin verification).

A number of commenters suggested that USDA reduce the recordkeeping burden for the rule. For retailers, this rule requires records and other documentary evidence relied upon at the point of sale by the retailer to establish a covered

commodity's country(ies) of origin and method of production (wild and/or farm-raised), as applicable, to be either maintained at the retail facility or at another location for as long as the product is on hand and provided to any duly authorized representative of USDA, upon request, within 5 business days of the request. For pre-labeled products, the label itself is sufficient information on which the retailer may rely to establish the product's origin and method of production, as applicable, and no additional records documenting origin and method of production information are necessary. Under the August 1, 2008, interim final rule, retailers were required to maintain these records for a period of 1 year.

These changes in recordkeeping requirements should lessen the number of changes that entities in the distribution chain need to make to their recordkeeping systems and should lessen the amount of data entry that is required.

As noted in the IRIA, the law stated that COOL applies to the retail sale of covered commodities other than fish and shellfish beginning September 30, 2008. The implementation date for fish and shellfish covered commodities was September 30, 2004.

III. Analysis of Benefits and Costs

As in the IRIA, the baseline for this analysis is the present state of the affected industries absent mandatory COOL.

USDA recognizes that most affected firms have already begun to implement changes in their operations to accommodate the law and the requirements of the August 1, 2008, interim final rule. Therefore, we will also discuss changes in the final rule analysis due to regulatory changes between the IFR and final rule.

Because the Act contains an effective date of September 30, 2004, for wild and farm-raised fish and shellfish and September 30, 2008, for all other covered commodities, the economic impacts of the rule will be staggered by four years. The analysis herein of benefits and costs of the rule abstracts away from the staggered dates of implementation and treats all commodities as having the same effective date of implementation. Since a two-pronged approach was used to estimate the costs of this rule, direct fish and shellfish costs have been updated using more recent data and included to estimate the overall impacts of this rule on the United States economy even though labeling of fish and shellfish was implemented in 2004. The results of the analysis are not significantly affected by this simplifying assumption.

Benefits: The expected benefits from implementation of this rule are difficult to quantify. The Agency's conclusion remains unchanged, which is that the economic benefits will be small and will accrue mainly to those consumers who desire

country of origin information. Several analysts conclude that the main benefit is the welfare effect resulting from removing informational distortions associated with not knowing the origin of products (Ref. 1). Numerous comments received on previous COOL rulemaking actions indicate that there clearly is interest by some consumers in the country of origin of food. The mandatory COOL program may provide additional benefits to these consumers. However, commenters provided no additional substantive evidence to alter the Agency's conclusion that the measurable economic benefits of mandatory COOL will be small. Additional information and studies cited by commenters were of the same type identified in the IRIA--namely, consumer surveys and willingness-to-pay studies, including the most recent studies reviewed for this analysis (Ref. 2; Ref. 3). The Agency does not believe that these types of studies provide a sufficient basis to estimate the quantitative benefits, if any, of COOL.

There are several limitations with the willingness-to-pay contingent valuation studies that call into question the appropriateness of using this approach to make determinations about the benefits to consumers of this rule. First, respondents in such studies may overstate their willingness to pay for a product. This typically happens because survey participants are not constrained by their normal household

budgets when they are deciding which product or product feature they most value. Second, in most of these willingness-to-pay studies, consumers are not faced with the actual or full choices they would face at retail outlets, such as all of the labeling options allowed under this final rule. In practice, this may distort valuations obtained from such studies, leading to both over and underestimation. Finally, the results reported from these studies do not take into account changes in consumers' preferences for a particular product or product attribute over time.

As was the case in the interim final rule for fish and shellfish, a few commenters suggested that mandatory COOL would provide food safety benefits to consumers. As discussed in the IRIA, mandatory COOL does not address food safety issues. Appropriate preventative measures and effective mechanisms to recall products in the event of contamination incidents are the means used to protect the health of the consuming public regardless of the form in which a product is consumed or where it is purchased. In addition, foods imported into the United States must meet food safety standards equivalent to those required of products produced domestically.

Costs: To estimate the costs of this rule, a two-pronged approach was employed. First, implementation costs for firms in the industries directly affected by the rule were estimated.

The implementation costs on directly affected firms represent increases in capital, labor, and other input costs that firms will incur to comply with the requirements of the rule. These costs are expenses that these particular firms must incur, and thus represent the opportunity costs of the rulemaking.

These costs, however, are not necessarily dead weight losses to the United States economy, as measured by the value of goods and services that are produced. This is simply because increases in capital, labor, and other inputs necessary to comply with the rule will benefit the providers of such inputs. In order to estimate the net decrease in economic activity as a result of this rulemaking, the implementation cost estimates were applied to a general equilibrium model to estimate overall impacts on the United States economy after a 10-year period of economic adjustment. The general equilibrium model provides a means to estimate the change in overall consumer purchasing power after the economy has adjusted to the requirements of the rule. In addition, since the Department has not identified a market failure associated with this rulemaking and therefore does not believe the rule would have measurable economic benefits, we believe this net decrease in economic activity can be considered the overall net costs (benefits minus costs) of this rulemaking.

Details of the data, sources, and methods underlying the cost estimates are provided in the IRIA and the previous PRIA's. This section provides the revised cost estimates and describes revisions made to the IRIA for this final analysis.

First-year incremental costs for directly affected firms are estimated at $2.6 billion, an increase of $0.1 billion over the IRIA due to the inclusion of fish and shellfish. Costs per firm are estimated at $370 for producers, $48,219 for intermediaries (such as handlers, importers, processors, and wholesalers), and $254,685 for retailers.

To assess the overall net impacts of the higher costs of production resulting from the rule, a computational general equilibrium (CGE) model of the model of the United States economy developed by USDA's Economic Research Service (ERS) (Ref 4) was used. The model was adjusted by imposing the estimated implementation costs on the directly impacted segments of the economy. That is, the costs of production for directly affected firms increase due to the costs of implementing the COOL program. These increased costs of production were imposed on the CGE model. The model estimates changes in prices, production, exports, and imports as the directly impacted industries adjust to higher costs of production over the longer run (10 years). The CGE model covers the whole United States economy, and estimates how other segments of the economy adjust

to changes emanating from the directly affected segments and the resulting change in overall productivity of the economy.

