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Should Corporate Farming be Limited in the United States?: An Economic Perspective

Nathan Wittmaack

ABSTRACT. Farming in the United States has changed drastically over the last century. Technology has improved farmers' ability to produce. Economies of scale available from new technology have led to restructuring in the agricultural industry. Fewer and larger farms are now the norm. As technology improved, corporations began to increase activity in agricultural sectors. Sectors such as livestock are more susceptible to corporate farming. Many Americans are opposed to corporate farming because of the perceived negative effects on rural America. Limiting corporate farming, though, is not a good way to protect rural America. Corporate farming leads to a more efficient industry and more social benefits. This paper identifies the alleged negative effects of corporate farming, why it is occurring, and why it should not be opposed.

I. Introduction

In 1920 there were approximately 6.5 million farms in the United States. 30.1 percent of the population lived on farms. In 1992 those numbers were down to 2 million farms and less than 2 percent of the population living on farms [Allen and Lueck, 1998, 344].

The farming industry of today bears little resemblance to that of yesterday. Corporate farming has challenged the age-old structure of farming. Proponents of corporate farming say that it is more efficient than family farming and leads to more affordable food supplies. Opponents say the difference in efficiency does not justify the damage done to the rural way of life. Should agricultural states oppose corporate farming? Using economic theory, reasoning, and research, the paper concludes that corporate farming is economically more efficient than family farming in some circumstances. The assumption that corporate farming is a significant factor in the decrease of family farms is challenged as well.

II. Background

Since the Industrial Revolution, corporations have proven to be the most advantageous form of the industrial firm. The large sums of capital that corporations can raise allow them to take advantage of economies of

scale. Corporations also enjoy limited liability. Henry Ford perfected a key ingredient to industrial efficiency. The assembly line made it easier to realize economies of scale. Economies of scale are the decreased costs per additional unit of input due to synergies in production. As production volume increases, the initial cost can be divided among more units of output. The assembly line is based on gains from specialization. As industry became more mechanized, it required fewer people to produce the same amount. It was, and still is, rare for an individual to own the resources required to capture substantial economies of scale. The corporate form of ownership is most able to capture economies of scale from industrialization.

Historically, agriculture has retained the “family firm” structure to a greater degree than other industries. Allen and Lueck suggest that this is largely due to the seasonality and randomness of nature and “the interplay of these qualities generates moral hazard, limits the gains from specialization, and causes timing problems between stages of production [1998, 343].” Agricultural sub-sectors experience different specialization and timing problems. For example, soybean farming must be done in a strict order and time frame that corresponds to natural seasons. Hog farming, though, takes place almost entirely indoors and is not as affected by natural cycles or variables. Government subsidies have allowed some types of family farmers to remain in the industry.

Corporate influence in farming has grown over the past 30 years. Not surprisingly, it has grown the most in sectors not as affected by natural cycles. The number of family farms in grain crop production has dropped over this period. The drop in family farms has not been due to corporate farming so much as the increasing size of the family farm. Many rural citizens blame the decrease in family farms on the increase in corporate farms. There are many arguments that have been made against corporate farming; they are discussed in section III. Opponents of corporate farming have responded by calling for legislation to prevent it.

Several Midwestern states have taken legislative steps to slow the spread of corporate farming. The first significant step in anti-corporate legislation occurred in the mid-1970s. In 1974, South Dakota enacted the Family Farm Act [Pietila, 2001, 153]. Iowa followed suit in 1975 with Iowa Code Chapter 9H.2 that prevents meatpackers from raising livestock [Vogel, 2004, 201]. Since that time, there have been various attempts by Midwestern states to legislate against corporate farming. The main thrust of the legislation has been to make it illegal for corporations to own

multiple stages of production. The constitutionality of some of this legislation has been called into question recently. The 8th circuit United States District Court of Appeals recently repealed certain family farming acts in South Dakota [McDonough, 2003, 18]. Iowa's protectionist law was struck down as well by the United States District Court in the Southern District of Iowa [Vogel, 2004, 200]. These rulings were made on the basis of the dormant Commerce Clause found in Article One Section 8 of the U.S. Constitution. The dormant Commerce Clause limits the power of states to discriminate against out of state economic interests [Vogel, 2004, 209].

