Economics 051
The Economics of North Carolina

Hog Farming and Lagoon Management in North Carolina: The Government Perspective

Alex Bloom
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For as long as economists have been studying the economy, they have argued about what the role of government should be in the market place. Some argue that government should never interfere. These *laissez faire* economists believe that supply and demand will create an equilibrium that results in the most efficient allocation of resources. In today's society, the government plays an enormous role in the market system. As far as economics is concerned, the government functions primarily to provide a safe environment for the buying and selling of goods. Today, the government has gotten involved in numerous aspects of the economy to promote fairness and to protect national corporations. This is good for our national business, but it has had negative effects on competition and thus resulted in less than optimum national levels of output. In our democratic society, the government is run by elected officials who must adhere to their constituents if they hope to get reelected. Therefore, well-organized and well-funded political action committees and political interest groups have tremendous political persuasion which can affect the nation's economy. Each individual market has different interactions with the government, but holistically the government has produced a more equitable economy than would have occurred in a *laissez fair* system. The hog farming industry exemplifies many aspects of how the government can influence our nation's economic system, and through this case study, one can see the positive and adverse effects of such intervention. The current hog farming situation and three different bills passed within the state of North Carolina including the Swine Farm Siting Act, the Clean Water Responsibility Act, and the Smithfield Agreement specifically display the role of government and its effects on the economy.

Background

Hog farming in North Carolina is a booming industry representing nearly one billion dollars of total revenue for the state **(**Biradavolu “Hog Farming: Overview” 1). The hog farming industry has grown enormously during the 1990s seen in the increase of total hogs from 2.4 million head in 1986 to an astounding 9.5 million head in 2000. It is also interesting to note that this phenomenon has been accompanied with a decrease in the total number of farms in the state: total number of hog farms shrinking from 15,000 to 3,600 over that same time period (North Carolina Agriculture Overview” 1). Today, most hog farmers use the lagoon spray field method, which is economically efficient but creates several problems. Our economics class saw first hand how this process takes place. Once the hog farmer receives the hogs, he puts them in houses which have a raised section in which the hogs live and a lower section with running water used to hydrate the animals and remove waste. The farmer then must daily rinse out the floor using the hose to force the waste to run into a man-made pond or lagoon. This lagoon eventually fills up with waste, and it is usually in an open area, so rainfall and other precipitation can have an excessive impact on the water level. Once the nutrient filled water nears the top, the farmer drains the liquid from the lagoon and sprays it out over his other fields to improve production of other crops. This system works well enough, but there can be several disadvantages. For example, when farmers do not maintain the lagoons, and too much manure gets built up, it can begin to have a nauseous odor which can be annoying for not only the farmer but also for those who own neighboring land. What's more, inclement weather or inefficient management of the lagoons can lead to the breaking of the walls thus letting the contents run into nearby water supplies. This effect obviously proves detrimental because people who drink the contaminated water could contract dangerous diseases, or if the problem is identified before anyone drinks the water, the state still would have to pay to purify the water. ("Development of Environmentally Superior Technologies" 2) These harmful results coupled with the profitability of the farming aspect pose a problem which the government has been called on to solve. Several of the following case studies provide examples of how the government has cooperated with affected parties to come up with a rational solution to this situation.

Swine Farm Siting Act

On July 11th 1995, the General Assembly put into place Senate Bill 1080 entitled "An Act to Place Certain Restrictions on the Siting of Swine Houses and Lagoons." This later became more commonly known as the Swine Farm Siting Act. This bill forces new hog farms and lagoons to be built at least 1500 feet from homes, a least 2500 feet from schools, hospitals, or churches, and at least 100 feet from another person's property boundary. Because some farms had already been built closer than these regulations, the government could not stop them from producing as they had the property rights to that land which entitled them to exploit the resources on it. The purpose of this act directly states "The General Assembly finds that the siting of swine houses and lagoons for larger farms can assist in the development of pork production to contribute to the economic development of the State while minimizing any interference with the use and enjoyment of adjoining property" (Oakley & Longest 1). This bill marked the first time that the North Carolina State government had restricted the location of hog farms and lagoons. When confronted with a problem voiced by their constituents, congressmen must consider the interests of all parties involved and make a decision that creates compromise between conflicting parties. In this case the neighbors to the hog farms were upset about the nauseating smell coming from the hog waste and lagoons. The hog farmers had not factored the smell of their operations into their costs and continued to produce as if there was no problem. This externality, or unintended result not taken into consideration by the actor, had to be internalized through legislation which forced the actor, the hog farmer, to consider the smell created by his farm. By limiting the possible sites of hog farms, the government hoped to protect the property rights of the neighbors to these farms. The government ultimately decided that the neighbors' property rights were being infringed because of the nauseating smell created by the pigs on the farms. This smell had decreased the value of the surrounding land and also worsened living conditions for those nearby, and the government ruled that this was unfair and needed to be regulated. This case study exemplifies several key ways in which external circumstances require government intervention, and the Swine Farm Siting Act set the stage for more rigorous government involvement in the hog farming industry.

Moratorium on Hog Farms in NC

Another recent act of government intervention in hog farming that has significantly changed the industry has been the Clean Water Responsibility Act. Enacted in 1997, this bill created several restrictions on the hog farming industry. Primarily, the legislation placed a moratorium on the creation of all new hog farms of at least 250 head within the sate. The exception to the rule was that farms could be built only if they used environmentally superior technology. "The purpose of the moratorium was to give counties time to adopt zoning ordinances and to allow research on environmental impacts and alternative waste technologies to be completed" (Environmental Defense "Major North Carolina Laws" 2). Moreover, the law gave back zoning authority to the counties, and it forced the state Department of Agriculture to develop a phase out plan by May 1, 1998 in which farmers would no longer need to use anaerobic lagoons and sprayfields because there would be a more efficient method to dispose of hog manure (Environmental Defense "Major North Carolina Laws" 2).