Overall net costs to the United States economy in terms of reduced purchasing power resulting from a loss in productivity after a 10-year period of adjustment are estimated at $211.9 million in the tenth year. Domestic production for all of the covered commodities at the producer and retail levels is estimated to be lower, and prices are estimated to be higher, compared to the absence of this rulemaking. In addition, United States exports are estimated to decrease for all covered commodities. Compared to the baseline of no mandatory COOL, United States imports are estimated to increase for fruits and vegetables, cattle and sheep, hogs, chicken, and fish. United States imports of broilers, beef and veal, and pork are estimated to decrease.

The findings indicate that, consistent with standard economic theory, directly affected industries recover the higher costs imposed by the rule through slightly higher prices for their products. With higher prices, the quantities of their products demanded also decline. Consumers pay slightly more for the products and purchase less of the covered commodities. Overall, the model indicates that the net loss to society, or "deadweight" burden of the rule, is considerably smaller than the incremental opportunity costs to directly affected firms

that were imposed on the model. The remainder of this section describes in greater detail how the estimated direct, incremental costs and the overall costs to the United States economy are developed.

Cost assumptions: This rule directly regulates the activities of retailers (as defined by the law) and their suppliers. Retailers are required by the rule to provide country of origin information for the covered commodities that they sell, and firms that supply covered commodities to these retailers must provide them with this information. In addition, virtually all other firms in the supply chain for the covered commodities are potentially affected by the rule because country of origin information will need to be maintained and transferred along the entire supply chain.

Number of firms and number of establishments affected: This rule is estimated to directly or indirectly affect approximately 1,333,000 establishments owned by approximately 1,299,000 firms. Table 1 provides estimates of the affected firms and establishments.

Table 1.--Estimated Number of Affected Entities		
Type	Firms	Establish-ments
Beef, Lamb, Pork, and Goat		
Cattle and Calves	971,400	971,400
Sheep and Lambs	69,090	69,090
Hogs and Pigs	65,540	65,540
Goats	9,146	9,146
Stockyards, Dealers & Market Agencies	6,807	6,807
Livestock Processing & Slaughtering	2,943	3,207
Meat & Meat Product Wholesale	2,509	2,706
Chicken		
Chicken Producer and Processor	38	168
Chicken Wholesaler/Distributor	510	564
Fish		
Farm-Raised Fish and Shellfish	3,752	3,752
Fishing	71,128	71,142
Fresh & Frozen Seafood Processing	516	590
Fish & Seafood Wholesale	2,254	2,330
Perishable Agricultural Commodities		
Fruits & Vegetables	79,800	79,800
Ginseng Farms	190	190
Ginseng Dealers	46	46
Frozen fruit, juice & vegetable mfg	155	247
Fresh fruit & vegetable wholesale	4,654	5,016
Peanuts, Pecans, & Macadamia Nuts		
Peanut Farming	650	650
Macadamia Farming	53	53
Pecan Farming	1,119	1,119
Roasted nuts & peanut butter mfg	8	9
Peanut, Pecan, & Macadamia Wholesalers	5	5
General line grocery wholesalers	3,037	3,436
Retailers	4,040	36,392
Totals:		
Producers	1,271,906	1,272,050
Handlers, Processors, & Wholesalers	23,444	24,963
Retailers	4,040	36,392
Grand Total	1,299,390	1,333,405

It is assumed that all firms and establishments identified in Table 1 will be affected by the rule, although some may not produce or sell products ultimately within the scope of the rule. While this assumption likely overstates the number of affected firms and establishments, it is believed that the assumption is reasonable. Detailed data are not available on the number of entities categorized by the marketing channels in which they operate and the specific products that they sell.

Source of cost estimates: To develop estimates of the cost of implementing this rule, comments on the interim final rule for beef, pork, lamb, chicken, goat meat, perishable agricultural commodities, peanuts, pecans, ginseng, and macadamia nuts as well as the interim final rule for fish and shellfish were reviewed and available economic studies were also examined. No single source of information, however, provided comprehensive coverage of all economic benefits and costs associated with mandatory COOL for all of the covered commodities. Available information and knowledge about the operation of the supply chains for the covered commodities were used to synthesize the findings of the available studies about the rule's potential costs.

Cost drivers: This rule is a retail labeling requirement. Retail stores subject to this rule will be required to inform consumers as to the country of origin of the covered commodities

that they sell. To accomplish this task, individual package labels or other point-of-sale materials will be required. If products are not already labeled by suppliers, the retailer will be responsible for labeling the items or providing the country of origin and, as applicable, method of production information through other point-of-sale materials. This may require additional retail labor and personnel training. Modification of existing recordkeeping systems will likely be required to ensure that products are labeled accurately and to permit compliance and enforcement reviews. For most retail firms of the size defined by the statute (i.e., those retailing fresh and frozen fruits and vegetables with an invoice value of at least $230,000 annually), it is assumed that recordkeeping will be accomplished primarily by electronic means. Modifications to recordkeeping systems will require software programming and may entail additional computer hardware. Retail stores are also expected to undertake efforts to ensure that their operations are in compliance with the rule.

Prior to reaching retailers, most covered commodities move through distribution centers or warehouses. Direct store deliveries (such as when a local truck farmer delivers fresh produce directly to a retail store) are an exception. Distribution centers will be required to provide retailers with country of origin and, as applicable, method of production

information. This likely will require modification of existing recordkeeping processes to ensure that the information passed from suppliers to retail stores permits accurate product labeling and permits compliance and enforcement reviews. Additional labor and training may be required to accommodate new processes and procedures needed to maintain the flow of country of origin and, as applicable, method of production information through the distribution system. There may be a need to further separate products within the warehouse, add storage slots, and alter product stocking, sorting, and picking procedures.

Packers and processors of covered commodities will also need to inform retailers and wholesalers as to the country of origin and, as applicable, method of production (wild and/or farm-raised) of the products that they sell. To do so, their suppliers will need to provide documentation regarding the country of origin and, as applicable, method of production of the products that they sell. The efficiency of operations may be affected as products move through the receiving, storage, processing, and shipping operations. For packers and processors handling products from multiple origins and/or methods of production, there may also be a need to separate shifts for processing products from different origins, or to split processing within shifts, or to alter labels to correctly identify the country or countries of origin and method or

methods of production, as applicable. However, in the case of meat covered commodities, there is flexibility in labeling covered commodities of multiple origins under this final rule. In the case where products of different origins are segregated, our analysis indicates costs are likely to increase. The rule requires that records be maintained to ensure that accurate country of origin information is retained throughout the process and available to permit compliance and enforcement reviews.

