

ECONOMIC ASPECTS OF ANIMAL AGRICULTURE

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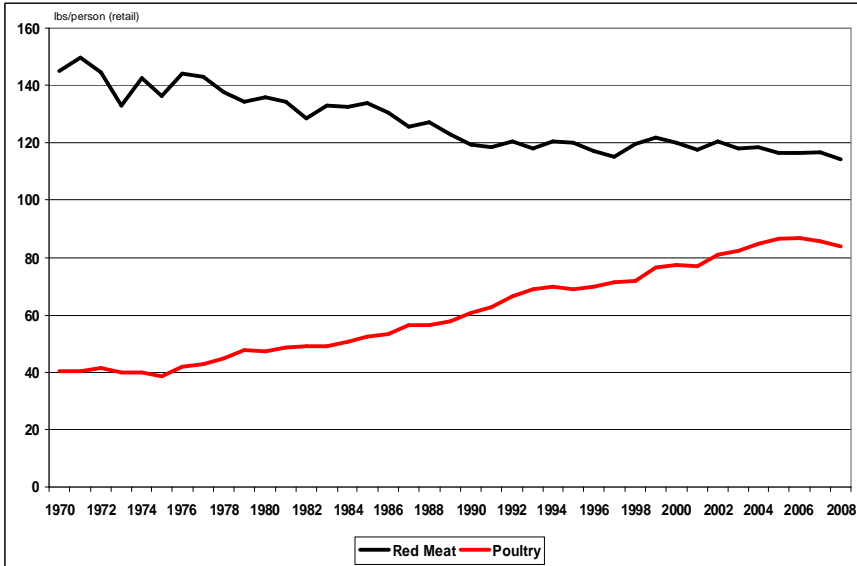
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Animal Production Workshop, November 9-10, 2011
The Role of Animal Agriculture in a Sustainable 21st Century Global Food System
Board on Agriculture and Natural Resources
The National Academies (National Research Council)
Washington, D.C.

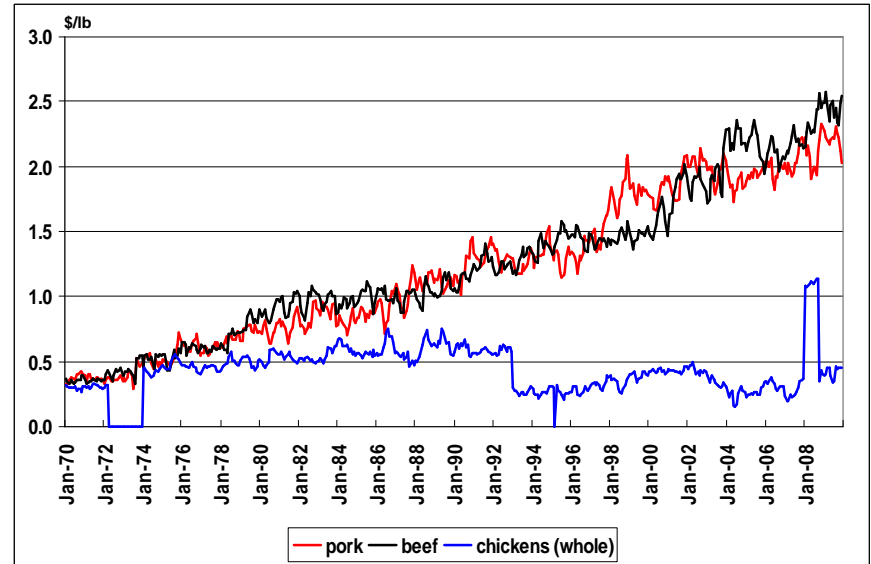
Economic Dimensions of U.S. Animal Agriculture

- Livestock account for about half of U.S. agricultural cash receipts, exceeding \$100 billion per year
- Agriculture's share of U.S. GDP has declined from 7.7% in 1930 to only 0.7% in 2002 (USDA, 2005)
- Production of all livestock types, except poultry, has experienced either no growth or negative growth for many years.
- At the same time, the farm-to-retail price spreads for all red meat livestock have been increasing steadily.
- But this has not been the case for poultry.
- Also, per capita consumption of red meat has been declining while that of chicken has been increasing.