III. Arguments Against Corporate Farming

There are several hypothetical negative effects of corporate farming. There are many fewer family farms now than seventy years ago. Rural Americans, and others, are concerned that the decreasing number of family farms is harming the rural economy. Many rural Americans worry that corporate farming erodes their economy and their culture. Some people believe that vertical integration in food markets leads to a dangerous concentration of power over our food stock [Lyson and Welsh, 2005, 1489]. Remaining family farmers worry about access to markets. Others believe the savings of economies of scale in certain agricultural markets are not benefiting the consumer. Finally, some fear that corporate farming poses an unnecessary threat to the environment.

A. DECREASE IN NUMBER OF FAMILY FARMS

As explained in section II, the number of family farms and the population living on farms has declined drastically over the last 80 years. In 1933 there were approximately 6.5 million farms in the U.S.; in 2000 there were approximately 2 million [Tweeten, 2002, 1]. Opponents of corporate farming claim that the commercial corporate farming approach is a cause of the decline in family farms. Residents see corporate farming interests expand and believe it is driving out family farmers.

B. RURAL ECONOMY FEARS

The fear of a declining rural economy due to corporate farming is related to the decrease in the number of family farms. A study performed by

Lyson and Welsh revealed rural economic problems associated with corporate farming. In the research, Lyson and Welsh conclude that corporate farming is associated with higher rates of unemployment and poverty [2005, 1487-1488].

As corporate farms continue to get larger, they will secure their inputs from centralized and standardized distributors [Lyson and Welsh, 2005, 1480]. Historically, the family farm did its agricultural business locally. This trade supported a huge number of agricultural businesses in rural communities. These businesses include grain elevators, community banks, farm supply stores, implement dealerships, seed dealers, and so on. Corporate farms do not rely on local resources like these; they secure their inputs and working capital from centrally located, large suppliers. If a corporate farm has fifty percent of the business in a rural area, the agriculture-related industry in that area has half as much business to support.

C. RURAL CULTURE FEARS

If the rural economy begins to collapse, it would have substantial impact on the culture in rural America. Small towns dominate the countryside of rural America, and many farmsteads dot the expanse between towns (though many fewer than 70 years ago). Small towns in rural America exist to support the agriculture that takes place around them. Nearly everything in a small town revolves around agriculture, even if it seems unrelated. These communities are a very distinct part of America's culture. Time seems to have moved much slower in small town rural America. Here, values of honesty, perseverance, hard work, dedication, and Godliness are embraced as the ideal. Morning coffee is a ritual, as is Sunday morning church. This subculture of America is very unique, but some believe that it will be lost if corporate farming is able to progress unchecked.

D. CONCENTRATION OF POWER

When one organization, or small group of organizations, amasses increasingly larger proportions of a scarce resource, its control over the market for that resource becomes much more substantial. For example, there are only 47 Tucker cars currently in existence ["Tucker History," 3]. If each of the Tuckers were in different individual's possessions, any one

of them would sell for market value, and no individual owner would be able to influence the market price. If someone owned 45 of the existing 47 Tuckers, he would be able to control the market for Tucker cars. They could demand a premium because of the power they have in the market for Tuckers. This is the very concept that farm families are worried about. In the swine industry, the largest four companies control 60 percent of the market. 80 percent of the beef industry is controlled by the biggest four [McDonough, 2003, 18]. Vogel maintains that there is an alarmingly large discrepancy in power between meatpackers and independent producers. As this disparity in power grows, and the meatpackers continue to integrate with suppliers and buyers, the efficiency that they gain is unlikely to be passed on to consumers [2004, 207].

E. ACCESS TO MARKETS

The United States Supreme Court has said that the framers of the Constitution believed that every farmer should have access to every market in the country [Vogel, 2004, 200]. Corporate farms command a lot of market power. If a large corporate farm is integrated with a packer, all of the product will be channeled through that packer. The packer may not even accept product from farms that are not owned by or contracted with the corporation. In the past, a farmer was free to sell to the packer of his choice. The packer's ability to control its inputs by coordinating with its controlled farms eliminates its need to purchase that input from non-contract farmers.