Processors handling only domestic origin products or products from a single country of origin may have lower implementation costs compared with processors handling products from multiple origins, although such costs would likely be mitigated in those cases where firms are only using covered commodities which are multiple-origin labeled. Procurement costs also may be unaffected in this case, if the processor is able to continue sourcing products from the same suppliers. Alternatively it is possible that a processor currently sourcing products from multiple countries may choose to limit its source to fewer countries. In this case, such cost avoidance may be partially offset by additional procurement costs to source supplies from a narrower country of origin. Additional procurement costs of a narrower supply chain may include higher transportation costs due to longer shipping distances and higher acquisition costs due to supply and demand conditions for

products from a particular country of origin, whether domestic or foreign.

At the production level, agricultural producers and fish and shellfish harvesters need to maintain records to establish country of origin and, as applicable, method of production information for the products they produce and sell. Country of origin and, as applicable, method of production information will need to be transferred to the first handler of their products, and records sufficient to allow the source of the product to be traced back will need to be maintained as the products move through the supply chains. For all covered commodities, producer affidavits shall be considered acceptable records on which suppliers may rely to initiate country of origin and, as applicable, method of production claims. In general, additional producer costs include the cost of modifying and maintaining a recordkeeping system for country of origin information, animal or product identification, and labor and training.

Incremental cost impacts on affected entities: To estimate the direct costs of this rule, the focus is on those units of production that are affected (Table 2).

Table 2. Estimated Annual Units of Production Affected by Mandatory Country of Origin Labeling							
	Beef	Pork	Lamb and Goat	Chicken	Fish	Fruit, Vegetable, and Ginseng	Peanuts, Pecans, and Macadamia Nuts
	Million Head			*Million Pounds*			
Producer	33.9	104.8	2.9	45,012.9	7,808.0	120,388.5	212.7
	Million Pounds						
Intermediary	24,890	6,721	354	27,710	3,024	99,449	11
Retailer	8,193	2,330	133	17,645	1,104	47,078	5

For livestock, the relevant unit of production is an animal because there will be costs associated with maintaining country of origin information on each animal. These costs may include recordkeeping, ear tagging, and other related means of identification on either an individual animal or lot basis. Annual domestic slaughter numbers are used to estimate the flow of animals through the live animal production segment of the supply chain.

For fish and chicken producers, production is measured by round weight (live weight) pounds, except mollusks, which excludes the weight of the shell. Wild caught fish and shellfish production is measured by United States domestic landings for fresh and frozen human food. It is assumed that fish harvesters generally know whether their catch is destined for fresh and frozen markets, canning, or industrial use. Fish production also includes farm-raised fish. Fish production has

been updated with 2006 data from the regulatory analysis contained in the interim final rule for fish and shellfish.

For fruits and vegetables, it is assumed that essentially all production is predestined for either fresh or processing use. That is, growers know before the crop is produced whether it will be sold for fresh consumption or for processing. However, producers do not know whether their products ultimately will be sold to retailers, foodservice firms, or exporters. Therefore, it is assumed that all fresh fruit and vegetable production and production destined for frozen processors at the producer level will be affected by this rule. Ginseng production has been included with the fruit and vegetable production.

As previously discussed, only green and raw peanuts, macadamia nuts, and pecans sold at retail are subject to the requirements of this rule. Green and raw peanuts are specialty items typically sold at roadside stands, through mail order, and at specialty shops. These items frequently are not carried by many of the retailers subject to this rule. Statistics on the size of this niche market are not readily available. It is assumed that no more than 5 percent of the sales of peanuts at subject retailers are sold as green or raw peanuts. Macadamia nuts and pecans have been included with peanuts.

It is assumed that all sales by intermediaries such as handlers, packers, processors, wholesalers, and importers will be affected by the rule. Although some product is destined exclusively for foodservice or other channels of distribution not subject to the rule, it is assumed that these intermediaries will seek to keep their marketing options open for possible sales to subject retailers.

Fish production at the intermediary level is increased by 505 million pounds from the RIA estimate of 2004 in the interim final rule for fish and shellfish due to more recently available data.

Information and data on ginseng is limited. However, the Wisconsin Department of Agriculture reports the number of growers at 190, the number of dealers at 46, and grower sales at 282,055 dry root pounds for 2006 (Ref. 5). While some other regions in the country likely produce ginseng, information could not be found and it is believed that Wisconsin is the largest producing state. The information from Wisconsin likely underestimates the total number of farms, dealers, and production of ginseng. However, it is believed that Wisconsin represents most of the ginseng production and therefore, this information is used for this rule. Since the number of entities and production are likely underestimated and the production is

relatively small as compared to other covered commodities, the production was not adjusted for retail consumption.

The Census of Agriculture provides an estimate of the number of macadamia nut farming operations. The total number of macadamia farms is estimated at 1,059 [Ref. 6]. Businesses that husk and crack macadamia nuts are unofficially estimated by the Hawaii Field Office of the National Agricultural Statistical Service (NASS) at 8 firms and establishments. Businesses that wholesale macadamia nuts are estimated by the Hawaii Department of Agriculture at 21 firms and establishments. Similar to peanuts, the rule exempts most product forms of macadamia nuts sold at retail. While data on macadamia nuts sold at retail that are covered by this rule are not available, the volume of sales is certainly very small. For purposes of estimation, the number of affected entities at each level of the macadamia nut sector has been reduced to 5 percent of the total estimated. The number of farms has been reduced from 1059 to 53 and the number of wholesalers has been reduced from 21 to 1.

The Census of Agriculture provides an estimate of 22,371 pecan farming operations [Ref. 7]. Similar to peanuts and macadamia nuts, the rule exempts most product forms of pecans sold at retail. For purposes of estimation, the number of affected entities at each level of the pecan sector has been reduced to 5 percent of the total 22,371 to 1,119 farms.

As with peanut, macadamia nut, and pecan production at the producer level, peanut, macadamia nut, and pecan production at the intermediary level is also reduced by 95 percent. The estimate of peanut, macadamia nut, and pecan production is intended to include only green and raw peanuts, macadamia nuts, and pecans.