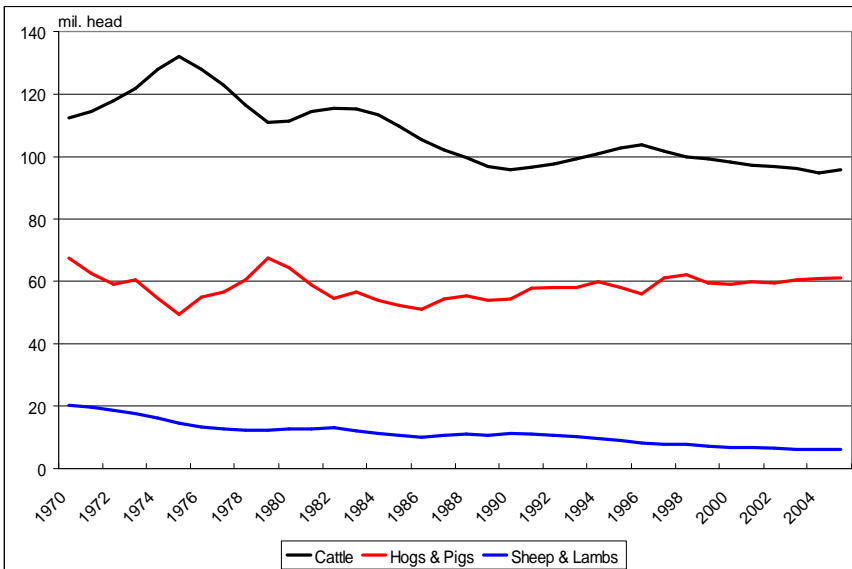
U.S, Red Meat and Chicken Per Capita Consumption, 1970-2008



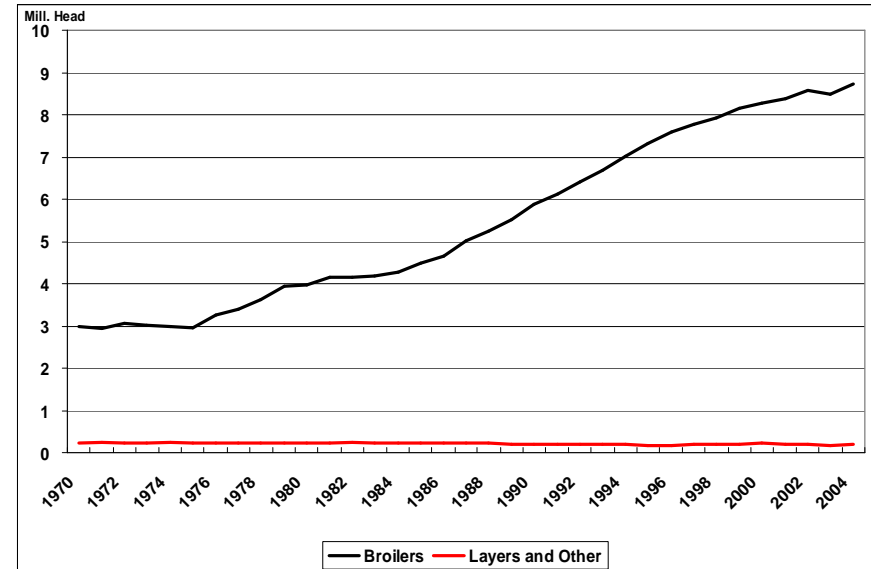
Livestock Farm-to-Retail Price Spreads, 1970-2008



