

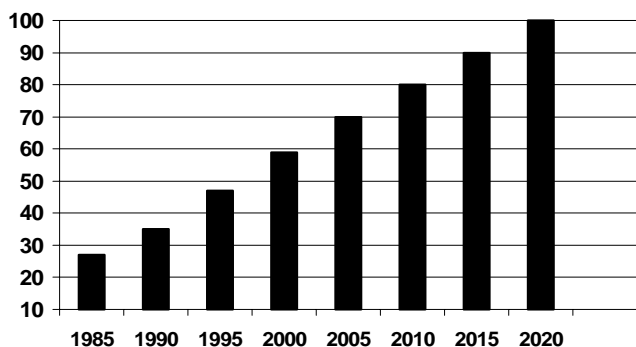


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The Three-Legged Stool

Over the last few decades the world chicken industry has enjoyed rapidly rising production. From 27 million metric tons (MMT) in 1985, world production rose to 70 MMT in 2005 and could reach 100 MMT in 2020.

World Chicken Production MMT 1985-2020



The success of the chicken industry can be thought of as resting on a three legged stool like the Gaucho chair from South America pictured below. One leg is the cost of chicken, another is consumer income and the third is the willingness of consumers to eat chicken. To predict the short or long term prospects for the industry in any given country of the world as a whole requires knowledge about cost, preferences and income.



Cost

The chicken industry has been remarkably good at reducing costs over the last several decades. A combination of tools including chicken genetics, disease control, economies of scale and cheaper grains has gotten the job done. The readers of this bulletin are familiar with the dramatic improvements in chicken genetics which can be seen in the next table. In 1925 it took 16 weeks to reach just one kilo of live weight. Now 2.5 kilos can be achieved in just 42 days. Equally important has been the improvement in feed conversion from 4.7 to 1.7. There is every indication that genetics will continue to improve in the next few decades although perhaps not quite as dramatically as in the 20th century.

CHICKEN GENETICS

Year	Weight	FCR	Mortality	Age
1925	1.0	4.7	18	112
1965	1.6	2.4	6	63
2005	2.4	1.7	4	42

Less appreciated have been the equally remarkable improvements in grain genetics and crop farming. The combination of better seeds, larger farms, modern machinery and less expensive fertilizer brought down the price of corn during the 20th century by 75%.

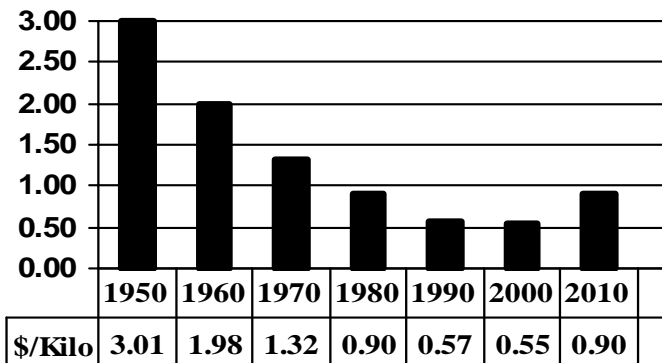
Unfortunately, at the start of the 21st century grain prices are going the wrong way (no fault of grain genetics) by the diversion of massive amounts of grain into the production of fuel. The sudden destruction of 30% of the US corn crop doubled costs of all grains and shocked the animal industries of the world.

Price in Chicago of a Metric Ton of Corn (in year 2000 dollars)

1900	\$400
2000	\$100
2010	\$200

The combination of better chicken and grain genetics as well as all the other technological advances brought the cost of live chicken down from \$3.00 per kilo in 1940 to just \$0.55 cents in 2000. Unfortunately the sudden rise in the cost of grain is much more significant than the continued gains in genetics and other areas. As a result, the cost of live chicken may well return to the levels of the year 1980 by 2010. Thanks to the worldwide confiscation of feed to make subsidized fuel, 20 years of progress in reducing the cost of chicken was wiped out in just the last three years. Although these numbers are from the US, other countries have had similar experiences in live cost of chicken.