For retailers, food disappearance figures are adjusted to estimate consumption through retailers as defined by the statute. For each covered commodity, disappearance figures are multiplied by 0.470, which represents the estimated share of production sold through retailers covered by this rule. To derive this share, the factor of 0.622 is used to remove the 37.8 percent food service quantity share of total food in 2006 (Ref. 8). This factor is then multiplied by 0.756, which was the share of sales by supermarkets, warehouse clubs and superstores of food for home consumption in 2006 (Ref. 9). In other words, supermarkets, warehouse clubs and superstores represent the retailers as defined by PACA, and these retailers are estimated to account for 75.6 percent of retail sales of the covered commodities.

Table 3 summarizes the direct, incremental costs that firms will incur during the first year as a result of this rule. These estimates are derived primarily from the available studies that addressed cost impacts of mandatory COOL.

Table 3. Estimates of First-Year Implementation Costs per affected industry segment

	Beef	Pork	Lamb & Goat	Chicken	Fish	Fruit, Vegetable, and Ginseng	Peanuts, Pecans, & Macadamia Nuts	Total
				Million Dollars				
Producer	305	105	10	0	20	30	0	470
Intermediary	373	101	5	139	15	497	0	1,130
Retailer	574	93	5	44	77	235	0	1,029
Total	1,252	299	21	183	112	763	0	2,629

(a) Indicates a value greater than zero, but less than 0.5.

Assumptions and procedures underlying the cost estimates are described fully in the discussion of the estimates presented in the PRIA and the IRIA.

Considering all producer segments together, we have estimated a $9 per head cost to cattle producers to implement the rule. This estimate reflects the expectation of relatively small implementation costs at the cow-calf level of production, but relatively higher costs each time cattle are resold. Typically, fed steers and heifers change hands two, three, or more times from birth to slaughter, and each exchange will require the transfer of country of origin information. Thus, total costs for beef producers are estimated at $305 million.

It is expected that intermediaries will face increased costs associated with tracking cattle and the covered beef commodities produced from these animals and then providing this information to subsequent purchasers, which may be other intermediaries or covered retailers. Incremental costs for beef

packers may include additional capital and labor expenditures to enable cattle from different origins to be tracked for slaughter, fabrication, and processing. As previously discussed, under this final rule, there is greater flexibility for labeling muscle cut covered commodities. In addition, the rule also provides for flexibility in labeling ground products by allowing the notice of country of origin to include a list of countries contained therein or that may reasonably be contained therein. Considering the costs likely to be faced by intermediaries in the beef sector, $0.015 per pound is adopted as an estimate of costs, which is consistent with estimates from the available studies. Total costs are thus estimated at $373 million.

The implementation costs are estimated at $0.07 per pound for beef retailers, for a total of $574 million. This figure reflects the costs for individual package labels, meat case segmentation, record keeping and information technology changes, labor, training, and auditing. In addition, there likely will be increased costs for in-store butcher department operations related to cutting, repackaging, and grinding operations.

Total costs for affected entities in the beef sector are thus estimated at $1,252 million.

Costs for pork producers are estimated at $1.00 per head. With annual slaughter of 104.8 million head, total costs for producers are estimated at $105 million.

Costs for all pork sector intermediaries (including handlers, processors, and wholesalers) should be similar to costs for beef sector intermediaries. These estimated costs for pork industry intermediaries are $0.015 per pound, for a total of $101 million.

Costs for retailers of pork are estimated to be $0.04 per pound. The per-pound cost estimate for pork is lower than for beef primarily to reflect the higher costs incurred by in-store grinding operations to produce ground beef. Although ground pork may also be produced in-store, most ground pork is processed into sausage and other products not covered by the rule. Total estimated costs for pork retailers are $93 million. Total costs for the pork sector are estimated at $299 million.

Costs per head for lamb and goat producers are estimated at $3.50 per head. Total costs for lamb and goat producers are estimated at $10 million.

Intermediaries in the lamb and goat sector will likely face per-pound costs similar to costs faced by beef and pork sector intermediaries, which are estimated at $0.015 per pound. Total costs for lamb and goat sector intermediaries are thus estimated at $5 million.

Costs to retailers for lamb and goat should be similar to costs borne for pork, which was estimated at $0.04 per pound. Total costs for retailers of lamb and goat are estimated at $5 million.

Total costs for producers, intermediaries, and retailers in the lamb and goat industries are estimated costs at $21 million.

Costs for chicken producers who grow-out chicken for an integrator (the firm that will slaughter and possibly further process the chickens) is $0.00 because these individuals do not own or control the movement of the chickens they are raising. All chickens produced are owned by the integrator which is the main intermediary in the chicken supply chain. We do not expect that producers will need change any current practices and thus will not incur any additional costs due to this rule.

Costs for the intermediaries in the chicken supply chain are estimated to be $0.005 per pound. Since the integrators own their chickens from the time they hatch to time they are sold to a retailer or distributor, there is no need to "collect" country of origin information. Costs to the integrator are mainly due to system changes to incorporate COOL information, recordkeeping, and supplying required information to the retailers and food distributors. Approximately 69 percent of chicken covered by COOL is supplied directly to the retailer from the integrator. The vast majority, if not all, of the

chicken supplied by the integrator is pre-labeled. The bulk of the rest is supplied by the distributors whose costs will be slightly higher since they are receiving product from integrators and selling product to retailers. Total costs for intermediaries are estimated at $139 million.

Costs for retailers are estimated to be $0.0025 per pound. As noted above most chicken is purchased directly from integrators and will have been pre-labeled. This will significantly lower the retailers cost in terms of meeting COOL requirements. Most of the costs retailers will bear will be from distributors. Total cost for retailers are estimated at $44 million.

Total estimated costs for chicken producers, intermediaries, and retailers are $183 million.

The estimated costs to fish and seafood producers are $0.0025 per pound. Total costs for fish and seafood producers are thus estimated at $20 million, $1 million more that the RIA in the interim final rule for fish and shellfish.

Costs for intermediaries are estimated at $0.005 per pound in the fish and seafood sector. Processors need to collect country of origin and method of production information from producers, maintain this information, and supply this information to other intermediaries or directly to retailers. There are also labeling costs associated with providing country

of origin and method of production information on consumer-ready packs of frozen and fresh fish that are labeled by processors. Total costs for fish and seafood intermediaries are thus estimated at $15 million, an increase of $2 million from the RIA in the interim final rule for fish and shellfish. The increase is attributable to using the most recently available data, which reflects a higher demand for fresh fish and shellfish.