Cattle, Hogs, and Sheep Inventories, 1970 - 2005

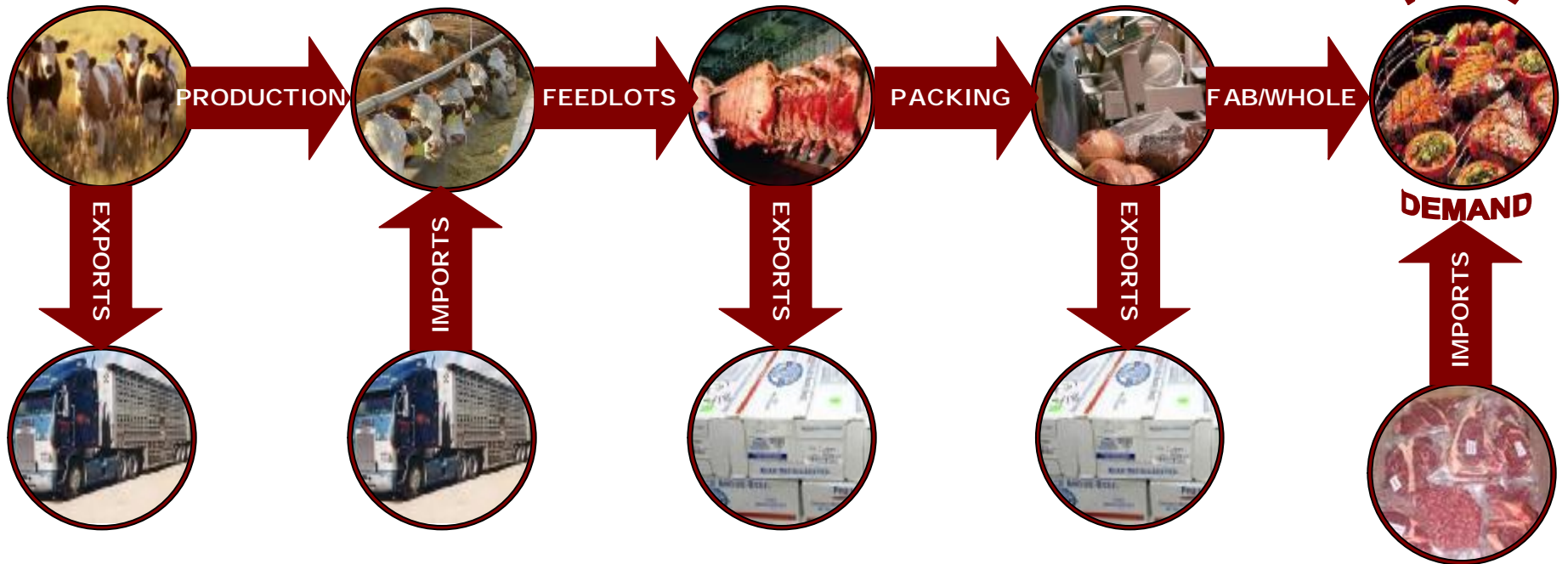


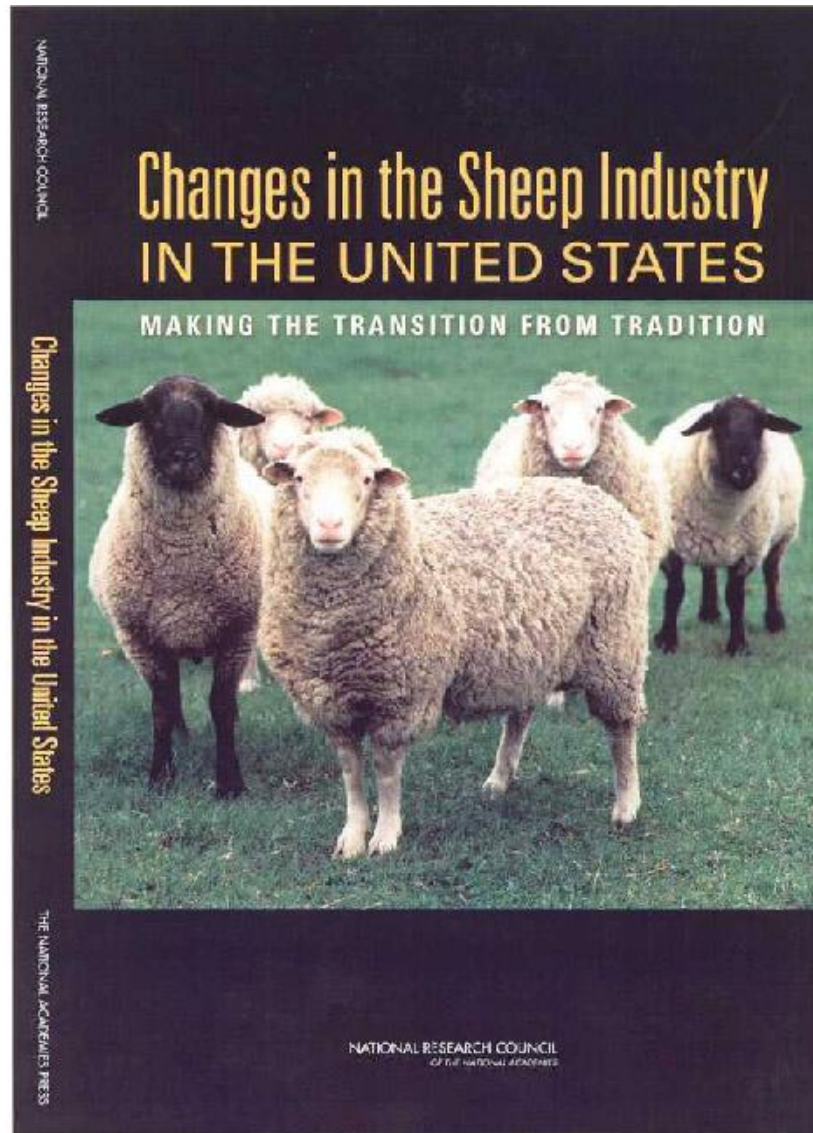
Chicken Inventories, 1970-2005



