

The relationship between food prices and animal welfare.

Abstract

The proportion of income spent on food has been in steady decline. Most people could readily pay more for food. Indeed, most consumers already pay more than necessary by buying specialized products or convenience foods. But there are costs associated with cheap food produced from animals that reach well beyond the dollars paid by citizens at the checkout register of a supermarket or fast-food restaurant. A morally significant effect of pressure for cheap food production has been modifications to production methods that may have effects on animal welfare (e.g., by decreased space allowances). Cheaper food for humans sometimes involves greater pain and suffering for food animals; however, improvements, possibly even major improvements, in welfare could be achieved with only small increases in price to the consumer. The obstacle to change is in part economic inertia; producers resist change because buyers expect low prices. Deployment of public subsidies and gradual change could avoid these short-term effects, although protection is needed against imports from countries with even lower welfare consideration and environmental standards. From the viewpoint of doing what is appropriate for animal welfare and the environment, free-market competition should no longer be the sole determinant of food prices. Animal scientists can serve the long-term interests of animal agriculture by combining efforts to do the right thing for the welfare of animals with more traditional goals, such as increasing production efficiency.

[Animal Welfare](#), [Competition](#), [Consumers](#), [Economics](#), [Food Prices](#), [Retail](#)

Introduction

The proportion of income spent on food has been in steady decline. It was typical in the 1940s for people in developed countries to spend between one-fifth and one-third of their income on food, but now approximately 10% is typical (ERS, 2004). In practical terms, the increase in economic efficiency of agriculture has been spectacular, and broiler production provides probably the strongest example. In the postwar period, a meat bird took more than 13 wk to grow to 2 kg and cost the equivalent of what is now approximately \$50. Today, because of genetic selection and changes in management, it takes less than 6 wk and costs under \$3 (Hewson, 1986; Etches, 1996). Dairy production is another extraordinary demonstration of this effect. Milk production involves maintenance of cows and many other complex processes with effects on staff, the local community, and the environment. Yet, in supermarkets in some countries, milk is often less expensive than water (personal observation).

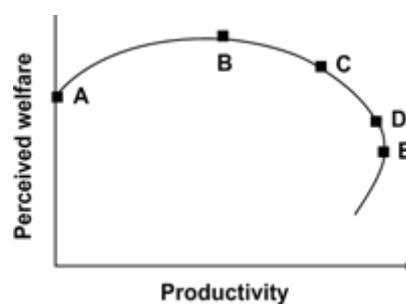
Most people could readily pay more for food. Indeed, most consumers already pay more than necessary, by buying specialized products or convenience foods (McInerney, 1998; Layton, 2004). But there are costs associated with cheap food produced from animals that reach well beyond the dollars paid by citizens at the checkout register of a supermarket or fast-food restaurant (Tegtmeier and Duffy, 2004). A morally significant effect of pressure for cheap food production has been the modifications to production methods that may have effects on animal welfare.

Animal Welfare and Production Costs

The relationship between animal welfare and production costs is complex, partly because welfare is itself complex. Producers often claim that the welfare of their animals is satisfactory. The National Pork Board (NPB, 2005), for example, says that: “Because the welfare of their animals directly affects their livelihood, pork producers work to ensure their animals are treated humanely. Anything less would be self-defeating.” This statement indicates an emphasis on those physical aspects of welfare that are associated with production; however, it is recognized that people vary in their attitude to welfare, emphasizing either physical aspects, mental aspects, naturalness, or a combination of these (Fraser et al., 1997). The three approaches also can be identified in other delineations of the concept of welfare, such as the idea that animals should be allowed five freedoms (FAWC, 1997); these include freedom from physical problems such as disease and mental problems such as hunger, as well as freedom to perform normal or natural behavior. Different aspects of welfare do not necessarily correlate and may even be incompatible, so there is no simple relationship between welfare and cost.

There are many instances where improvement of welfare will decrease the costs incurred by farmers (e.g., measures to decrease disease and mortality). However, there are others where improving welfare would increase costs (e.g., increasing space allowances for livestock). Sometimes increased costs can be offset by increased income, by obtaining price premiums for products that are perceived to be associated with high welfare, such as free-range eggs (Fisher and Bowles, 2002).

Some of these complexities have been modeled by Bennett (1997) and McInerney (1998; see Figure 1 [↓](#)). Imagine that humans are starting to exploit animals, at Point A on the graph. This model assumes that up to Point B, animals and humans derive mutual benefit from their association. Point B marks maximum welfare for animals, with some benefits for humans; however, maximum output of animal products for human benefit would be achieved at Point E, at a cost to animal welfare, and exploitation beyond this point would decrease production. The decision for society is where on the curve from B to E should we be? Society may decide that anything beyond D constitutes cruelty; however, it may also be that if we really knew society’s preferences, then we should rather be at Point C (i.e., achieving a lower level of production but with higher welfare; Bennett, 1997).



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Figure 1.

A model of the relationship between animal welfare and productivity (after [Bennett, 1997](#); [McInerney, 1998](#)). Imagine that humans are starting to exploit animals, at Point A on the graph. This model assumes that up to Point B, animals and humans derive mutual benefit from their association. Point B marks maximum welfare for animals, with some benefits for humans; however, maximum output of animal products for human benefit would be achieved at Point E, at a cost to animal welfare, and exploitation beyond this point would decrease production.