Retailer costs are estimated at $0.07 per pound for fish and seafood. This estimate results in total costs of $77 million for retailers of fish and seafood, an increase of $20 million from the RIA in the interim final rule for fish and shellfish.

Total costs for fish and seafood are estimated at $112 million, an increase of $23 million from the RIA in the interim final rule for fish and shellfish.

Although fruit, vegetable, and ginseng producers maintain the types of records that will be required to substantiate origin claims, it is believed that this information is not universally transferred by producers to purchasers of their products. Producers will have to supply this type of information in a format that allows handlers and processors to maintain country of origin information so that it can be accurately transferred to retailers. For fruit, vegetable, and ginseng producers, costs are estimated at $0.00025 per pound to

make and substantiate COOL claims, which equates to $0.01 for a 40 pound container. Because fruits and vegetables only have a single point of origin, which is where they are grown, substantiating country of origin claims is substantially simpler for fruit and vegetable producers than for livestock producers. Total costs for fruit, vegetable, and ginseng producers are estimated at $30 million.

Fruit, vegetable, and ginseng intermediaries will shoulder a sizeable portion of the burden of tracking and substantiating country of origin information. Intermediaries will need to obtain information to substantiate COOL claims by producers and suppliers; maintain COOL identity throughout handling, processing, and distribution; and supply retailers with COOL information through product labels and records. The estimated cost for these activities for fruit and vegetable sector intermediaries is $0.005 per pound, resulting in total estimated costs of $497 million.

Because intermediaries will bear a large portion of the burden of COOL tracking and labeling, implementation costs for retailers will be reduced. It is believed that virtually all frozen fruits and vegetables will be labeled by suppliers, thus imposing minimal incremental costs for retailers. In addition, over 60 percent of fresh fruits and vegetables arrive at retail with labels or stickers that may be used to provide COOL

information. It is believed that fresh fruit and vegetable suppliers will provide COOL information on these labels and stickers, again imposing minimal incremental costs for retailers. Costs for retailers are estimated at $0.005 per pound of fresh and frozen fruits and vegetables. For pre-labeled products, the label itself is sufficient evidence on which the retailer may rely to establish a product's country of origin. For these pre-labeled products, the product label or sticker carries the required country of origin information, while the recordkeeping system maintains the information necessary to track the product back through the supply chain. Total costs for retailers of fruits, vegetables, and ginseng are estimated at $235 million.

Total costs for producers, intermediaries, and retailers of fruit, vegetable, and ginseng products are estimated at $763 million.

Costs per pound for each segment of the peanut, macadamia nut, and pecan industries is estimated at $0.00025 for producers, $0.005 for intermediaries and $0.015 for retailers. As a result, costs for the peanut, macadamia nut, and pecan industries are estimated at about $400,000, with negligible costs for producers and costs of less than $200,000 at the intermediary and retailer levels.

Total incremental costs are estimated for this rule at $470 million for producers, $1,130 million for intermediaries and $1,029 million for retailers for the first year. Total incremental costs for all supply chain participants are estimated at $2,629 million for the first year, an increase of $112 million from the IRIA due to the inclusion of and updating of data for the fish and shellfish industries.

There are wide differences in average estimated implementation costs for individual entities in different segments of the supply chain (Table 4). With the exception of a small number of fishing operations and chicken producers, producer operations are single-establishment firms. Thus, average estimated costs per firm and per establishment are somewhat similar. Retailers subject to the rule operate an average of just over nine establishments per firm. As a result, average estimated costs per retail firm also are just over nine times larger than average costs per establishment.

Table 4. Estimated Implementation Costs per Firm and Establishment

	Cost Estimates Per	
	Firm	Establishment
	dollars	
Producer	370	369
Intermediary	48,219	45,285
Retailer	254,685	28,273

Average estimated implementation costs per producer are relatively small at $370 and slightly less than from the IRIA due to the inclusion of fish and shellfish producers. The slight difference between the cost per producers for firms and establishments is due to the inclusion of fish and shellfish and that there are more fishing establishments than firms. Estimated costs for intermediaries are substantially larger, averaging $48,219 per firm and $45,285 per establishment. The average cost per firm is $5,729 less than the IRIA estimated cost, with the lower cost attributable to the inclusion of fish and shellfish. Similarly, the average cost per intermediary establishment is $5,313 lower than IRIA estimate due to the inclusion of fish and shellfish. At an average of $254,685 per firm, retailers have the highest average estimated costs per firm. This is $19,134 higher than the IRIA estimate. The higher estimated cost per retailer is attributable to the inclusion of fish and shellfish. Retailers' average estimated costs per establishment are $28,273. This amount is $2,124 higher than the IRIA estimate.

The costs per firm and per establishment represent industry averages for aggregated segments of the supply chain. Large firms and establishments likely will incur higher costs relative to small operations due to the volume of commodities that they handle and the increased complexity of their operations. In

addition, different types of businesses within each segment are likely to face different costs. Thus, the range of costs incurred by individual businesses within each segment is expected to be large, with some firms incurring only a fraction of the average costs and other firms incurring costs many times larger than the average.

Average costs per producer operation can be calculated according to the commodities that they produce (Table 5). Average estimated costs are lowest for lamb and goat producers ($128) and highest for hog operations ($1,599). Again, chicken "producers" do not own or control the movement of the birds they are growing-out. We do not expect that the rule will result in any changes in their current production practices, and thus their average cost is zero. Because average production volume per hog operation is large relative to other types of producer operations, estimated costs per hog operation are large relative to other producer operations. These costs are unchanged from the IRIA estimates except for fish which used more up-to-date information.

Table 5. Estimated First-Year Implementation Costs per Producer Operation

Producer	Average Cost
Beef	314
Lamb & Goats	128
Pork	1,599
Chicken	0
Fish	261
Fruits,Vegetables, & Ginseng	376
Peanuts, Pecans, & Macadamia Nuts	258
All	369

It is believed that the major cost drivers for the rule occur when livestock or other covered commodities are transferred from one firm to another, when livestock or other covered commodities are segregated in the production or marketing process when firms are not using a multiple-origin label, and when products are assembled and then redistributed to retail stores. In part, some requirements of the rule will be accomplished by firms using essentially the same processes and practices as are currently used, but with information on country of origin claims added to the processes. This adaptation generally would require relatively small marginal costs for recordkeeping and identification systems. In other cases, however, firms may need to revamp current operating processes to implement the rule. For example, a processing or packing plant may need to sort incoming products by country of origin and, if applicable, method of production, in addition to weight, grade, color, or other quality factors. This may require adjustments to plant operations, line processing, product handling, and storage. Ultimately, it is anticipated that a mix of solutions will be implemented by industry participants to effectively meet the requirements of the rule. Therefore, it is anticipated that direct, incremental costs for the rule likely will fall within a reasonable range of the estimated total of $2.6 billion.

