

2. Changes in Poultry Demand

Per capita poultry consumption has grown consistently over the last 40 years (table 2.1) and now exceeds beef and pork consumption. During the 40 years preceding 1950, however, poultry consumption varied between 15 and 25 pounds per capita and, on average, amounted to about 20 pounds per capita, a level about one-third that of either beef or pork. The highest consumption occurred during WWII because, due to its secondary status in the American diet, poultry was not covered by rationing.

During the pre-1950 period, farmers viewed poultry raising as a way either to produce eggs or to put spilled grain, grass, and insects around the farm yard to productive use. Chickens for consumption were either those not needed for egg production or surplus animals. Chickens intended for egg production were hatched in the early spring, and, since many young males were not needed for production, they were slaughtered together with cull hens during the summer months. Large numbers of hens were slaughtered in the late fall when seasonal egg production dropped off. Some hens and a couple of roosters were often held over to hatch out new chicks the next spring.

The integrated structural form for producing chickens emerged during the 1950's and 1960's. In this integrated form, the chicken slaughter plants and feed mills are owned by a single firm and make contractual chicken-supply arrangements with chicken growers who agree to raise baby chicks provided by the slaughter plants and then return them to the plant after the grow-out period. This arrangement permits a steady supply of live chickens for slaughter and allows the chicken integrators to control the quality of incoming birds (see chapter 4 for a more detailed discussion). Bugos asserts that this highly integrated structure, in which growers provided uniform-quality birds combined with ever-increasing line speeds and more efficient feeding operations, enabled chicken slaughter plants to realize scale economies over the 1950-60 period (Bugos et al.).

Chicken quality also changed dramatically as specialized meat-type chicken breeds began to dominate chicken production. Before 1952, most chicken meat came from mature hens used for egg production, but by 1960, young chickens raised for meat consumption (broilers) made up nearly 85 percent of chicken purchases, and, by 1999, close to all chicken purchases. Broilers tend to have moister, more tender chicken

meat and larger breast portions than birds intended for egg production.

The building of more highly specialized broiler processing plants in the 1960's drove down prices by enabling faster line speeds. Chicken-manufacturing yields also improved as plants installed chicken cut-up lines that better utilized whole birds that could not meet USDA-inspected Grade A standards and as chicken breeders developed larger birds, which have lower labor costs per pound than smaller ones.

Chicken consumption over the 1960-77 period was stimulated by a decline in its price from one-half that of beef to about one-sixth and by the introduction of popular new products, such as traypacks (table 2-1). After 1977, chicken marketers emphasized the lower saturated fat content of chicken relative to beef and introduced a stream of new products ranging from deboned ready-to-cook products to luncheon meats to chicken nuggets and patties for restaurant use. Marketers also introduced chicken products to non-traditional vendors, such as fast food restaurants. Today, fast food restaurants sell huge quantities of chicken in many forms, including breaded chicken parts, nuggets, patties, breast filets, tenders, and popcorn chicken.² Many of these products are also available in the frozen food section at grocery stores. Marinated whole birds have become popular items for takeout meals at both fast food restaurants and supermarket delis, and probably account for the increase in the percentage of birds sold whole at retail between 1995 and 1997 from about 12.5 percent to 13.2 percent, a reversal of at least a 35-year trend toward fewer whole birds.

The transformation of chicken production from a simple slaughter and package operation into more specialized processing operations is evident from whole-bird consumption patterns. As shown in table 2-2, whole broilers accounted for over 87 percent of the birds consumed in the United States in 1962, but only about 13 percent by 1997. This shift away from whole birds toward more convenient products enabled broiler production to grow by about 5 percent per year over the last 40 years.

² Company records indicate that McDonald's introduced Chicken McNuggets throughout the United States in 1983 and that, by 1984, McDonalds had become the second-largest purveyor of chicken in the world.

Marketing efforts to segment the chicken market encouraged export growth and more use of further processing. Domestic consumers prefer breasts and other white meat and are willing to pay much higher prices for these products than for whole birds or dark meat (thighs and drumsticks). Responding to these preferences and the increased demand for further-processed products, chicken producers attached cut-up operations to the end of slaughter lines, reserved breasts and other white meat for domestic consumption, moved much of the dark meat into the export market, and used the remainder for further processing.

The growth in exports was a sharp change from the past. As recently as 1975, the export market amounted to no more than 200 million pounds and had never been more than 5 percent of production. However, exports doubled in 1976 from 1975 levels and grew each year through 1981. Slow production growth in 1982 and 1983 (table 2-3) restricted broiler meat availability, limiting exports. Since 1984, exports have increased every year, reaching 4.7 billion pounds and 17 percent of production in both 1997 and 1998 (table 2.1).

Increased further processing came a little later for the turkey industry, with most of its growth coming in the 1980's. Turkey consumption was less than 3 pounds

per capita in the 1930's and 1940's, but doubled by 1960, as turkey firms developed specialized bird breeds that yielded more breast meat. By 1980, consumption had risen to 10 pounds, and, with the introduction of turkey luncheon meats, turkey ham, sausages, and deli products, consumption grew to 18 pounds in the early 1990's (table 2-1).