One example of a decrease in welfare arising from increased production, represented by the part of the curve between B and E, is that selection of pigs for higher growth rate in piglets has meant that pregnant sows cannot be fed ad libitum or they become obese ([Whittemore, 1998](#)). On the restricted food allowances that they are given commercially, sows are continuously hungry ([Lawrence et al., 1988](#)), and when they are kept in housing that prevents foraging behavior, they develop stereotypic (repetitive) behavior indicative of frustration ([Appleby and Lawrence, 1987](#)).

Pressure for Reduced Costs

The pressure for lower production costs is not simply attributable to individual farmers. It is sometimes described as a consumer demand for cheap food, including by the animal production industry ([Worldwatch Institute, 2004](#)) and governments ([DEFRA, 1998](#); Reynells, 2004). It is not surprising, indeed it is reasonable, that offered two otherwise similar products most shoppers will buy the cheaper; however, this is not the main pressure for economic efficiency. This pressure was initiated by public policies before, during, and after World War II, in favor of more abundant, cheaper food ([Williams, 1960](#)). It subsequently became market-driven, with competition between producers and between retailers to sell food as cheaply as possible, and thereby acquired its own momentum ([Tudge, 2004](#)).

That consumer behavior is not the main driving force behind on-farm efficiency is demonstrated by data showing that little of the consumer's money actually reaches farmers. It is estimated that only 19 cents of each dollar spent on food by the consumer goes to the farmer, the rest being accounted for by packaging, transport, marketing, and so on ([ERS, 2004](#)). The increasing extent to which this is true adds to the decrease in food prices to produce an even sharper decline in farm incomes; in the 1950s, approximately 8% of household finances went to farmers, compared with approximately 2% now.

This point was emphasized by the editor of the industry paper *Watt Poultry USA*, who wrote "The problem is that all the efficiencies of production have not really led to increased margins over the years" ([Olentine, 2003](#)).

Improving Welfare

The corollary, though, is that improvements in farm animal welfare could be achieved with only minor increases in the price paid for food by consumers ([McInerney, 1998](#)). As one illustration, the capital costs of animal production (housing and so on) typically account for approximately 10% of production costs ([Haartsen and Elson, 1989](#)). Suppose we doubled the space and facilities provided for the animals, increasing production costs by 10%. When a consumer buys a meal in a supermarket or restaurant, the cost of animal products in that meal accounts for only approximately 5% of its purchase price. So, increasing the cost of production by 10% need only add 0.5% to the price of the meal. Most consumers would not even notice such a change, and it seems likely that they would support it if asked.

One real example is provided by the United Kingdom ban on stalls and tethers for pregnant sows for welfare reasons, which took effect in January 1999. [McInerney \(1998\)](#) estimated that this would increase pork production costs by 5%, but retail prices by only 1%. Householders might buy slightly less pork than hitherto, so their expenditure on food would stay level or very slightly decrease (by perhaps 0.03%). Meanwhile, it should be possible for the farmers to maintain their profits, offsetting increased costs with increased selling prices. [Bornett et al. \(2003\)](#) similarly calculated that compared with intensive pork production with fully slatted floors, production according to the Freedom Food standards of the Royal Society for Prevention of Cruelty to Animals costs 4% more, and free-range production 5% more.

An obstacle to such change, however, is what might be termed economic inertia. Producers tend to resist legislation or pressure from intermediary buyers to improve conditions for animals because in existing price structures, buyers continue to expect low prices. Any increased cost of production would therefore be borne by producers, and they would suffer losses or decreased profits, at least short-term. If these short-term effects can be avoided, however, by making changes gradually or deploying public subsidy, a new situation with increased costs and increased income from increased food prices need not be disadvantageous to producers ([Appleby et al., 2003](#)). A major consideration, of course, is protection against imports of food products from countries without similar legislation. Such protection, taking into account animal welfare standards, is being sought by the European Union (supported by welfare groups) in negotiations at the World Trade Organization ([European Communities, 2000](#)). It also is a possible outcome of development by the World Animal Health Organization of guidelines for welfare of farm animals ([OIE, 2004](#)).

Despite economic inertia, there have been some initiatives to improve farm animal welfare in the United States in recent years, led by retailers and others. These vary from decisions by some retailers that their customers expect them to safeguard the welfare of animals that supply their products, to development of niche markets such as that for organic food ([Mench, 2003](#); [Appleby, 2004](#)). These niche markets depend on the expression of many different concerns over the effect of conventional production methods on 1) animal welfare; 2) the environment; and 3) other priorities, such as food safety and developing countries. As such, some people are willing to seek out and pay more for food produced by alternative methods that take these concerns into account. There have always been some producers who use such methods and obtain higher selling prices to offset higher production costs. They do this because they share the same concerns, for business reasons, or both. Despite having only a small share of the market, such farmers offer a vision for the future of agriculture. These farmers, and the consumers who buy their products, are having a disproportionate effect on legislation in some countries (particularly Europe) and on the retail sector in others (such as the United States); they are affecting more of animal production than just the proportion directly covered by their own sales. The sale of “alternative” products, such as those that are organic or free-range, has always been a minority, but it has led the way for legislation in Europe affecting all farm animals.

Implications

The most important effects on farm animal welfare are not exerted by food prices as such, but by the cost of food production. Major improvements in farm animal welfare would result in small increases in food prices. It would be appropriate to investigate mechanisms to achieve this. Society does not need cheaper food production. On the contrary, from the viewpoint of doing

what is appropriate for animal welfare and the environment, it is arguable that free-market competition should no longer be the main determinant of farm practices and food prices. Animal scientists can serve the long-term interests of animal agriculture by combining efforts to do the right thing for the welfare of animals with more traditional goals, such as increasing production efficiency.

Footnotes

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