In the IRIA, one regulatory alternative considered by AMS would be to narrow the definition of a processed food item, thereby increasing the scope of commodities covered by the rule. This alternative is not adopted in this final rule. An increase in the number of commodities that would require COOL would increase implementation costs of the rule with little expected economic benefit. Additional labeling requirements may also slow some of the innovation that is occurring with various types of value-added, further processed products.

A different regulatory alternative would be to broaden the definition of a processed food item, thereby decreasing the scope of commodities covered by the rule. Accordingly, such an alternative would decrease implementation costs for the rule. At the retail level and to a lesser extent at the intermediary level, cost reductions would be at least partly proportional to the reduction in the volume of production requiring retail labeling, although if the broader definition excluded products for which incremental costs are relatively high, the impact could be more than proportional. Start-up costs for retailers and many intermediaries likely would be little changed by a narrowing of the scope of commodities requiring labeling because firms would still need to modify their recordkeeping, production, warehousing, distribution, and sales systems to accommodate the requirements of the rule for those commodities

that would require labeling. Ongoing maintenance and operational costs, however, likely would decrease in some proportion to a decrease in the number of items covered by the rule. On the other hand, implementation costs for the vast majority of agricultural producers would not be affected by a change in the definition of a processed food item. This is because it is assumed that virtually all affected producers would seek to retain the option of selling their products through supply channels for retailers subject to the rule. Agricultural producers generally would have little influence on the ultimate product form in which their products are sold at retail, and thus would be little affected by changes in the definition of a processed food item.

The definition of a processed food item developed for this rule has taken into account comments from affected entities and has resulted in excluding products that would be more costly and troublesome for retailers and suppliers to provide country of origin information.

Net Effects on the economy: The previous section estimated the direct, incremental costs of the rule to the affected firms in the supply chains for the covered commodities. While these costs are important to those directly involved in the production, distribution, and marketing of covered commodities,

they do not represent net costs to the United States economy or net costs to the affected entities for that matter.

With respect to assessing the effect of this rule on the economy as a whole, it is important to understand that a significant portion of the costs directly incurred by the affected entities take the form of expenditures for additional production inputs, such as payments to others whether for increased hours worked or for products and services provided. As such, these direct, incremental costs to affected entities represent opportunity costs of the rule, but they do not represent losses to the economy. As a result, the direct costs incurred by the participants in the supply chains for the covered commodities do not measure the net impact of this rule on the economy as a whole. Instead, the relevant measure is the extent to which the rule reduces the amount of goods and services that can be produced throughout the United States economy from the available supply of inputs and resources.

Even from the perspective of the directly affected entities, the direct, incremental costs do not present the whole picture. Initially, the affected entities will have to incur the operation adjustments and expenses necessary to implement the rule. However, over time as the economy adjusts to the requirements of the rule, the burden facing suppliers will be reduced as their production level and the prices they receive

change. What is critical in assessing the net effect of this rule on the affected entities over the longer run is to determine the extent to which the entities are able to pass these costs on to others and consequently how the demand for their commodities is affected.

Conceptually, suppose that all the increases in costs from the rule were passed on to consumers in the form of higher prices and that consumers continued to purchase the same quantity of the affected commodities from the same marketing channels. Under these conditions, the suppliers of these commodities would not suffer any net loss from the rule even if the increases in their operating costs were quite substantial. However, other industries might face losses as consumers may spend less on other commodities. It is unlikely, however, absent the rule leading to changes in consumers' preferences for the covered commodities that consumers will maintain their consumption of the covered commodities in the face of increased prices. Rather, many or most consumers will likely reduce their consumption of the covered commodities. The resulting changes in consumption patterns will in turn lead to changes in production patterns and the allocation of inputs and resources throughout the economy. The net result, once all these changes have occurred, is that the total amount of goods and services produced by the United States economy will be less than before.

To analyze the effect of the changes resulting from the rule on the total amount of goods and services produced throughout the United States economy in a global context, a computable general equilibrium (CGE) model developed by Economic Research Service (ERS) is utilized (Ref. 4). The ERS CGE model includes all the covered commodities and the products from which they are derived, as well as non-covered commodities that will be indirectly affected by the rule, such as feed grains. Even though COOL for fish was implemented in 2004, the costs for fish and shellfish are included to account for the cross-commodity effects between covered commodities. Peanuts, however, are aggregated with oilseeds in the model, and there is no meaningful way to modify the model to account for the impacts of the rule on peanut production, processing, and consumption. Given the definition of a processed food item, almost all peanut products are exempt from this rule. As a consequence, the peanut sector accounts for only a negligible fraction of the total estimated incremental costs for all directly affected entities. Thus, omitting the small direct costs on the peanut sector is expected to have negligible impacts with respect to estimated impacts on the overall United States economy.

The ERS CGE model traces the impacts from an economic "shock," in this case an incremental increase in costs of production, through the U.S agricultural sector and the U.S

economy to the rest of the world and back through the inter-linking of economic sectors. By taking into account the linkages among the various sectors of the United States and world economies, a comprehensive assessment can be made of the economic impact on the United States economy of the rule implementing COOL. The model reports economic changes resulting after a ten-year period of adjustment.

The results of this analysis indicate that the rule implementing COOL after the economy has had a period of ten years to adjust will have a smaller net impact on the overall United States economy than the incremental costs for directly affected entities for the first year. Under the assumption that COOL will not change consumers' preferences for the covered commodities, it is estimated that the overall costs to the United States economy due to the rule, in terms of a reduction in consumers' purchasing power, will be $211.9 million. This represents the cost to the United States economy after all transfers and adjustments in consumption and production patterns have occurred.

As noted above, the overall net costs to the United States economy after a decade of adjustment are significantly smaller than the implementation costs to directly affected firms. This result does not imply that the implementation costs for directly affected firms have been substantially reduced from the initial

estimates. While some of the increase in their costs will be offset by reduced production and higher prices over the longer term, the suppliers of the covered commodities will still bear direct implementation costs.

