



## **How Neoclassical Economic Theory Fails to Explain the Modern Industrial Food System**

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Neoclassical economic theory has long sought to explain and improve our understanding of industry, public policy, and international trade and relations. This theory, composed of (1) the theory of consumer choice based on revealed choice and utility maximization, (2) perfect competition in goods and factor markets, and (3) profit maximization of firms, has a long way to go in terms of accurately describing the modern industrial food system. The lens through which mainstream economics attempts to understand this food system is shaded by several assumptions about both human behavior and agricultural markets which are in some cases fundamentally flawed or demonstrably false. In this paper I intend to discuss the viewpoint which mainstream economics holds over agricultural markets and industrial efficiency in food production, and on the other end seller and consumer behavior in the market for industrial processed foods.

While mainstream economics suggests that agriculture is the prime example of perfectly competitive markets, there is evidence to suggest that this is not typically the case, or if it is, it is only true up to the farm gate and then only where farmers are concerned. On the final goods market side of the industrial food system, mainstream economics falls short of a comprehensive understanding because consumption behavior for particular food items, particularly processed and addictive foods, often contradicts the traditional assumptions of consumer autonomy, full information, and rational utility maximization. Moreover, neoclassical welfare analysis can also be shown to suffer serious shortcomings when applied to our industrial food system insofar as it ignores important market failures, including those associated with negative externalities.

This paper will critically examine the literature surrounding the industrial food chain from the operations of agricultural input producers such as seed and feed makers all the way to the dinner table, and in the process will aim to take a comprehensive approach to understanding the modern food system in its entirety.

In the research process for this paper, I read books and articles on agriculture, food, and hunger. In the interest of making the distinction between the economic perspective on these issues and reality, these books were written by objective authors and journalists without a background in economics. In addition to this I also read some works by economists which supplied added insight into some of the critiques I will be making of neoclassical economics.

This paper will begin by examining the final goods sales and consumption side of the industrial food system. In this section of the paper, I will be discussing the neoclassical foundations of demand and rational utility maximization and the assumptions which come along with that theory. Then I will be contrasting them with the problems of pathological consumption, asymmetric information, and other various lapses in rationality which are found in food consumption. In addition to this I will be discussing the idea that “consumer is king” in the marketplace and the flaws in that idea considering that certain marketing tactics may mean that while consumers make final decisions about what to consume, those decisions may not originate in the consumer and may in fact have been the result of marketing on the firm side.

The second part of this paper will focus on the agricultural and producer side of the industrial food system. This section will describe the modern economic theory and assumptions surrounding agriculture, namely the idea of perfect competition, and contrast those with the reality of massive market power in the form of monopoly sellers and monopsony from the input producers to the purchasers of agricultural outputs, respectively.

The discussion will then take aim at the welfare analysis of the food production industry and evaluate the losses and gains to consumer, employer, employee, and producer surplus as it becomes relevant.

The fourth section of this paper will then discuss some solutions to the issues presented by the first three sections. These solutions will be for both reforming the modern industrial food system, and for reforming our understanding of the industrial food system. This section will include discussions on policy to address pathological consumption of energy dense foods, sustainable methods of agriculture, and improvements to economic theory and education surrounding the food system.

## **II. Consumption**

Neoclassical economics relies on the idea that consumers are rational, meaning that consumers make choices to consume those goods and services they receive the most utility from. This can be understood to mean that consumers choose to consume the goods that will benefit them the most and will choose not to consume those things that will harm them. Neoclassical economics also relies on the assumptions that people make decisions in the marketplace based on perfect information meaning that the consumer has all the relevant information necessary to make a decision on what to consume, and that the consumer is king meaning that consumers make the ultimate decision of winners and losers in the marketplace. These assumptions do not seem to tell the entire story of the final goods market in the modern food system.

The consumption of food in the developed world today is quite different than the consumption of food throughout most of human history. Historically we had to contend with a great deal of scarcity when it came to food, so our bodies evolved to reward us for consuming energy dense foods. Thus, we developed our reward system, the biological and neurological system within our bodies which rewards us for fulfilling our necessary urges, to drive us to consume energy dense food. Geoffrey Shoenbaum, a neuroscientist at the National Institute for Health, posits that “Maybe it would make more sense if we called the reward system the biological-need-satisfying system” (Moss 42). This is the perspective through which we need to understand this rewards system before understanding how we got into our present predicament.