The existence of the corporate meatpacker may put other area packers at risk. Corporation owned farms may have taken the place of family farms that previously split sales between more than one meatpacker. If the corporate farms all send their output to the corporate packer, it may put other packers out of business. Sales from farms that formerly had been divided would now all go to the corporate meatpacker. If these non-integrated packers cannot stay in business, it further decreases family farmer's access to markets.

F. ENVIRONMENTAL CONCERNS

The main environmental concerns about corporate farming come from large confinement operations. Brehm says that these operations are

serious environmental threats to both water and air quality [2005, 811]. The shift from traditional livestock operations to large confinement operations is a result of the vertical integration of the livestock production system. As packers began contracting farmers to deliver set numbers of livestock in set time frames, banks began to loan against the contracts. Farmers then had access to enough capital to construct large, confinement operations [Brehm, 2005, 798].

The waste produced by large numbers of confined animals is the chief environmental concern. Applying the manure to farmland as fertilizer creates the possibility of runoff into neighboring water sources. Corporate farms often build lagoons, or large storage bunkers for waste. Lagoons present the problems of seepage and overflow [Brehm, 2005, 812]. Due to the sheer volume of waste, an inherent environmental danger exists. A water supply tainted by waste is undrinkable. Rivers, streams, ponds, and lakes contaminated with manure will not support the wildlife naturally found in them. Also, bacteria from the waste can make water unfit to swim in, reducing economic benefits associated with recreation.

Air pollution is another problem. Odors are created by livestock operations. The odor alone is enough to cause neighbors of a proposed confinement operation to protest. There is evidence that confinement operations pollute the air with harmful chemicals. Ammonia and hydrogen sulfide are present along with “volatile organic compounds” [Brehm 2005, 812].

G. HUMANITARIAN CONCERNS

Corporate farming depends on confinement-style operations. Humanitarian and moral questions are important issues to consider. In confinement style corporate farming operations, animals are allowed very little space to move. The animals do not live a natural life. It is not uncommon for animals to be physically harmed if they are weaker than the rest. Animal abuse happens as well. Often the farm managers do not care about any individual animal.

IV. A Discussion of Technological Change

Technological change has occurred rapidly over the last several decades. Improved technology has made it feasible for corporations to enter the

farming industry. Many of the concerns about corporate farming are actually frustration about the double-edged sword of technological change. As technology has improved since the early 1900's, it has enabled farmers of all kinds to be more efficient. Tractors have replaced horses and oxen as means of production. New alloys have led to larger and stronger equipment. Better technology means that farmers can extract more output from the same amount of input. The problem is that more efficiency means more output; more output means less revenue per unit of output due to the simple rules of supply and demand. In order to make up for the decrease in revenue per unit of output, costs of production must fall. The best way to make cost per unit of output to fall is to capture economies of scale (i.e. get bigger). A "vicious cycle" problem is apparent in this scenario with pressure to expand and produce more. In some agricultural sectors, corporations are most fit to handle this market.

A way to produce more is to buy more land, or find a way to jam all sorts of livestock into a small space. Technology has been the driver behind the failure of countless farms in the United States. Technology allows fewer people to farm more acres or livestock. Opponents of corporate farming who argue that it reduces the number of farms are trying to pin the tail on the wrong donkey. The very phenomenon (better technology) that has revolutionized farming for some has been the downfall of many others.

V. The Reach of Corporate Farming

The question arises, "is corporate farming a threat to every type of farmer?" After all, agriculture is a very broad concept in that it refers to all of the plant and livestock operations in the United States. Is corporate farming an issue in all types of farm operations? The short answer is, no. Virtually all of the research on corporate farming has been conducted on the livestock sector. Opponents of corporate farming tend not to make this distinction. Opposition to corporate farming is made on a broad, sweeping basis. Opponents would have you believe that corporate farms are prevalent in all types of farm business. In reality, corporate farming has affected grain crop farmers much less than livestock farmers. In 1992, only 1.3 percent of farm acreage was owned by corporate entities [Allen and Lueck, 1998, 343]. Acreage is a good measure of the presence of corporate farms in grain crop production. Raising livestock is no longer necessarily a land intensive practice, so its portion of the 1.3 percent of acreage is trivial.