GENERAL LIVESTOCK INDUSTRY VALUE CHAIN

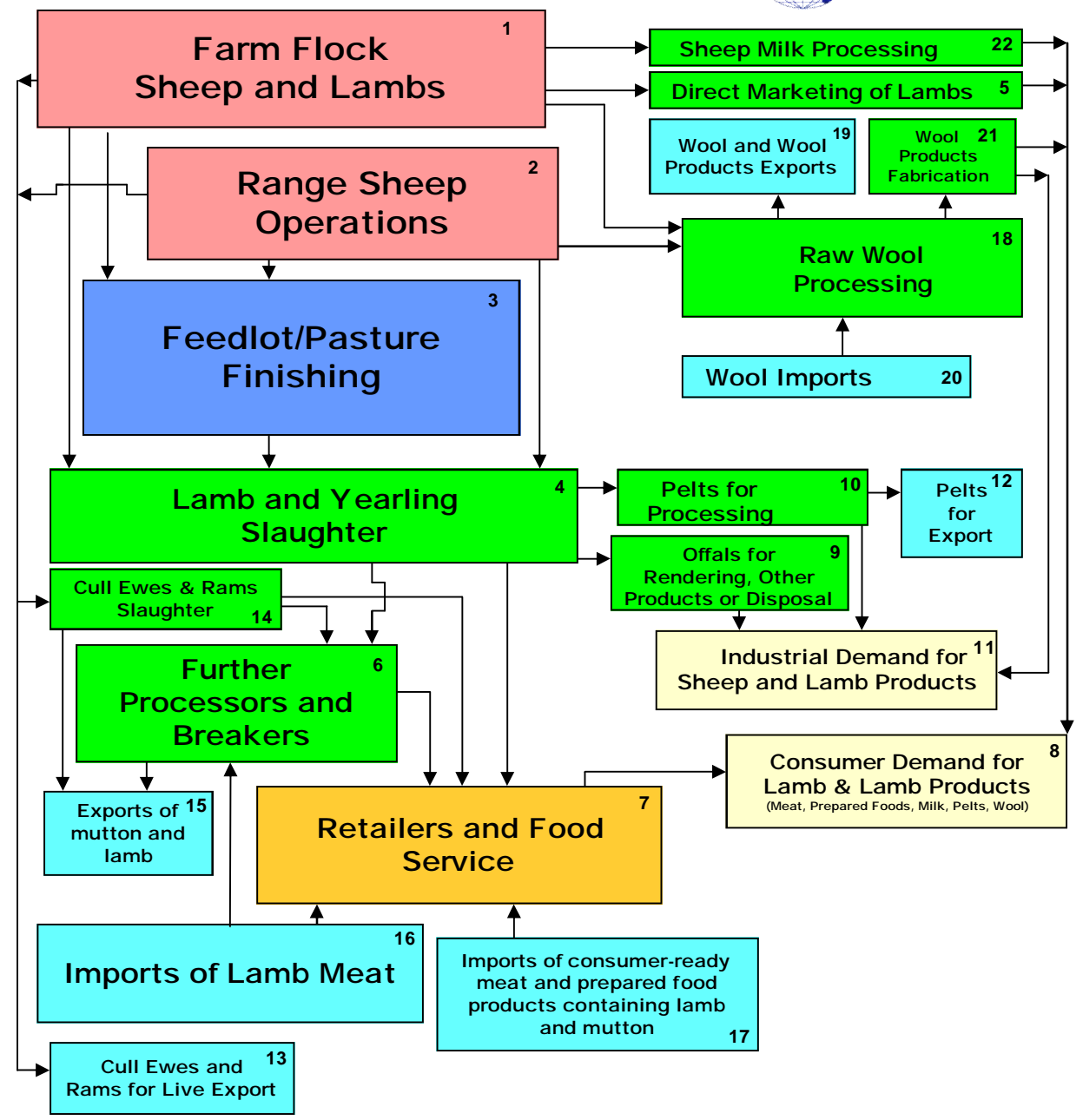
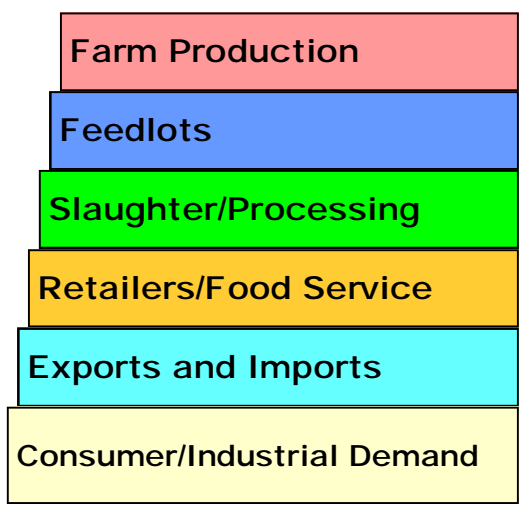
RETAILING/CONSUMERS