The estimates of the overall costs to the United States economy are based on the estimates of the incremental increases in operating costs to the affected firms. The model does not permit supply channels for covered commodities that require country of origin information to be separated from supply channels for the same commodities that do not require COOL. Thus, the direct cost impacts must be adjusted to accurately reflect changes in operating costs for all firms supplying covered commodities. Table 6 reports these adjusted estimates in terms of their percentage of total operating costs for each of the directly affected sectors. The percentages used are based on the estimate of the percentage change in operating costs for the entire supply channel and are adjusted between the various segments of each covered commodities' supply chain (producers, processors, importers, and retailers) based on the estimate of how the costs of the regulation will be distributed among them. As a result, the cost changes shown in Table 6 only approximate the direct cost estimates previously described.

Table 6.--Estimated Increases in Operating Costs by Supply Chain Segment and Industry						
		Beef, Lamb, & Goat	Pork	Chicken	Fish	Fresh Produce
		percent change				
Farm Supply	Domestic	1.30	1.30	0.00	0.60	0.10
	Imported	1.30	1.30	1.00	0.60	0.10
Processing	Domestic	2.10	1.00	1.10	n.a.	n.a.
	Imported	2.10	1.00	1.10	n.a.	n.a.
Retail	Domestic	2.20	0.40	0.60	0.40	0.60
	Imported	2.20	0.40	0.60	0.40	0.60
n.a. - Not Applicable.						

In addition, it is assumed that domestic and foreign suppliers of the covered commodities located at the same level or segment of the supply chain face the same percentage increases in their operating costs. In reality, the incremental costs for some imported covered commodities may be lower, as a portion of those products already enter the United States with country of origin labels.

As discussed above, consumption and production patterns will change as the incremental increases in operating costs are passed on, at least partially, to consumers in the form of

higher prices by the affected firms. The increases in the prices of the covered commodities will in turn cause exports and domestic consumption and ultimately domestic production to fall. The results of our analysis indicate that United States production of all the covered commodities combined will decline 0.02 percent and that the overall price level for these commodities (a weighted average index of the prices received by suppliers for their commodities) will increase by 0.02 percent.

The structure of the model does not enable changes in net revenues to suppliers of the covered commodities to be determined. Likewise, the model cannot be used to determine the extent to which the reductions in production arise from some firms going out of business or all firms cutting back on their production. To provide an indication of what effect this will have on the suppliers of the covered commodities, changes in revenues using the model results are estimated. The result of this calculation shows that revenues to suppliers of the covered commodities will decrease by $461 million. This decrease in revenue is due to the decrease in estimated revenues in all covered commodities; all affected sectors show a small revenue decrease due to the increased costs of the rule.

The costs of the rule will not be shared equally by all suppliers of the covered commodities. The distribution of the costs of the rule will be determined by several factors in

addition to the direct costs of complying with the rule. These are the availability of substitute products not covered by the rule and the relative competitiveness of the affected suppliers with respect to other sectors of the United States and world economies.

Although the increases in operating costs are the initial drivers behind the changes in consumption and production patterns resulting from this rule, they do not, as can be seen by examining Table 7, determine which commodity sector will be most affected. Table 7 contains the percentage changes in prices, production, exports, and imports for the three main segments of the marketing chain by covered commodities. The estimated increases in operating costs reflect anticipated adjustments by industry as a result of the rule and provide the basis for the CGE analysis. However, the analysis does not reflect dynamic adjustments that industry will undertake to comply with the requirements of the rule, such as the flexibilities afforded by the use of multiple-origin labels.

Table 7.--Estimated impact of rule on U.S. production, prices and trade of impacted sectors

Commodity	Price	Production	Exports (Volume)	Imports (Volume)
	percent change from base year			
Fruits and Vegetables	0.21	-0.20	-0.39	0.04
Cattle and Sheep	0.52	-0.94	-1.18	0.25
Broilers	0.03	-0.56	-0.36	-0.03
Hogs	0.26	-0.46	-0.60	0.16
Beef and Veal	0.99	-1.09	-1.93	-2.32
Chicken	0.82	-0.90	-1.54	0.29
Pork	0.68	-0.81	-1.37	-0.86
Fish	0.50	-0.68	-0.06	0.04

As mentioned previously, peanuts, macadamia nuts, and pecans are included with oilseed products in the ERS CGE model. As a result they are not included in this analysis.

The rule increases operating costs for the supply chains of the covered commodities. As shown in Table 7, the increased costs result in higher prices for these products. The quantity demanded at these higher prices falls, with the result that the production of all of the covered commodities decreases.

Imports of fruits, vegetables, cattle, sheep, chicken, fish, and hogs increase because the model assumes United States domestic suppliers of these products respond more to changes in their operating costs than do foreign suppliers. The resulting gap between the supply response of United States and foreign producers provides foreign suppliers with a cost advantage in United States markets that enables them to increase their

exports to the United States even though they face similar increases in operating costs.

To put these impacts in more meaningful terms, the percentage changes reported in Table 7 were converted into changes in current prices and quantities produced, imported, and exported (Table 8). The base values in Table 8 vary from those reported in Table 2 above because they are derived from projected levels reported in the USDA Agricultural Baseline for 2006 (Ref. 10), while values in Table 2 represent actual reported values for 2006 as compiled by USDA's NASS. Baseline values were used to accommodate the structure of the model.

Increases in prices for all covered commodities are small, less than one cent per pound. Production changes are similarly small, less than 100 million pounds for all covered commodities. The declines in the production of beef, chicken, and pork mirrors the decline in the production of beef, broilers, and hogs.