Food itself has become addictive, or rather, some modern foods are addictive to some people. Not all eating is addict-like behavior, but pathological consumption of food is becoming increasingly prominent. It is an interesting situation to say the least. On the one hand we have to consume food, it is a biological imperative, on the other hand the foods we consume today have the power to activate a swift and extreme response in our body's reward system. Cigarette smoke takes up to ten seconds to activate a response in our brains while just a pinch of sugar can activate a similar response in just over half a second (Moss 49). Foods are so effective at activating the reward system in our brains because that is what the system was designed to do.

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The activation is so successful at being so fast because it starts at the touch of the tongue rather than in our bloodstream or lungs.

Neuroscientist Carrie Ferrario believes that the reward system was developed in large part to find calorie dense foods, saying that “brain reward circuits evolved in part to direct behavior towards food. Thus, enhancements in NAc (nucleus accumbens, the region of the forebrain which acts as a neural interface between motivation and action) responsivity and cue-triggered motivation could be described as an improved function of this system (i.e., rendering individuals better able to find food) rather than dysfunction.” This essentially means that addiction to food is not a fault in human evolution, rather is the result of our brains' rewards system doing exactly what it has evolved to do. Food addiction, as it exists today then, is a consequence of the evolution of the socioeconomic and cultural contexts within which we satisfy our need for food (Ferrario).

Since addiction to food is not some sort of biological flaw or outlier, rather is the well-evolved default in human behavior, it seems then illogical to say that humans are rational by default. After all, our genetic predisposition is to become attracted to unhealthy foods. With obesity and all its comorbidities on the rise in the developed world, especially the United States, there is even further evidence that this is the case. The idea that people are rational and utility maximizing by default can then only be true in the most hedonic definition of utility maximization. Certainly, there is a temporary boost in the mental state of the addicted when consuming energy-dense addictive foods, but there are certain long-term deleterious consequences to the health and well-being of these individuals and in fact society as a whole. These longer-term consequences resulting from food addiction can be difficult for addicts to process and account for in their short-term choices.

The issue goes beyond the addictiveness of modern processed foods though. There is evidence to suggest that the food industry has taken advantage of these neurological predispositions for their own benefit. In fact, at a 2015 conference sponsored by the Advertising Research Foundation a firm called Neuro-Insights gave a presentation on how to better tap into consumer emotions to sell products. They presented their research that advertisements should show their brand at the height of the emotional moments in commercials in order to make a more lasting impression for their brand. They are effectively taking the reins of memory and taking control of consumer choices (Moss 72).

This raises doubts about the assumption that the consumer is king in the marketplace. Consumers might make the ultimate decision on what to purchase and consume but those decisions may not originate in the consumer themselves. When firms harness the ability to control consumers' emotions and memory, they begin to harness control of consumer decisions. When choosing between many different substitutes one might be inclined to go with the product that they have memories of. Memory is the core of what makes us tick. Advertisers know that they can improve their profits and viability in the marketplace by harnessing our memories and emotions, therefore, they can make the decisions of what to buy before the consumer even encounters the question.

This, of course, also raises the question of consumer autonomy. We assume that consumers are autonomous in their decisions, but given the control these firms wield over consumer emotion, can we assume this to be true all the time? Certainly, consumers make final decisions, but it's

entirely likely that often these decisions are made subconsciously through advertising before the question has ever been posed.

Consumers also suffer an informational disadvantage in the modern food market. Primarily this disadvantage comes from the fact that most consumers have trouble deciphering the contents of processed foods. It's common to see on the labels of processed foods ingredients such as maltodextrin, or dextrose. These words mean nothing to the average person but are essentially highly processed corn sugars and starches. Then we find the classic natural and artificial flavors listed on the label which could mean almost anything. How are consumers to take control of what they consume when they cannot find the entirety of the contents in their food, and even if they could, most wouldn't understand what they are.

