

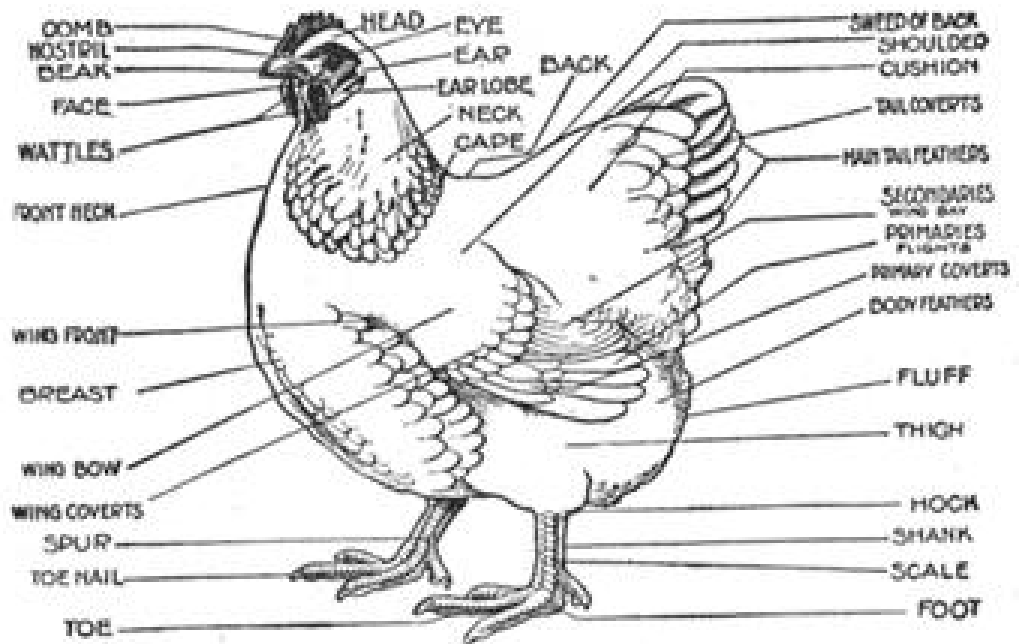
Two Examples of Commodity Chains: Poultry and Pork in the United States

Because the concepts of commodity/food chains or circulation systems are so fundamental to an understanding of current food supply, two examples will be discussed in some detail:

Poultry

In the 1930s, feed dealers in the American south realized that they might be able to expand their business by providing farmers with newly hatched chicks and feed for the birds on credit. The farmers would be able to repay the loans when the birds were sold. Until this time, most farm across the United States had a small barnyard flock of chickens that survived by scavenging and getting

handouts from the farmer's wife who usually had responsibility for the birds and took the profits from selling eggs in the town. The birds were harvested for meat at the end of their useful life as layers, and chicken was reserved for a Sunday dinner. The mass production of chickens, called broilers, has so revolutionized poultry production that chicken is now the cheapest meat in the United States and the most commonly consumed.



Today chickens are produced in the following way:

- Large agribusiness companies operate hatcheries, feed mills, and processing plants.
- They deliver day-old chicks to the farmers.
- The farmers are responsible for building a house and maintaining proper temperature and water.
- The companies come to the farm to fill the feed bins once a week and guarantee the farmer a price for the birds.
- When the birds are ready for market, the companies collect them from the farm for processing and marketing.

Most of the nation's poultry supply is handled by a half-dozen large corporations that control the process from chicks on farms to chicken pieces in stores. Over the years, selected breeding has produced a very

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efficient chicken. In 1940, it took about 17 pounds of feed and about 15 weeks to produce a four-pound broiler. Forty years later, it took only eight pounds of feed and 7 to 8 weeks to produce the same size bird. In that same forty years, the size of the operations increased dramatically. Broiler houses that contained 1,500 birds were considered large in 1940, but now, contemporary broiler houses hold 20,000 birds or more. In addition, mechanization of water and feeding operations has reduced labor requirements from about 250 hours per thousand birds in 1940 to fewer than 25 hours today.