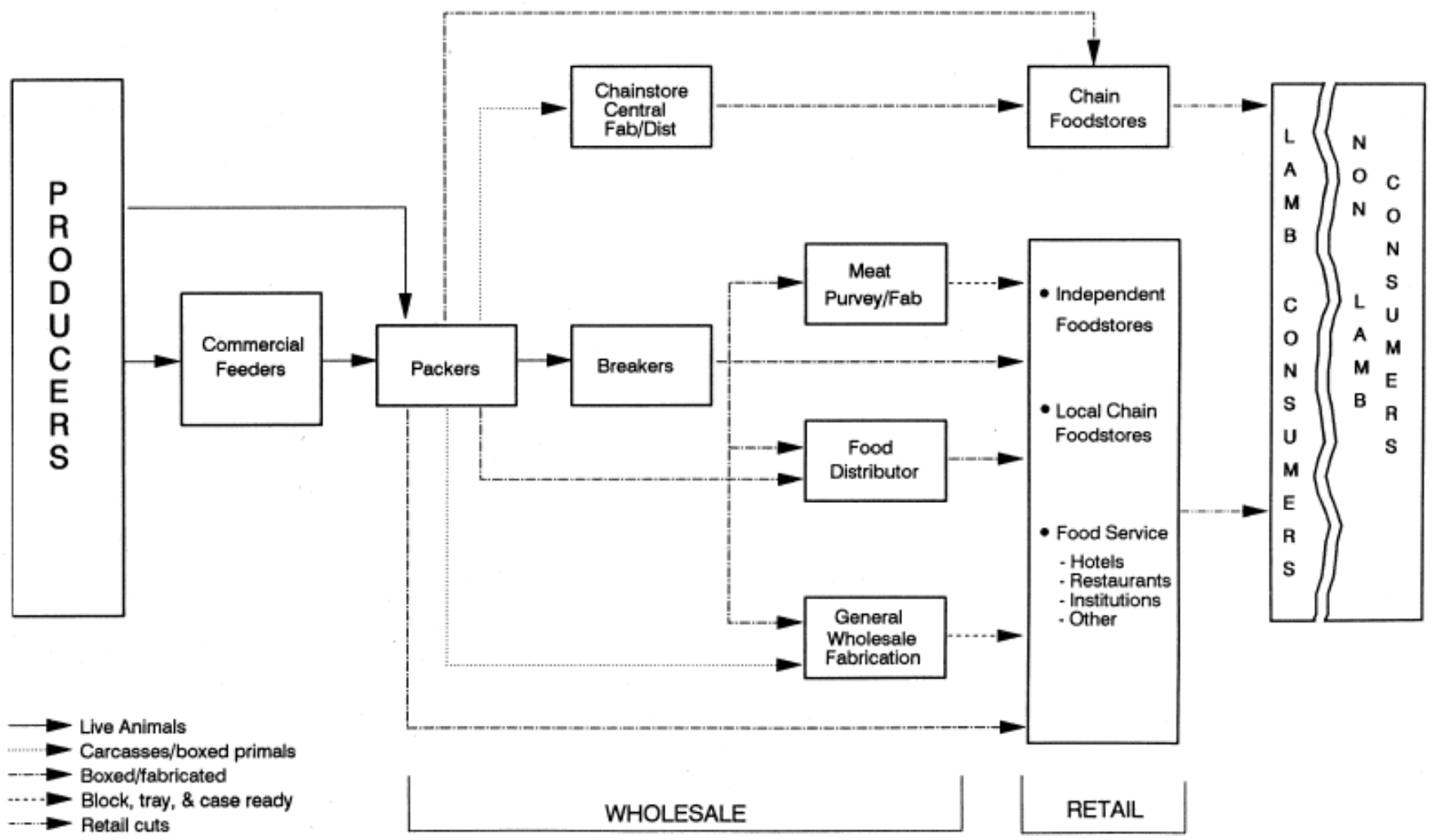


SHEEP INDUSTRY VALUE CHAIN

The flow of sheep and lamb through marketing channels from production to end uses



SHEEP AND LAMB MARKETING CHANNELS