Consumers also suffer an informational disadvantage because of marketing. The modern marketing tactics which have the power to take the reins of human emotion are largely hidden to consumers. Modern marketing works through subtle suggestion and powerful emotion. People recognize when they see a commercial on TV that it's a commercial, but they may not be so keen to recognize brand placement in their favorite movies and TV shows. People might also fail to recognize advertisements that are presented as warnings of some sort of danger. Advertisements might display a dangerous situation or a tragic event to play on one's emotions only to present a brand label at the emotional peak of the ad. In essence, advertisements often evoke emotional responses by design and off-putting imagery may not be recognized as good advertising but it can be quite effective.

People in the developed world today, particularly the United States, must contend with the fact that our food has changed. Not long ago, at least from an evolutionary perspective, it was imperative to consume as much energy-dense food as possible. These energy-dense foods were rare, and we had a good deal of hunger to contend with. The modern industrial food system has done an exceptional job at alleviating hunger as such with the mass production of all sorts of foods, but the rise of energy and calorie-dense foods has us contending with entirely new problems. The rise in health problems like obesity, type-II diabetes, heart disease, etc. in the developed world today, particularly the United States, are representative of this very fact that our food has changed in unhealthy ways. Neoclassical economics contends that people are rational, utility-maximizing actors with full information, but that cannot be the case with modern foods. People must now fight off their biological pre-dispositions to consume as much food as possible and do so in the face of limited information about what they're consuming and all the while with firms in the processed food industry taking the reins of emotion and memory to insist that people consume more of their brands products.

### **III. Production**

In this section I will be discussing the Neoclassical assumption, and indeed the assumption made in most economics textbooks that the agriculture industry is a prime example of perfect competition. This section will detail the extreme market power held by firms such as Tyson which can hold farmers hostage with the dual power of monopolist input provider and monopsonist livestock purchaser. In addition to the discussion of powerful economic agents in agriculture I will look at welfare analysis of the agriculture market through the lens of

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capturing/losing employer and employee surplus through this market power, and through the externalities of modern industrial agriculture.

The theory of perfect competition is held in high regard in neoclassical economics and indeed in most entry level economics textbooks. Although we acknowledge that perfect competition is rare and there is often some degree of market power in most markets, economists generally hold agriculture to be the quintessential example of perfect competition. While agriculture does meet some criteria for perfect competition, i.e., homogeneous products like commodity corn, farmers are generally price takers (although the prices which they take are not generally determined through a market process that is perfectly competitive, or even competitive at all), and large number of sellers, this example of perfect competition is really only true up to the farm gate and with respect to farmers only.

To understand how agriculture has lost its perfectly competitive character we need to look no further than the poultry industry. At one time we would have had bustling small town economies featuring hatcheries, feed mills, slaughterhouses, and trucking companies. All of these steps of production would have been under the purview of separate firms, all a part of a bustling local economy. Now all those steps in production take place under one roof owned by firms like Tyson (Leonard 21). Tyson, and companies like them have effectively taken the reign of almost every step in the production of meat, except for the step which incurs the most risk, livestock raising.

To understand the market power which large agribusinesses hold over farmers and end consumers we can take a walk through the steps of livestock production. Modern farming is characterized by contract farming where farmers have to work exclusively with one firm through the entire process of raising livestock. If a farmer enters one of these contracts, then they agree to buy their hatchlings and newborns from the companies' hatcheries or nurseries. The farmer must then buy their feed from the same company.

The company at hand has complete control over the quality of hatchlings and newborns as well as the feed which the farmer receives. There have been cases of abuse of this power where a farmer complains about the firms' practices and as a result is given low quality feed which cannot be used. This is a mechanism through which large corporations discipline their contract labor force and keep them in line with the company's strategy to maintain total control over the production of livestock even though they have offloaded the risk to individual farmers and ranchers (Leonard 35-36).

The farmer also must take technical advice from the company which they are in a contract with meaning that they have to listen to company technicians rather than local agricultural extension offices, or their preferred veterinarian when they have issues. When the farmer's job is finished, and it's time to sell their finished livestock, they must sell them to the very same company and accept the price they are given which is often calculated on a tournament basis where their finished product competes with their neighbors via a formula many of these farmers know little about (Leonard 184).