Section IV discussed technology and how it has affected farming practices. It is technology that has changed the grain crop farm industry so much. Even if corporate farming were not an issue, farmers would continually be buying more land, squeezing other farmers out of the industry. It is much easier for grain crop farmers to put a face on the “enemy” by declaring that corporate farming is the culprit rather than the evolution of technology.

There are reasons why corporate farming has not embraced grain farming to this point. Some industries have attributes that lend themselves to a factory-style production process. Due to the advances in technology, there is little doubt that economies of scale exist in agriculture, no matter what sub-sector (livestock, grain, etc.). Economies of scale must exist for corporate farming to make sense.

Beyond economies of scale, gains from specialization are important in determining whether an industry can move to a factory-style corporate approach. It would be inefficient for farmers to divide up all of the jobs of grain production and each focus on one. The tasks in grain farming “...tend to be short, infrequent, and require few distinct tasks, thus limiting the benefits of specialization [Allen and Lueck, 1998, 344].” Grain crop farming is a repetitive process, but does not require a different skill set for each job.

Another factor that has delayed the onset of corporate farming is the uncertainty that exists within nature. Nature makes the move to factory-style corporate grain crop farms less likely in two ways. First, random shocks to output create a risk in farming. Drought, hail, and infestation are all possibilities. Individual farmers can insure their crops against seasonal disasters and seasonal shocks. Family farmers are compensated monetarily for their crop damage. Also, if the cause of the shock is widespread, the total supply of grain would be low, which would mean that the price would be relatively high. In general, corporations are well equipped to handle risk. Corporations, though, face a different risk in grain crop production. The corporately owned grain farm is a vertically integrated part of a production process. An important part of a production process is having consistent and reliable input flows. The relative uncertainty of grain farming does not provide a reliable input flow.

Second, grain farming is characterized by natural seasons that require certain production stages to take place at certain times [Allen and Lueck, 1998, 346]. Because of these factors, output from farm operations is limited to the end of natural cycles and the output may differ in quality

or quantity from what was expected. A consistent and reliable input flow cannot be achieved because of the seasonality of grain farming.

Allen and Lueck explain that the sectors of agriculture that have been targeted by corporate farming are not random. Grain operations are particularly susceptible to the problems that nature presents.

The general trend has been to remove stock from an open environment and rear them in climate-controlled barns... [N]ew technologies—in disease control, handling, nutrition, and transportation—have reduced seasonality by increasing the number of cycles per year...and reducing the importance and variability of random shocks from nature... Compared to field crops, livestock production allows for greater reduction of natural forces because stocks are mobile during growing stages and can often be reared indoors [Allen and Lueck, 1998, 370].

The implications of Allen and Lueck's paper are important. Corporate farming will not affect agricultural sectors that are characterized by random shocks to output and strictly seasonal nearly as much as sectors that are not affected. According to Allen and Lueck, grain crop operations should not have to worry about the onset of corporate farming.

Livestock farming, according to Allen and Lueck, is ideal for factory-style corporate farming because of the ability of technology to reduce the variability of the forces of nature on livestock production [1998, 379]. The move to corporate livestock farms was predicted by sound economic modeling and theory. It would be helpful if discussions on corporate farming were clearer about what types of farming are affected. There is little evidence that corporate farming has a serious interest in grain crop farming in the United States.

VI. Reasons for Corporate Farming

As explained in section IV, when an industry can be made more efficient from specialization and economies of scale, factory-style corporate industry will take hold. Livestock farmers have been able to all but eliminate the role that nature plays in production. Increases in technology and process innovation have allowed livestock farmers to extract a reliable and steady flow of output. It makes sense that livestock farming is an investment opportunity for corporations.

Open markets allocate resources most efficiently. The movement towards corporate farming in livestock production has happened because of market forces. Corporations can secure their inputs (the livestock) through high volume and highly reliable contracts. The corporation can then produce a consistent amount of output and can capitalize on economies of scale if they have a guaranteed flow of input. Factory-style corporate structured farms can produce more output for less money. The market rewards efficiency. According to Persaud and Tweeten, the real price of beef and pork (CPI-adjusted) decreased from 1980 to 1995. The producer price index (PPI-adjusted) has fallen as well, but at a slower rate. These differences in rates mean that there is a smaller margin on each unit of output of meat [2002, 128]. Decreased margins clearly show that the efficiency gains from corporate factory-style production are being passed on to consumers. The ability of corporate ownership to take advantage of economies of scale makes it the best choice for livestock production.