Table 8. Estimated Changes in U.S. Production Prices, and Trade for Affected Commodities

Indicator	Units	Base	Change from Base
U.S Production			
Veg.&Fruits	Mil. Lbs.	191,523	-383
Cattle	Thous. Hd.	32,229	-303
Broilers	Mil. Hd.	6,503	-36
Hogs	Thous.	103,015	-474

	Hd.		
Beef	Mil. Lbs.	24,784	-270
Chicken	Mil. Lbs.	35,733	-322
Pork	Mil. Lbs.	20,706	-168
Fish	Mil. Lbs.	7,997	-54
U.S. Price			
Veg.&Fruits	$/Lb.	0.25	0.0005
Cattle and sheep	$/Cwt.	89.55	0.4657
Broilers	$/Lb.	0.43	0.0001
Hogs	$/Cwt.	49.62	0.1290
Beef and veal	$/Lb.	4.09	0.0405
Chicken	$/Lb.	1.74	0.0143
Pork	$/Lb.	2.83	0.0192
Fish	$/Lb.	0.93	0.0047
U.S. Exports (volume)			
Fruits & Vegetables	Mil Lbs.	19,990	-78
Beef	Mil Lbs.	697	-13
Chicken	Mil Lbs.	5,203	-80
Pork	Mil Lbs.	2,498	-34
Fish	Mil Lbs.	6,384	-4
U.S. Imports (volume)			
Fruits & Vegetables	Mil. Lbs.	37,573	15
Beef	Thous. Hd.	2,502	-58
Chicken	Mil. Hd.	0	0
Pork	Thous. Hd.	5,741	-49
Fish	Mil. Lbs.	10,158	4

Sources: Base values for meat and fruits and vegetables come from USDA Agricultural Baseline Projections to 2016, Staff Report WAOB-2007-1. USDA, Office of the Chief Economist, 2007. Changes are derived from applying percentage changes obtained from the ERS CGE model to the base values. [a] Live animal estimates derived from baseline values for meat product using 2005 average dress weight for cattle, hogs and broilers. [b] Base values for fish come from Fisheries of the United States, 2005. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, 2006. [c] Fruit and vegetable price derived by dividing the total value of fruit and vegetable production by total quantity of fruit and vegetables produced as reported in USDA baseline for 2005. [d] Fish price derived by dividing total value of commercial and aquaculture production, excluding other, by total commercial and aquaculture production.

The estimated changes in prices and production cause revenues for the fruit and vegetable industry to increase an estimated $5 million. The small revenue increase in the fruit and vegetable industry is attributed to the fact that the price increase just offsets the production decrease. The estimated changes in production and prices result in revenues decreasing by $94 million for beef cattle producers while revenues from production and sale of beef decrease by an estimated $112 million dollars. Revenues for broiler production declines by $91 million and revenues for the production and sale of chicken decrease by $54 million. In addition, revenues for hog production decrease by $21 million and revenues from production and sale of pork decrease by $79 million. Finally, revenues to the fish industry fall by nearly $14 million.

The increase in the prices of all covered commodities causes exports to decline (Table 8). These declines are small; they are for the most part smaller than the declines in United States production of these commodities.

The ERS CGE model assumes that firms behave as though they have no influence on either their input or output prices. On the other hand, a model that assumed that processors could influence their input and output prices could find that prices received by agricultural producers decreased because processors

passed their cost increases down to their suppliers rather than increase the price they charged their customers.

The estimates of the economic impact of the rule on the United States are based on the assumption that country of origin labeling does not shift consumer demand toward the covered commodities of United States origin. This assumption is based on the earlier finding that there was no compelling evidence to support the view that mandatory COOL will increase the demand for United States products. Despite this lack of evidence, it is examined how much of a shift or increase in demand for commodities of United States origin would need to occur to offset the costs imposed on the economy by the rule. Consumer demand for the covered commodities would have to increase 0.90 percent to offset the costs to the economy of COOL as outlined in the rule.

The hypothetical 0.90 percent increase in demand for covered commodities represents the overall increase (shift) in demand from all outlets. If there were such a demand increase for domestically produced covered commodities, however, it would presumably occur at those retailers required to provide country of origin information. As previously discussed, the percentage share of covered commodities sold by retailers subject to this rule is estimated at 47.0 percent of total consumption. This suggests that demand at covered retailers actually would have to

increase by 1.9 percent for purposes of this hypothetical exercise, assuming no change in demand at other domestic outlets or in export demand.

As previously mentioned, the estimates of the overall economic effects of the rule are derived from a CGE model developed by ERS. The results from this model show the changes in production and consumption patterns after the economy has adjusted to the incremental increase in costs (medium run results). Such changes occur over time and the economy does not adjust instantaneously.

The results of this analysis describe and compare the old production and consumption patterns to the new ones, but do not reflect any particular adjustment process. The purpose of using the ERS CGE model is not to forecast what prices and production will be over any particular time frame, but to explore the implications of COOL on the United States economy and capture the direction of the changes.

The ERS CGE model is global in the sense that all regions in the world are covered. Production and consumption decisions in each region are determined within the model following behavior that is consistent with economic theory. Multilateral trade flows and prices are determined simultaneously by world market clearing conditions. This permits prices to adjust to

ensure that total demand equals total supply for each commodity in the world.

The general equilibrium feature of the model means that all economic sectors--agricultural and non-agricultural--are included. Hence, resources can move among sectors, thereby ensuring that adjustments in the feed grains and livestock sectors, for example, are consistent with adjustments in the processed sectors.

The model is static and this implies that possible gains (or losses) from stimulating (or inhibiting) investment and productivity growth are not captured. The model allows the existing resources to move among sectors, thereby capturing the effects of re-allocation of resources that are the result of policy changes. However, because the model fixes total available resources, it underestimates the long-run effects of policies on aggregate output. For example, the 10-year average real growth of GDP between 1997 and 2007 was approximately 3.1 percent (Ref. 11). If applied to the next 10 years this implies an economy approximately 36 percent larger at the end of this analysis than at the beginning of this analysis.

The ERS CGE model uses data from the Global Trade Analysis Project (GTAP database, version 7.2). The database represents the world as of 2004 and includes information on macroeconomic variables, production, consumption, trade, demand and supply

elasticities, and policy measures. The GTAP database includes 57 commodities and 101 countries/regions. For this analysis, the regions were represented by the following country/regions: the United States, Canada, Mexico, the European Union-25 (EU), Oceania, China, Other East Asian Countries, India, Other South Asian Countries, Brazil, South America (including Central America), OPEC Countries, Russia, Africa and the Rest of the World. The agricultural sector is subdivided into the following 7 commodity aggregations: rice, wheat, corn, other feed grains (barley, sorghum), soybeans, sugar (cane and beets), vegetables and fresh fruits, other crops (cotton, peanuts), cattle and sheep, hogs and goats, poultry, and fish. The food processing sectors are subdivided into the following 6 commodity aggregations, bovine cattle and sheep meat, pork meat, chicken meat, vegetable oils and fats, other processed food products, beverages and tobacco, and fish. The remaining sectors in the database were represented by 18 aggregated non-agricultural sectors.