Farmers are often caught in the grasp of a single firm which entirely controls their economic destiny. Since these firms have gotten so large and prevalent, they can manipulate the price of

finished livestock and effectively put independent farms out of business thereby forcing farmers to enter into these contract farming schemes. This creates a rare combination of both monopoly and monopsony power that farmers have to deal with in order to continue farming.

Contract farming has of course drawn scrutiny from regulators. Under the Obama administration the secretary of the department of agriculture, Tom Vilsack, pushed for new rules which would restore competition to agriculture, fight tournament-based pay to farmers, and combat these contract farming schemes. The large agribusinesses pushed back and even got some farmers to speak on their behalf. These businesses, like businesses in many American industries today, were so powerful that they successfully fought off the new rules and were able to continue to operate status quo (Leonard 292-293).

These large agribusiness firms are only getting larger, and the consequences of this concentration are beginning to manifest in the pockets of both farmers and consumers. In the markets for beef, pork, and poultry there are just four firms holding between 55-88% of the market share. Concentration among the top four processors in beef has grown from 25% in 1977 to 82% today. In poultry concentration has grown from 35% in 1986 to 54% today, and in the pork market concentration has gone from 33% in 1976 to 66% today. The problem of concentration has begun to take its toll on consumers over the course of the last few years of the pandemic. Since December of 2020, the price of beef has risen by 14%, pork by 12.1%, and poultry by 6.6% while meat packers have seen record profits (Deese, et. al.). As the pandemic disrupted supply chains around the world many slaughterhouses cut production which in turn raises prices for consumers and cuts demand for finished livestock. Ranchers and farmers were forced to contend with a low demand for their livestock, therefore they suffered lower prices and reduced profits while consumers in the end had to deal with higher prices. Large agribusinesses like JBS have raked in record profits in the last few years where ranchers and farmers are being squeezed dry (Goodman).

The problem farmers and ranchers face boils down to lack of competition for both input producers and buyers of finished livestock. Large agribusinesses have managed to control so much of each end of livestock production that they can essentially lock up the entire supply of livestock at prices which they dictate. Farmers contend with monopolist power on one side and monopsonist power on the other.

The neoclassical picture of agriculture does not tell this story of massive market power in agriculture. While neoclassical economics, and indeed most economics courses would say that agriculture is a good example of perfect competition, the real world is far from that. Certainly, up to the farm gate and with respect to farmers we could see some elements of perfect competition like homogeneous goods, large number of sellers, and easy entry and exit (although that is becoming less accurate as farmers must now make high-cost fixed capital and land investments to stay in the market). Beyond the farm gate though, large agribusiness dominates the market for livestock completely.

An additional major issue which agriculture brings to the table is the externalities which are associated with agricultural production.

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Agriculture in its more primitive state was sustainable. Not so long ago, all throughput energy in the agriculture system was derived from sunlight. The sun's energy was absorbed by the plants produced by farmers, the rotation crops they planted to fix nitrogen into the soil, and the plants which would become feed for work horses and livestock. In the modern age though farmers use nitrogen fertilizer which has been derived from fossil fuels. Farmers no longer rotate crops to fix nitrogen into the soil, and no longer plant cover crops (Pollan, 43-45).

The modern farm is a massive stretch of flat land which lays bare for about half the year. In the time this field lays bare it is subjected to wind and weather that degrades and erodes the soil. Soil is also eroded through the harsh plowing of the land and the runoff from irrigating the land. Farms are disappearing and sinking out from under the feet of farmers.

Food production is the cause of about 26% of our global greenhouse gas emissions. Of that 26% about 31% is a product of livestock and fisheries, 27% is a result of crop production, and 24% is a result of our agricultural land use. Agriculture takes up 50% of global habitable (desert and ice free) land, 70% of the world's freshwater use, and 78% of our global ocean and freshwater pollution (Ritchie and Roser). The way in which we produce food today is exceptionally taxing on our environment.

Our use of fresh water in agriculture is especially unsustainable. 30% of the irrigated ground water in the United States comes from the High Plains Aquifer. 30% of this aquifer has already been depleted and we can expect another 39% to be depleted over the next 50 years. This aquifer would take 500 to 1300 years to completely refill (Steward, et.al.). This is clearly unsustainable.