When an industry gravitates towards fewer but larger firms there is a tradeoff. That tradeoff is between the effects of market power and economies of scale. If the gains from economies of scale are greater than the loss to market power, the shift in the industry is beneficial [Persaud and Tweeten, 2002, 127]. In the above paragraph, it was noted that margins in the livestock industry have decreased. In the same time period that margins decreased (1980-1995), corporate farming really began to take hold. If fears about the market power of corporate farms distorting markets are legitimate, margins would not have declined. One reason corporate farms are integrating throughout the production process is to take advantage of task specialization. In order for a corporate farm to operate well, it must "...have farm products at the right time, place, quantity, quality, and price to process and meet consumers' demand [Persaud and Tweeten, 2002, 140-141]." These reforms in the livestock industry are in response to changes in technology that allow for efficiently coordinating the entire production process.

Scale economies that can be realized through new technology are a threat to the family farm structure that has dominated agriculture for so long. More animals can be farmed with less labor and more capital. In some situations (such as livestock, where nature can be mitigated) corporate farming has been the best choice. The scale economies and efficiency gains have led to large increases in national income that have benefited farmers in the long run [Persaud and Tweeten, 2002, 141].

Corporations have an advantage when securing markets and marketing products. This advantage in marketing not only increased demand nationally, but can increase global demand. Corporations are better suited to the challenges of a global economy. Traditional agriculture would have a much more difficult time capitalizing on the global economy.

VII. Discussion on Government

Any discussion on the agriculture industry must address the government's presence. The government has subsidized farm income and commodity prices for decades. Between 1950 and 2000, \$451 billion was spent on farm subsidies [Tweeten, 2002, 1]. The government subsidies are meant to protect farmers from a market that was not believed to work. Natural production shocks, overproduction and high land prices are all problems that farmers have to deal with. The government tries to reduce the affects of these problems by subsidizing income, controlling supply, and offering relief.

The United States government has played a role in allowing the family farm to remain to this point. As information is more readily available, and as farms become larger, it is becoming clear that allowing the market work and ceasing subsidies is the best way to go [Tweeten, 2002, 1]. Whether or not to subsidize farms is not at issue. Contrary to common belief, subsidies tend to be awarded to very large farms. As a result, government subsidies are sometimes referred to as "corporate welfare." The largest grain farming operations receive the largest subsidies.

Perhaps the presence of government programs is one reason why there is a corporate presence (albeit limited) in grain farming. Government farm subsidy is a complex topic that deserves its own research. Subsidies' effect on the presence of corporate farming is very difficult to quantify. I can not offer a hypothesis on the direct effect of subsidies on the corporate farming trend. Its affect on livestock operations, the main bastion of corporate farming, is clearly limited.

VIII. Discussion on Negative Externalities

Negative externalities are costs of production that are not reflected in the

price. Negative externalities result in overproduction of a product because not all of the costs are paid by the producer. The result is that others have to bear the cost of the externalities. Some concerns about corporate farming are based on fears of negative externalities. The efficient amount of corporate farming must have negative externalities internalized by the farms [Tweeten, 1997, 4]. What are the negative externalities associated with corporate farming?

Section III discussed arguments against corporate farming. Some of these arguments have been addressed in the preceding sections. The decrease in the number of farms can be accounted for almost entirely by the advances of technology in agriculture. Corporate farming has little to do with this problem, and has merely capitalized on the trend to move to a more efficient process with fewer farms.

Section V addressed the complaint that corporate farming puts too much power in the hands of too few. While more power does rest with vertically integrated corporate farming operations, there is not yet evidence that it has resulted in abuse of the power.