Broiler production is an attractive option for small farmers because it requires only a few hours of labor a day, which allows time for off-farm employment. Broiler production is concentrated in intensely specialized areas that are widely scattered. The modern broiler industry developed on the eastern seaboard before World War II. It then grew rapidly in northeastern Georgia and northwestern Arkansas immediately after the War. Subsequently, concentrations developed in central Mississippi, northeastern and northwestern Georgia, the Piedmont areas of North Carolina, and the Shenandoah Valley area of Virginia .

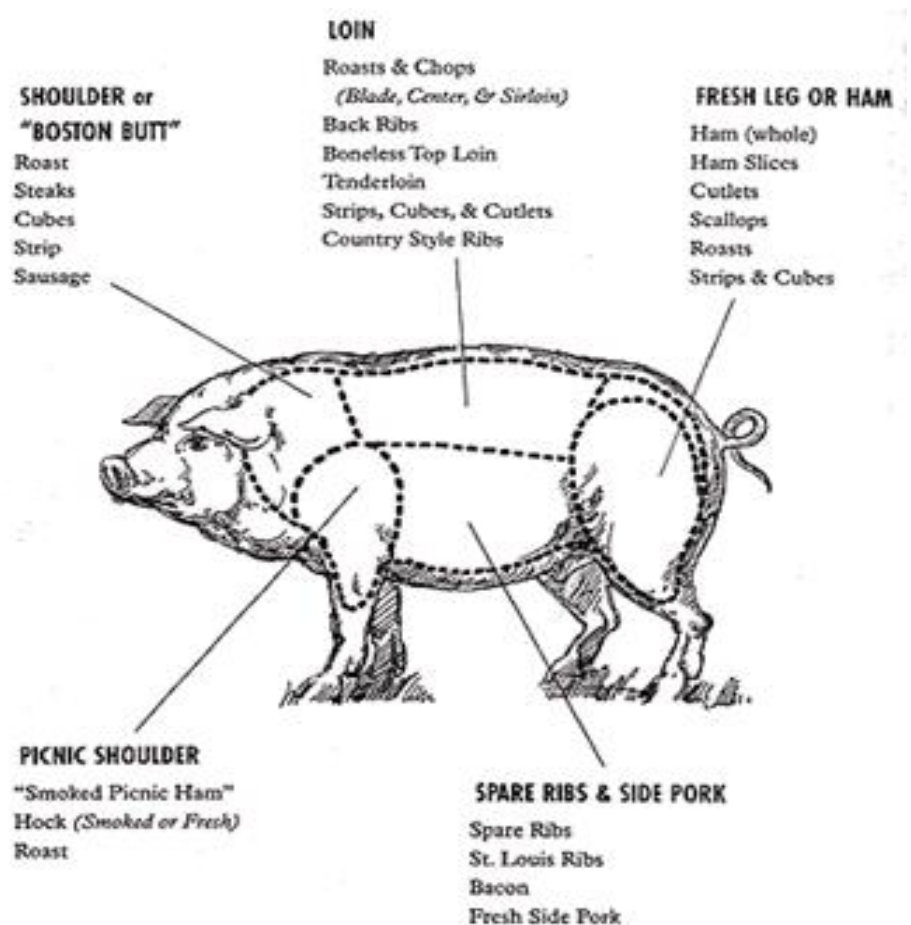
Many people believe that the broiler production process is manufacturing and not farming, because it is not directly connected to the land. The areas that produce large numbers of chickens are districts that are feed deficient. That is, the feed that is consumed by the birds has to be shipped in, primarily from the Midwest . The long, low one-story broiler houses are essentially factories that use birds as machines to convert the raw materials corn and soy beans into a finished product — meat for human consumption.

Chickens are also efficient producers of manure, and one of the major issues of broiler production has been the disposal of the manure. While ideally it should be returned to the land because it's excellent fertilizer, manure is fed back to animals. The manure is rich in protein, and after it has been dried and flavored with molasses, it looks like soy bean meal and can be fed to either chickens or cattle.

Pork

In the last decade, there has been a dramatic change in the distribution of hogs. Currently, the center of pork production is in an area that is on the fringe of the most productive region in North America. Pork is concentrated in North Carolina, Texas , and Oklahoma . One county alone in Oklahoma produced 2 million hogs. It is the center of an area that produced four million hogs which is four percent of the national total, and one-seventh of the total hog production of Iowa.