This of course brings to light the negative externalities associated with farming. The cost of modern agriculture is not fully captured by market prices of finished produce since farmers and agribusinesses do not account for the cost of erosion, depleting future water stores, or pollution in their prices. This degradation of the earth is an unpaid cost which will eventually have to be paid through restoration efforts and efforts to stop climate change brought on by emissions.

The production of food, particularly agricultural production, in the modern world is replete with issues which have gone under the radar in economics literature and education. While farming is typically thought to be the classic case of perfect competition, we can clearly see that this is only true up to the farm gate, and where farmers are concerned. In reality there are massive firms with overwhelming market power on both ends of the agriculture industry which make for a largely uncompetitive market. In addition to uncompetitive markets, there are also market failures associated with negative externalities and environmental degradation in the agriculture industry. This real picture of modern industrial agriculture hardly resembles the neoclassical economics picture of agriculture.

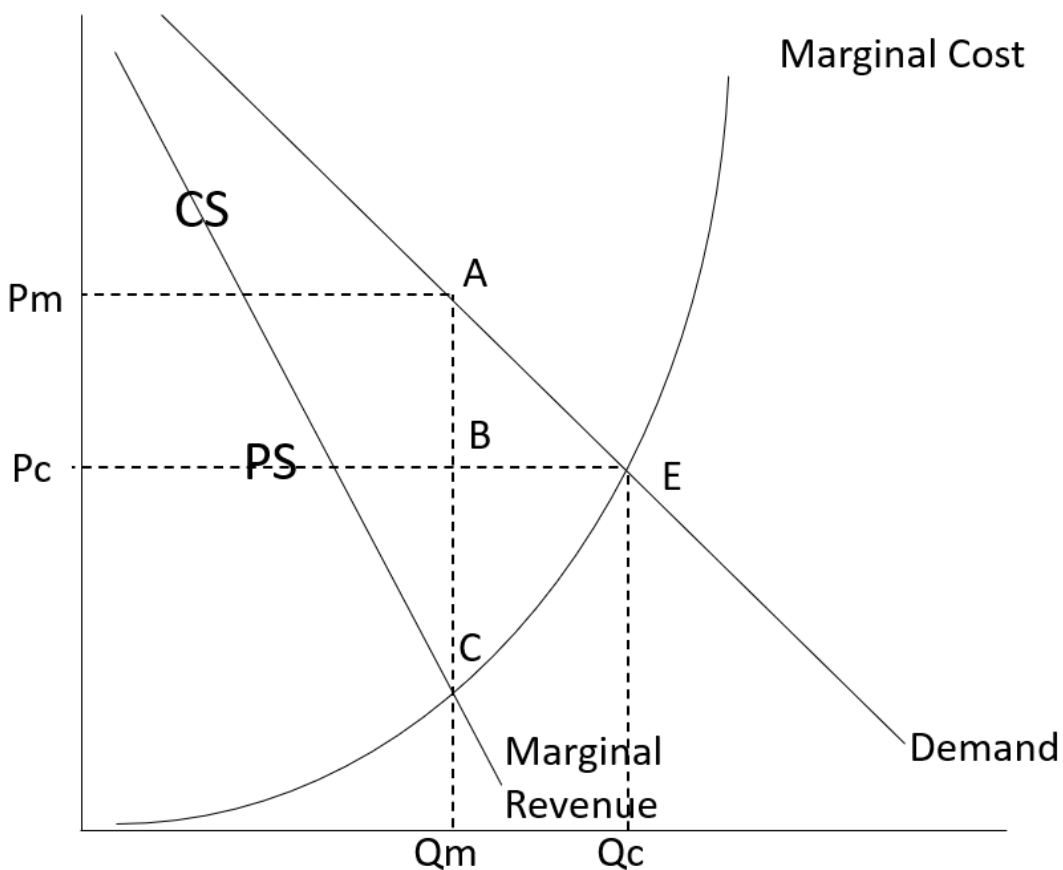
### **IV. Welfare Analysis**

Welfare analysis of industrial food production is a story that tells itself given the information presented above.