The most important negative externalities in corporate farming are its affects on rural economies and culture, as well as environmental and humanitarian concerns. As discussed in section III, as corporate entities take over farming and integrate stages of production, they will tend to acquire inputs from centralized locations that are not necessarily in close proximity to the farm operation itself. For example, a large corporate farm may do all of its borrowing at a large commercial bank rather than from the local loan officer. The corporate farm will also purchase all of its farming supplies from vendors (possibly) not associated with the local economy. If a corporate farming operation takes the place of what was once several family farming operations, the businesses that rely on farmers to support them would not be able to keep their doors open. The rural economy is primarily based on the existence of small farming towns and the agribusiness that happens within those towns.

It is not surprising that agriculture-based small towns in the Midwest have seen a large drop in population. The population decline is partially due to the existence of corporate farms procuring operating resources from large markets that are unrelated to the local rural economy. As the rural economy goes, so does the rural culture. Small agricultural towns are the hub of rural culture in the United States. If the towns suffer, so will the rural culture.

It is important to note that it is extremely unclear as to what extent corporate farming has contributed to the decline of the rural economy and culture. This paper has identified technology as the primary force in agricultural changes. Because technological change can have the same effect on communities and culture as corporate farming, it is difficult to assign any concrete portion solely to corporate farming.

Environmental concerns are valid in corporate farming. Air and water pollution are big hurdles for large scale corporate farming operations. But, the same problems are present whether the operating structure is corporate or not. The sheer numbers of animals housed in a relatively small area cause the problem. Nearly the same argument can be made for the humanitarian problem. Once again, it is difficult to put a price on the effect of the environmental negative externality.

Opinions exist on both sides of the environmental question. Some maintain that if corporations had to account for their negative environmental externalities, then corporate-style production would not be the most efficient way of farming [Brehm, 2005, 799]. Others believe that corporate structure in farming would be the most efficient even if they did internalize all external costs. There are also ways to reduce the amount of negative externalities. Locating in remote areas where rural economies do not already exist would reduce the affects on established rural economies, and negate the problem of air pollution [Tweeten, 1997, 4]. Humanitarian issues are even more difficult to discuss, but would do little to affect the market choice of corporate farming.

IX. Conclusions

This paper has discussed the changing landscape of agriculture. Corporate farming is becoming more prevalent; some are very concerned by the effects of this shift. Most of the perceived negative effects of corporate farming in the United States can actually be attributed to technological change. The technological change has given corporations the ability to expand into agriculture, especially livestock, and produce more efficiently. Natural shocks and cycles can be negated by technology. Vertical integration by corporations is the best and most efficient way to capture the economies of scale and gains from specialization available.

Rural communities are dying; there is little argument about that. The number of farms and the corresponding population has decreased

drastically over the last 70 years. Can corporate farming damage the rural culture even more? Because of the nature of grain farming, there is little chance that corporations will embrace grain production like they have livestock. Nature maintains a huge role in grain production. Unless technology makes it possible for producers to standardize grain output like it has livestock output, there will likely be little interest in corporate grain farming.

Negative externalities are important to consider, and more research should be done to develop a model that internalized all of the costs of corporate farming. It will be difficult to separate the negative externalities attributed to the existence of corporate farms with those associated with technological progress. If the gains from corporate farming outweigh its externalities, as it appears that they do, it should continue to exist.

If it is determined that limiting corporate farming is a good method to use in preserving the rural American culture, and society values that more than more efficient production, corporate farming should be limited by states. But even though society may value rural American culture over lower prices, limiting corporate-style farming is probably not the way to protect it. Instead, technology would have to be intentionally limited, and probably reduced. It appears that the American rural culture is in decline, and limiting corporate farming will probably not stop it. Agricultural states should not oppose corporate farming, unless new research discovers the negative externalities of corporate farming (and not technological change) outweigh the benefits they produce.

Hope exists for rural culture in the United States. Family farms have the opportunity to seek out niche markets that may bring premium prices. Premium prices may offset their forgone benefit of being larger and more efficient (capturing economies of scale). Organic markets are one possibility. Demand exists for organic foods; small family farmers may find that they are best equipped to capture the market. The technology that makes farms more efficient is often from genetic alteration and is heavily reliant on chemicals. Capturing economies of scale is more difficult without the use of these technologies, and may leave the door open for small farmers.

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