Fast food and restaurant markets have not been nearly as receptive to turkey as to chicken, but the export market has been an important outlet for dark turkey meat (thighs and drumsticks), with Mexico being the leading market. A large quantity of mechanically separated turkey meat is also exported to both Mexico and Russia. Turkey exports were particularly strong during the 1990's, reaching a level of about 10 times that of the 1980's.

Branded products have been important for both chicken and turkey producers. In the late 1960's, some of the leading poultry companies established their own processing plants and started marketing branded products in addition to private and store brands. Consumers perceived the branded products to be of higher quality than private labels, permitting a significant price premium. The presence of branded, private, and further-processed product markets permitted chicken slaughter plants to use birds that did not meet

Table 2-1: Poultry consumption, prices, and exports, 1960-99

Product	1960	1963	1967	1972	1977	1982	1987	1992	1997	1999
<i>Retail pounds</i>										
Per capita consumption										
Chicken ¹	27.8	30.8	32.4	41.7	40.2	47.0	57.4	67.8	72.7	78.8
Turkey	6.3	6.9	8.7	9.0	8.8	10.6	14.7	17.9	17.6	17.8
Beef	64.2	69.9	78.8	85.1	91.5	76.9	73.7	66.3	66.9	65.4
<i>December price</i>										
Retail prices²										
Chicken	41.0	40.0	37.4	41.2	57.7	68.2	73.6	87.9	100	106 ³
Turkey	55.3	49.1	47.2	56.7	83.0	89.2	89.3	93.0	106	n.a.
Beef	80.2	78.4	85.8	238	309	467	486	287	280	301
Consumer Price Index deflator⁴										
	3.37	3.27	2.99	2.39	1.65	1.04	0.88	0.71	0.62	n.a.
<i>Million pounds</i>										
Net exports⁵										
Chicken ⁵	137	157	88	100	349	524	767	1,530	5,043	4,421
Turkey	24	31	49	36	54	51	33	202	605	400

n.a. = not available.

¹ Includes broilers and mature hens.

² Prices are whole fryers for chickens, young hens for turkeys, and weighted composite of Choice beef for beef.

³ Year average.

⁴ The CPI deflator is the reciprocal of the CPI.

⁵ Includes broilers and mature hens.

Sources: Published in various issues of *Livestock, Dairy, and Poultry Situation and Outlook*, USDA, ERS. Early data also in *Poultry Yearbook* and *Red Meat Yearbook*, USDA, ERS.

Table 2-2: Poultry sales, 1963-97

Raw product	1963	1967	1972	1977	1982	1987	1992	1997
<i>Percent of total slaughter production</i>								
Cut-up and deboned								
Chicken	15.2	21.9	29.6	38.2	48.1	56.1	78.2	86.9
Turkey	3.4	6.8	16.7	22.5	29.9	36.6	55.1	n.a.
Whole birds								
Chicken	84.8	78.1	70.4	61.8	51.9	43.9	21.8	13.1

Sources: Economic Research Service, *United States Egg and Poultry Statistical Series, 1960-90* (U.S. Department of Agriculture, 1991); National Turkey Federation, unpublished survey data and National Chicken Council, Marketing Practices Surveys, for various years.

USDA Grade A standards for further processing; birds that just meet Grade A specifications for private brands; and birds of the highest quality for their own branded products.

Attempts to differentiate the branded products from competitors' products have included more expensive packaging, more appealing skin color through the use of feed ingredients, and advertising campaigns stressing the high quality of the product. Skin color does not in itself add to quality, but it does serve as an indicator of whether the bird was raised with a modern feeding technology that does deliver higher quality, and, thus, skin color became associated with quality characteristics. As additional producers adopted modern feeding practices, color was no longer a unique indicator. However, brand names had been established by then and carried a perception of higher quality.

Table 2-3: Bird size and amount slaughtered, 1960-98

Year	Liveweight per bird		Number of birds slaughtered		
	Broilers	Turkeys	Broilers	Mature hens	Turkeys
	<i>Average pounds</i>		<i>Million birds</i>		
1960	3.36	15.06	1,534	110	71
1963	3.47	16.13	1,835	129	82
1966	3.49	16.63	2,242	151	103
1969	3.60	17.84	2,516	154	95
1972	3.73	18.17	2,936	186	121
1975	3.76	17.75	2,922	176	119
1978	3.89	18.87	3,516	191	132
1981	4.01	19.07	4,076	202	166
1984	4.17	19.80	4,273	187	164
1987	4.29	20.31	4,971	198	231
1990	4.37	21.25	5,841	181	271
1992	4.51	21.71	6,425	177	281
1994	4.63	22.70	7,072	168	279
1996	4.78	23.65	7,546	154	292
1998	4.86	24.63	7,838	170	273