Inflation Adjusted Cost of Broiler Live Production (2000 \$'s/kilo)



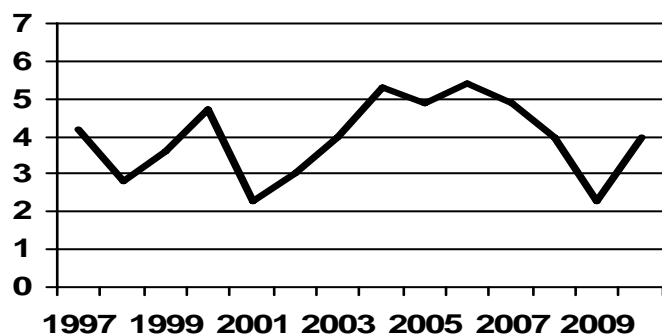
In the short term, the cost leg of the stool is a problem. All else being equal, the ability of consumers to purchase chicken is diminishing with higher chicken costs. In particular lower income people will purchase less chicken and other meats as costs rise. In the long run it can be expected that politicians will come to their senses and reduce the burden imposed on food and feed grains by the massive subsidy of biofuels. Therefore, the cost problem is, most likely, a short-term problem.

Income

Consumer income is just as important as chicken cost in the ability of consumers to purchase chicken. If income rises fast enough, higher cost of chicken will not affect consumption. However, if income falls during a period when the cost of chicken is rising, then consumption can be expected to be more seriously affected.

Using world Gross Domestic Product (GDP) as a proxy for consumer income, it can be seen in the following graph that world income rose vigorously between 2003 and 2007. However, a weakening in North America and Europe will tend to drag world income growth down for the next year or so before acceleration begins again in 2010. The world economy will not be dragged down too far by North America because the economies of the developing world are now robust enough to be affected less by the United States than in the past.

Percentage Increase in World GDP



This is a perfectly normal business cycle; in the short run consumer income will be rising at a slower rate than normal. After a period of time worldwide consumer income will accelerate once again.

Consumer Preference

Chicken is not always the favorite meat in every country. However, chicken has two significant advantages that other meats cannot match:

- 1) Being accepted in all cultures
- 2) Converting grain more efficiently than other meats

In a time of high grain prices and weak consumer income, the popularity of chicken meat increases as consumers switch some consumption of meat from beef and pork to chicken. With a better conversion ratio of grain to meat, the cost of chicken meat rises less than the cost of other meats. The longer grain prices remain high the more of a bargain chicken will be compared to other meats.

Conversion Ratios

Beef	8 to 1	(feedlot cattle)
Pork	3 to 1	
Chicken	2 to 1	

Chicken can expect to gain market share rapidly over beef and pork as the cost of those meats increase substantially. Nevertheless, in the extremely short run, beef and pork prices will fall in price as herds are liquidated in the face of higher grain prices. Once the liquidation is done, prices will rise to much higher levels.

Animal diseases can also have an effect on consumer preference. In 2006 fears of bird flu reduced the worldwide consumption of chicken meat from what it otherwise would have been. Most of the effect was short-lived. After consumers understood the vanishingly small risk represented by the disease to humans, consumption rebounded.

World Prediction

Two of the three legs of the stool are looking weak for the chicken industry in the next year, cost and consumer income. The third leg is strong with chicken gaining market share from other meats. As a result there is likely to be a smaller than average increase in chicken consumption over the next 12 months. After a robust 4% increase in world consumption of chicken meat in 2007 the increase may fall to just 2 1/2% in 2008.

After 2008, chicken production should accelerate. All three legs of the stool will become stronger. When grain prices stop rising, the cost of chicken will level off and begin to fall again. After a short slowdown, consumer income should begin rising in 2009 as well. The preference for chicken meat will grow in the future as well, thanks to the unique advantages of chicken meat.

Leg of the Stool	Short Term	Medium Term
Cost of Chicken	Getting more Expensive	Cost stops rising or falls
Consumer Income	Growing slowly	Faster growth
Preference	Gains market share fast	Gains market share slowly
CONCLUSION	Slightly less Favorable	More Favorable

Percentage Increase in Chicken Meat