These hog farms are significantly different than the traditional farms of the Midwest. They look more like chicken or turkey houses than traditional hog pens. Each farm has long, low metal buildings. The structures are in rows on dry ground and they tend to be located in the



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corners of large fields. The larger area of the field is under a center-pivot irrigation system that creates a large circle of cropland. The hog manure is flushed from these houses into a lagoon where the solids settle, liquid evaporates and bacteria break down the fecal material. At appropriate times, the liquid in the lagoon is pumped out on the fields and cycled through the center-pivot irrigation system and put back on the land. These farmers work on contracts and are receiving 14-day old piglets weighing about a dozen pounds. The piglets are held on the farms in various pens until they reach about 275 pounds and are approximately six months old when they are transported to a processing plant.

Pork production is vertically integrated. Processors have built slaughterhouses in these production regions that can handle around a thousand hogs an hour. Therefore, without stretching the system, about 2 million hogs can be processed in a year. Corporations such as Seaboard Corporation, Inc. — a diversified international food-producing region with operations throughout the world raising shrimp and fish, marketing various kinds of grain — dominates the pork production region in Oklahoma. The scale of these operations is enormous. Farmers contract with the processor to deliver between 300,000 and 500,000 hogs a year. The Oklahoma Panhandle is able to engage in this intensive hog production because of the adequate supply of groundwater from the Ogallala Aquifer. Water for irrigation is inexpensive, and the natural gas used to pump it is also cheap. The local farmers are able to produce good crops of feed grain, such as corn and sorghum, for part of the ration for the hogs.

According to U.S. government figures for 1997, the highest ranking counties in terms of the value of hogs and pigs sold were Samson County in North Carolina with \$511,000 and in Upland North Carolina with \$510,000. Most of the concentration of pork is still within the traditional corn-belt. In 1997 Iowa ranked number one, Minnesota three, Illinois four, Missouri five, and Indiana six. If we look at numbers of animals 1997, there were 61 million hogs in the United States.

In response to these large-scale pork palaces in North Carolina and Oklahoma, traditional pork producers in the corn-belt have had to change their ways of production. Gone are the days of small hog feedlots on farms that were engaged also in a variety of crop production activities. Today the Midwest is also changing itself into a pork factory operation through contracting. In the Midwest, companies like Hormel Foods, Cargill Inc., and Land 'o Lakes — a farmer cooperative — are in pork production in all forms. The companies have pig breeding farms, they supply the young pigs to the farmers and then provide feed as well as veterinarian service. The farmer is guaranteed a price for the pork if the farmers are raising the hogs according to the instructions of the company. This enables the farmers to have access to the most highly developed breeds of hogs and to market their hogs without worrying about fluctuations in the price of pork. This in turn enables the corporations to have a ready market for their grain. A typical family-operated farm in Minnesota would have about 4,000 pigs on the farm at any given time.

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Commodity Chains (Poultry & Pork) Q&A

Directions: All answers must be put in your own words (paraphrased), not simply copied (plagiarized). You may need to look at various thematic maps. Therefore, some information may need to be researched on the web.

1. How are chickens produced today as compared to the past?
2. How many pounds of feed and how many weeks did it take to produce a four-pound broiler in 1940? In 1980?
3. How and why is the chicken manure fed back to them?
4. Where is the center of pork production in the U.S. today?
5. In what way do modern hog farms look more like chicken or turkey houses than traditional hog pens?
6. Explain how the Midwest is changing itself into a massive pork factory operation.

Changing Demand

7. Where in the U.S. were broiler chickens primarily raised in 1929? Where are broilers mainly produced today?
8. How much more chicken do we eat today than Americans in the 1930s?

Changing Prices and Costs

9. What was the average price per pound for a chicken in 1950? In 1985?
10. How specifically do economies of scale affect the price of chicken? How does site and situation affect the price of chicken? (Cite two examples for each)

Changing Production Methods

11. Why are most chickens raised in "broiler houses" and not outdoors? (Cite two reasons)
12. Explain how large producers such as Purina and Perdue are vertically integrated.

Consequences and Questions

13. How do the average wages of a poultry processing worker compare with the average wages of all US factory workers?
14. List some of the tasks a chicken-factory line worker must perform.
15. List two factors that will determine the future of the broiler production and chicken processing industries?