What is the economic contribution of animal agriculture to the U.S. economy?

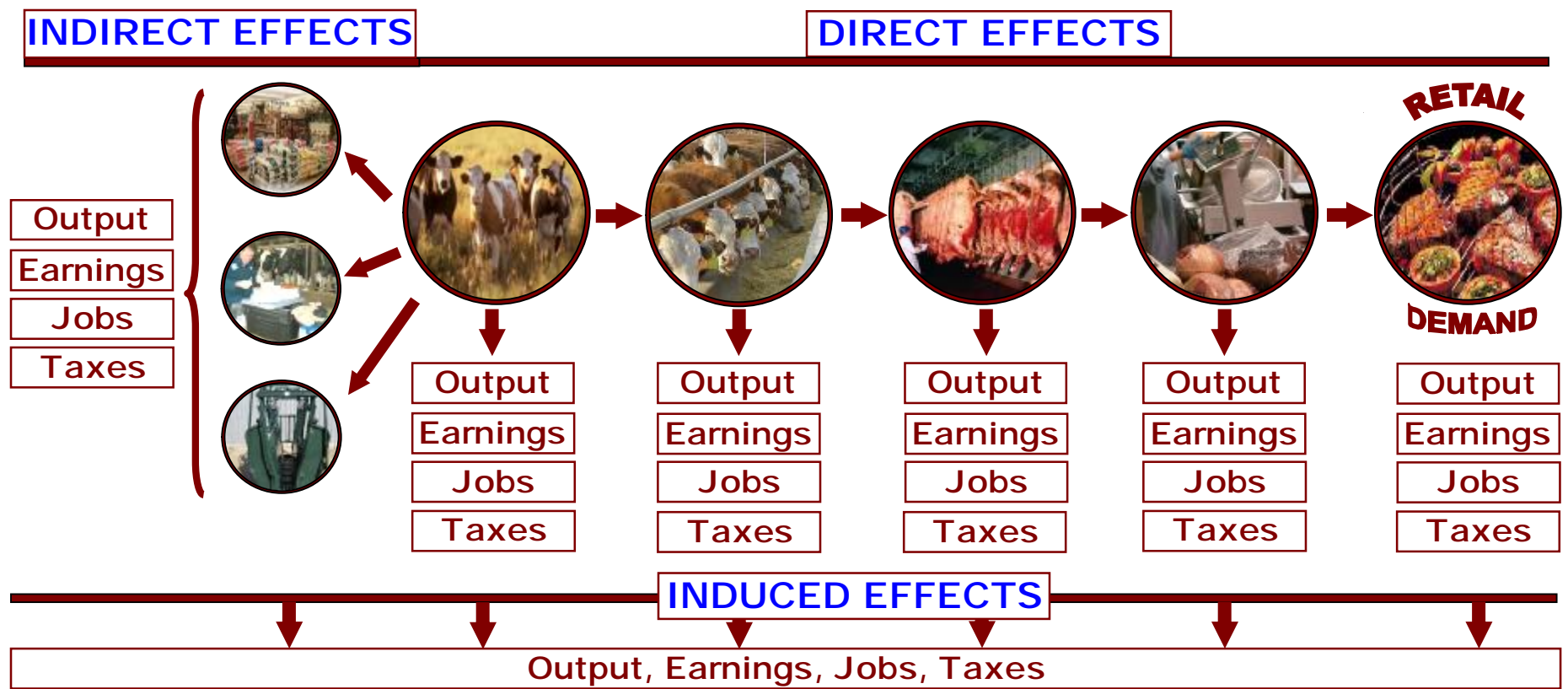
What would be the loss in GDP , jobs, wages, and tax revenues if the livestock industry ceased to exist?