This law has had several important effects within the hog farming industry. First, this law has contributed to the elimination of almost all smaller farms because it is no longer profitable to produce hogs on a small scale. This is one of the main factors factoring into the amazing phenomenon of increasing hog production coupled with decreasing numbers of hog farms. What's more, this would eventually allow time for the teams of the Smithfield Agreement to research and develop more efficient technology and put it into practice their findings. Because no farms could be built with the old lagoon sprayfield method, the environmentalists also benefited because the bill required the new systems to be environmentally superior to the existing way. Additionally, the large farmers gained a huge advantage in the market because the bill created a barrier to entry which prohibited new farms from entering. In a normal situation with no government interference, new people would enter the hog farming industry if they saw that the firms within the market were making a profit, but in this unique situation, the government prohibited this from happening. Therefore, no matter how profitable the farms got, new farmers could not enter the market thus allowing the long term economic profit to exceed zero. Unfortunately, this agreement hurt the small farmers because they could no longer compete with the large farms. Furthermore, this could contribute to frictional unemployment as people who are trained to work in the hog farming business may be prevented from applying their skills unless they already have a farm. This bill is not the most economical bill because it does not lead to efficiency in the workplace, and it gives an unfair competitive advantage to large farms and existing farms. On the other hand, the government decided that the environment and healthy living conditions were more important than economic efficiency in this situation, and in that regard, this policy succeeded in providing a more environmentally conscientious state.

Smithfield Agreement

Hurricane Floyd exposed a significant flaw in the current system in 1999 when the excessive amount of rainfall caused many lagoons to overflow and numerous lagoons broke spilling all the contents into nearby water supplies. “Officials say that the September storm that hit the region harder than anywhere else, killing 48 people and leaving behind more than $1 billion in largely inescapable damage, also left a vast amount of damage that might have been averted: incalculable and continuing hazards in ground water, wells and rivers from animal waste, mostly from giant hog farms” (Kilborn 1). This obviously upset local environmental groups as the contamination could have been protected through government regulation. Because of pressures from several of these interest groups, the government has been working to develop a more environmentally compliant way of farming hogs. In 2000, the state government responded to theses concerns; the Attorney General of North Carolina formed an agreement with Smithfield Foods and Premium Standard Farms in which Smithfield would give $15 million and Premium Standard Farms would provide $2.1 to fund the research and development of environmentally superior technologies for the hog farming industry. Later in 2002, Frontline Farmers joined the agreement, and although they are not providing monetary support, they will help by working with North Carolina State University to develop and put into practice these environmentally superior technologies.

> “The agreements define an environmentally superior technology as "any technology, or combination of technologies that (1) is permittable by the appropriate governmental authority; (2) is determined to be technically, operationally and economically feasible for an identified category or categories of farms as described in the agreements and (3) meets the following performance standards: Eliminates the discharge of animal waste to surface waters and groundwater through direct discharge, seepage or runoff; Substantially eliminates atmospheric emissions of ammonia; Substantially eliminates the emission of odor that is detectable beyond the boundaries of the parcel or tract of land on which the swine farm is located; Substantially eliminates the release of disease-transmitting vectors and airborne pathogens; and substantially eliminates nutrient and heavy metal contamination of soil and groundwater" (“Development of Environmentally Superior Technologies” 1).

This agreement provided the most economical way to handle the situation at hand because it provided a logical and beneficial answer for all parties. For Smithfield, Frontline, and Premium Standard Farms, this solution allowed positive public recognition as their names could be associated with a helpful solution to fighting pollution. Not only that, Smithfield and Premium Standard Farms would also be viewed as more charitable corporations than before because they gave such significant amounts of money to this cause. What’s more, this answer satisfied the environmental groups who were dissatisfied with the current hog farming system. The Environmental Defense, the Southern Environmental Law Center, and the North Carolina Chapter of the Sierra Club all endorsed the signing of the Smithfield Agreement (Environmental Defense “Environmentalists Applaud Action” 1). This Agreement will benefit not only the North Carolina economy and hog farmers but also the parties who suffered the negative externalities of the lagoon sprayfield technology. Additionally, the agreement will promote a healthier environment while still allowing the North Carolina hog farmers to maintain a competitive advantage over those in other states because of the provision in the agreement requiring technological efficiency. Ultimately, the Smithfield Agreement may significantly contribute to the long term success of the hog farming industry within the state **(**Biradavolu "Hog Farming: Public Policy" 1).

Conclusion

Ultimately, the Swine Farm Siting Act, the Clean Water Responsibility Act, and the Smithfield Agreement all proved to be effective legislation which promoted fairness while still allowing economic efficiency within the North Carolina economy. These bills show that the government can intervene in the marketplace and deal with negative externalities without ruining the normal functions of the economy. If the government did not exist to promote equality, the resulting *laissez faire* system would produce cutthroat businessmen who would have no incentives to practice fair trade and therefore would create numerous harmful externalities in pursuits of maximum efficiency. Fortunately, the government, through legislation, can internalize these externalities and in turn satisfy all affected parties. Thus through the study of the effect of government on the hog farming industry in North Carolina, I would claim that the government has a positive influence on the economy and should be allowed to intervene when problems arise between two or more affected parties.

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