Since producers of inputs such as feed, hatchlings, and newborns are non-price-discriminating monopolists they reduce production down to the profit-maximizing monopoly level where marginal revenue is equal to marginal costs at point C on the graph below. They then charge the

price where that level of output meets demand at point A for the product resulting in a lower level of output ( $Q_m$ ) at a higher price ( $P_m$ ) than in a competitive situation. This change in production and price results in a deadweight loss ( $ACE$ ), and in the monopolist firm capturing some of the consumer surplus which would have otherwise been passed on to the farmer purchasing the inputs. This is represented with a producer surplus of the area above the marginal cost curve ( $P_m, A, C$ ) and a consumer surplus below the demand curve ( $P_m, A$ ). The consequence of this is then those farmers produce less, meaning less food and more expensive farm outputs. These big meat producers also exercise monopoly power in relation to consumers. In the final consumption market for meat consumers see prices at ( $P_m$ ) which are above the competitive price at ( $P_c$ ) as well as a quantity of ( $Q_m$ ) below the competitive quantity of ( $Q_c$ ) resulting in a consumer surplus reduction down to the area below the demand curve ( $P_m, A$ ). This means consumers deal with higher prices and a lower quantity because of this monopoly power.

**Figure 1.**



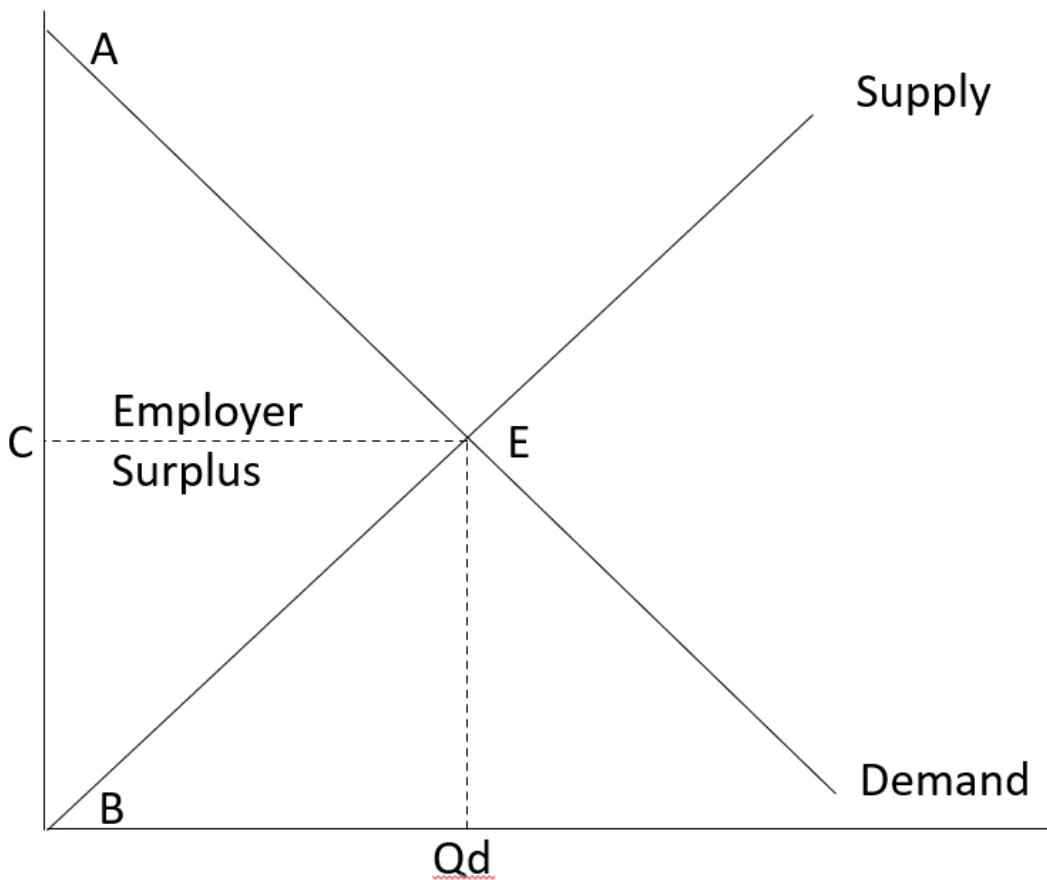
**Monopoly Input Producers**



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On the other end farmers have to contend with monopsonist market power. Since most of these contract arrangements are paid out to farmers on a tournament pay system where farmers productivities are compared to other farmers productivities (via the rate which they transform grain feed into meat weight) then pay is ranked accordingly, these monopsonists are price-discriminating. Since these are price-discriminating monopsonists the quantity demanded is the same as it would be in a perfectly competitive market, but each farmer is paid a different price for their output. Since there is no absolute market price each farmer takes their minimum price meaning that there is no producer surplus, and the purchaser takes the entire market surplus in the form of employer surplus which is the area (A, B, E) on the graph below, whereas the wage paid to farmers is the area (B, E, Qd). In a perfectly competitive situation, the price paid to farmers would be at price C meaning farmers wages would be the area (C, E, Qd, B), employer surplus would be the area (A, C, E), and employee (farmer) surplus would be area (B, E, C). Thus, we can see that the area (B, E, C) is the sum total of all the wages and surplus lost to farmers because of the monopsony position of the purchaser of contract farm labor.

**Figure 2.**



**Labor Market for Contract Farm Labor**

In both scenarios the farmers and ranchers are deprived of their surplus which is reflected in higher costs for inputs and lower wages at the end, leaving them in a difficult situation. Often the input producers and the purchasers of finished livestock are the very same company operating with a contract farming system meaning that one company can come to capture almost the entire surplus of the livestock market.