The analysis BEGINS by measuring the jobs, revenues, wages and taxes generated by the industry down its supply chain.

The **DIRECT** Effects: Value of output, jobs and wages created, taxes (state, local) generated down the supply chain

The **INDIRECT** Effects: Value of output, jobs and wages created, taxes (state, local) generated through backward linkages

The **INDUCED** Effects: Spending by industry and supplier employees which generates output, jobs and wages, and taxes



Impacts at each level usually measured with an Input-Output (IO) Model:

- Regional Industrial Multiplier System (RIMS II)
(Bureau of Economic Analysis, U.S. Dept. of Commerce)
- Impact Analysis and Planning Model (IMPLAN)
(Minnesota IMPLAN Group, Inc.)

Few estimates of the economic contribution of animal agriculture to the U.S. economy.

Promar International, "Animal Agriculture Economic Analysis, 1997-2006," Oct. 2007

Economic Impact of Animal Agriculture (Promar International, 2007)

Output (\$ million)	Earnings (\$ million)	Employment (jobs)	Taxes* (\$ million)
\$451,357 (3.4% of GDP)	\$83,613	3,364,332 (2.3% of U.S.)	\$21,414

* Income, sales, property

Economic Impact of the Meat Industry (John Dunham & Assoc., 2009)

Output (\$ million)	Earnings (\$ million)	Employment (jobs)	Taxes* (\$ million)
\$832,404 (6.3% of GDP)	\$199,692	6,193,639 (4.2% of U.S.)	\$83,651

* Income, sales, property

Economic Impact of Cattle Industry (Otto and Lawrence, 2000)

Output (\$ million)	Earnings (\$ million)	Employment (jobs)	Taxes* (\$ million)
\$188,457 (1.4% of GDP)	\$46,455	1,421,137 (1.0% of U.S.)	

* Income, sales, property

Economic Impact Sheep and Lamb Industry (Shiflett, 2008)

Output (\$ million)	Value Added* (\$ million)	Employment (jobs)	
\$2,176 (0.002% of GDP)	\$1,198	91,524 (0.1% of U.S.)	

* Earnings plus taxes

Results are dependent on:

- Multipliers used
- Choice of region or industry
- Data used
- Aggregations and other assumptions made

Results do NOT account for the effects on feedgrain production and all of its forward and backward linkages.

Results do NOT account for global impacts and earnings (U.S. held foreign operations).