## **V. Solutions**

In this section I will be discussing various solutions to the issues presented in the previous two sections. Solutions will include both solutions to the problems presented as such, and solutions to reforming the economic perspective on the industrial food system.

Considering the potentially addictive qualities of today's processed food, we should advocate for a public policy response similar to how we address other addictive substances. Addictive foods should be labeled as such much like cigarettes and alcohol. We should also engage in information campaigns to further inform people of what they're eating and dissuade consumption of highly processed, unhealthy foods. We should advocate for nutritional education, and for incentives to purchase healthy foods with government nutrition assistance such as SNAP. Furthermore, policymakers should begin investigating advertisements for unhealthy foods pitched at children. We have seen firms like McDonalds take advantage of children by advertising fun and toys to hook them on their unhealthy food. Eating problems begin early in life so intervention should begin just as early. There should be penalties for predatory advertising which targets children and aims to sell them junk food. These sorts of reform could go a long way in combatting the issue of addictive, unhealthy foods.

On the agriculture side we should advocate for policy responses to restore competition to the industry. Agriculture is in desperate need of antitrust regulation to break up the stiff control which large agribusinesses hold over the market. Under the Obama administration Secretary of Agriculture Tom Vilsack pushed for new GIPSA regulations which would restore some competition to the industry, but key firms in the industry pushed back through lobbying efforts which ultimately defeated the rules. This anticompetitive policy should be pushed through despite any future efforts by these agribusiness firms.

The Biden administration has renewed efforts to restore competition to the agriculture industry. In July of 2021 Biden signed an executive order "On Promoting Competition in the American Economy," which, among other things, instructed antitrust agencies to vigorously enforce antitrust laws and had a particular focus on agriculture, healthcare, labor and tech. In addition, the administration has also recently allocated \$1 billion to support and grow independent meat processing citing that over-reliance on the few existing firms in the processing industry leaves us vulnerable. This administration is also paying attention to the problem of farmers and ranchers not seeing the profits of soaring meat prices and seeking solutions. This renewed fight to restore competition in agriculture, support independent firms in the industry, and help farmers and ranchers fight back against abuses of the concentrated meat packing industry is a good first step in solving the problems faced in modern industrial agriculture markets (Eller).

In agriculture itself we need fundamental overhaul to implement sustainable methods of farming. Current conventional farming practices damage land and pollute the environment through

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emissions of fossil fuels and chemicals in the runoff water. To combat erosion farmers should plant cover crops, use tree lines on the edges of their fields, and make use of a myriad of existing methods to do so. To reduce the amount of artificial fertilizer used farmers should rotate crops with those which can naturally fix nitrogen into the soil. Lastly, we need wide-scale adoption of localization. We should make an effort to eat food from local farms, process finished livestock locally, and reduce the amount of travel associated with the agriculture industry to cut down on emissions.

Economic theory itself is also in need of reformation when it comes to the industrial food system. The theory of market demand which neoclassical economics brings to the table is not sufficient in understanding the demand for modern foods. The neoclassical perspective on demand would say that people consume in a rational, utility-maximizing fashion, whereas we understand this to be false in the markets for particular addictive foods. As much of the food we consume in the developed world, particularly the United States, is processed and addictive we must reform our economic understanding of these markets to acknowledge that consumers can behave irrationally, and against their long-term interests. This isn't to say consumer behavior is *unpredictable*, rather that it's often *irrational*.

The key issue is that neoclassical theory offers no real explanation of consumer choice beyond the assumptions made about choices. Neoclassical theory assumes that preferences are given and easily revealed through choices but makes no attempt to explain why consumers have which preferences.

Economic theory shouldn't rely on the presupposition that consumers will choose that which fully maximizes their utility (loosely understood as welfare), rather we should understand behavior surrounding food as sporadic. Consumers may engage in pathological consumption of particular foods with brief spurts of concern for the future characterized by conforming to fad diets and perceived better eating which is largely cultural and may not be informed by proper dietary science. This is hardly rational.

Economic theory should also be reformed to acknowledge the effectiveness of present-day marketing. Where neoclassical theory would refer to the idea that "consumer is king" meaning that consumer choices ultimately decide winners and losers in the marketplace, the reality is that these consumer choices may not be original to the consumers. Marketers today understand human psychology at a high level, often seeking professional psychologists for advice. This understanding of human psychology has allowed them to take up residence in the minds of consumers at will and steer consumer decisions before the question of "what should I eat" has even been presented to them. The idea that the consumer is king, then can only be true in the most superficial sense.

The study of economics could make strides in developing a more satisfying theory of consumer choice by taking an interdisciplinary approach to the field. Economists could work with psychology and neuroscience to develop a real theory of consumer choice. Psychologists and neuroscientists have done the heavy lifting already. The knowledge of how people make choices is no mystery to us. Economists should take advantage of the work done by other social and behavioral sciences to form a real and satisfying theory of consumer choice. The emergence of behavioral economics is perhaps a promising start to this kind of collaboration.

On the production, side neoclassical theory, and indeed all mainstream economics education, makes no attempt at all to truly understand the modern industrial food system. The idea that agriculture is a quintessential example of perfect competition is one of the most common lessons on perfect competition, but it is patently false beyond the farm gate. The reality that the agriculture industry is a prime example of market power and imperfect competition should be inserted into economic theory and education. Agriculture should be an example used when discussing monopoly and monopsony power alike since it is plagued with both.

## **V. Conclusions**

Neoclassical economics is the predominant economic theory of the present day. While it has provided us with a wide range of economic and political insights into how markets function, it does no justice to the modern industrial food system. The neoclassical perspective of the modern food system would have us believe that people consume rationally, that consumers rule the market, and that agriculture is perfectly competitive.

We can see through close analysis of the modern food system that these presuppositions fall short by a long shot. The reality of food consumption is often characterized by pathological consumption largely primed by aggressive marketing. People often eat thoughtlessly, which can have deleterious consequences for their health and well-being. Agricultural production takes place under the purview of large industrial titans which rule over the market for almost all livestock. The welfare consequences for farmers are catastrophic considering they lose most of their surplus to monopolist input producers and lose all their surplus to price-discriminating monopsonist purchasers of finished livestock. These are not qualities of perfect competition.

Neoclassical economics, and economics education cannot explain the modern industrial food system from their current perspective. We need thorough re-examination, and extensive study in the future to develop a cohesive economic understanding of this system. This industrial food system has several problems which bring harm to many people. Only through an honest, wholesale evaluation of the way in which we study this system can we fully understand it, and only through a comprehensive understanding of this system can we begin to change it and make amends for the issues which it has created.

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