Transcript: Economics of hog farms and supply chains

The opinions expressed are those of the author and do not necessarily reflect the views of Charles River Associates, its clients, or any of its or their respective affiliates. This podcast is for general information purposes and is not intended to be and should not be taken as legal advice.

Michelle Burtis: Welcome to the *CRA Sessions Podcast*, where we cover issues relating to antitrust and competition, intellectual property, ESG and sustainability, management consulting, and more. CRA is a leading global consulting firm that offers economic, financial, and strategic expertise to major law firms, corporations, accounting firms, and governments around the world.

My name is Michelle Burtis, and I am your host for this episode today. I'm a senior consultant to CRA and an expert in antitrust damages and intellectual property matters. Today we'll be talking with my colleague, Professor Thomas Hubbard. Tom is a senior consultant to CRA's, Antitrust and Competition Practice, as well as an economist and professor at Northwestern University.

Today we'll be talking about one of Tom's recent client engagements that dealt with hog farms, supply chains, vertical integration, and more. The litigation has quite the history. In fact, there's a recent book about it called *Wastelands*. It's written by Corbin Addison, and it reads almost like a John Grisham novel.

It's about the legal battle between some property owners in North Carolina and Smithfield, a large food company owned by a Chinese conglomerate that produces mostly pork products. Smithfield contracts with hog farmers who raised the hog according to Smithfield's specifications, and Smithfield then produces and sells the pork consumer products like bacon, for example.

The plaintiffs in the litigation were, and for the most part, are neighbors to these hog farms. They own their property before the hog farms were built near their homes. The counties where both the hog farms and the plaintiff neighbors are located are known as hog country in North Carolina. In four North Carolina counties, there are five million hogs and only 200,000 people.

And the hogs generate an unfathomable amount of waste. But the method of waste disposal used by the hog farms has been, well, pretty unimaginable. The hog waste is retained in lagoons. Those are giant ponds the size of several Olympic swimming pools. And when these lagoons get full, the hog farmers hook up giant jet propulsion spray guns, and they turn them onto the surrounding fields that grow grasses that are ultimately supposed to absorb the waste.

Well, as you can imagine, these practices impacted the neighbors of the hog farms. The waste generated unbearable odors and ended up on their houses. It attracted flies and buzzards. And it caused health effects, like breathing problems and heart problems. So, the neighbors, after trying for years to get various government agencies to intervene without success, sued Smithfield for what is known in the law as nuisance.

Five of these cases were tried in front of five different juries, and each of those five juries found for the plaintiffs. And they were awarded hundreds of millions of dollars in damages. Tom was contacted by the plaintiffs' lawyers in the litigation and worked with those lawyers for several years. His expertise as an economist helped the lawyers frame some of the legal and economic issues.

Today we'll talk about his involvement with a couple of those issues.

Michelle Burtis: Tom, who contacted you and what were the economic issues the plaintiffs needed your help on?

Thomas Hubbard: Well, John Hughes, a plaintiff attorney on the case, contacted me. John is an attorney at Wallace and Graham in Salisbury, North Carolina. He wanted to talk about issues involving vertical integration, control rights, and the cost and benefits of nuisance as applied to the case.

MB: Let's start with the issue of vertical integration and control rights. Tell us what that issue is and why it was so important in the litigation.

TH: Broadly speaking, understanding why the supply chain was organized the way it was, helped you understand the incentives at play and therefore the liability issues associated with the nuisance claim.

MB: But in this case, Smithfield didn't own the hog farms, but contracted them. So, they weren't in the strict sense, vertically integrated. So how did you think about the issue of whether Smithfield had control over the farms and ultimately the responsibility for the waste management?

TH: You needed to look at the contracts between Smithfield and the hog farms, observe who had what decision rights, and analyze the arrangements from an economic perspective.

MB: As an economist, how do you think about that question? How do you think about those contracts?

TH: You want to think about how the specific control rights are allocated. That is, the control rights that are in the contract between the parties and what the residual control rights – those that are not specified in the contract – are. The other thing that helped with my economic thinking was visiting the farms themselves. So, I asked to visit them to see the operations firsthand. And tromped around one dressed in a hazmat suit. I saw a few of the others at a greater distance. Field work like this is sometimes highly complementary to evidence from contracts and the economic theory.

MB: Did these contracts have benefits? That is, were they efficient in the economic sense?

TH: They certainly created efficiencies. A key aspect of the way production was organized here was that Smithfield and not the hog farmers owned the hogs. And because Smithfield owned the hogs, it was efficient for it to have control rights over decisions that affected the value of the hogs, such as how they were fed, how they were medicated, whether they were near other farms, and so on. Just like if you own your car, you have control rights over decisions that affect the value of your car, such as how it's maintained, who is allowed to drive it, and so on. Smithfield's contracts with hog farms did just that. If the owner of the hog farms rather than Smithfield owned the hogs, as was the case historically, then it would have been efficient for the owner of the hog farm and not Smithfield to hold these rights.

MB: So ultimately, what conclusion did you reach?

TH: Smithfield's contracts with growers reflected their incentives to maximize the value of the hogs but did not account for any adverse effects these decisions might have on their neighbors. A good example of this is the provisions that prevented hogs from being near other hog farms to inhibit the spread of disease. Contracts prevented farm from being near where other hogs lived, but not near where humans lived.

MB: Was your economic conclusion consistent with the way the court and the juries came to understand the relationships between the hog farmers and Smithfield?

TH: I believe so, as five different juries in five different cases ultimately found that it was Smithfield who was liable for hundreds of millions of dollars in damages.

MB: Would this always be the case? That is, what was it about these particular contracts that led you to your conclusion?

TH: It's funny, I'm sometimes approached with respect to these kinds of claims. Most of the time, I find these claims are inconsistent with the economics. But here I saw quickly that the claims were entirely consistent with the economics, and I helped the attorneys shape arguments that had this consistency.

MB: So, let's turn to the second issue: the social value of the hog farms and the nuisance issues. Why is the social value important to a nuisance claim?

TH: My understanding is that if the benefits to an operation creating a local nuisance are local as well, then this is relevant to a nuisance claim. A hospital is a nuisance to neighbors that have to deal with ambulances' sirens during the night, but the hospital generates large local benefits and generating such benefits inevitably involves local nuisances as well. Many things that generate large local benefits can also generate nuisances in some sense. You can't both be a beneficiary from an operation and claim that it is also a nuisance.

MB: And how did you approach that problem in this case?

TH: It was important to lay out how an economist approaches the problem of value creation. Some approaches might start an analysis of social value by looking at measures of the local economic importance of hog farms in terms of jobs and other measures. But a correct approach would start from the principle that value creation of a business or supply chain consists of the difference between the willingness to pay of end users for the product, less the economic costs of supplying the product to them. Here, it is the willingness to pay of consumers for Smithfield bacon, less the cost of supplying these consumers the bacon. The direct social value of the hog farms is that they are part of a supply chain that provides bacon in other pork products to consumers. This might seem obvious but it's easy to see how judges and juries might get confused on this point. I helped the attorneys with respect to this.

MB: And how did you assess the extent to which the social value created was local?

TH: Well, the value created by this supply chain is in part captured by consumers and in part by participants in the supply chain, including Smithfield, the hog farm owners, and the workers. A small share of the value captured by consumers is local. Smithfield's customers are all over the world, and a tiny share are in Eastern North Carolina. And it was clear from the evidence of the case that most of the benefits captured by entities within the supply accrued to entities other than locals. Most of the profits went to the owners of the Chinese firm that owned Smithfield, and it was clear that neither the hog farmers nor those that worked at the hog farms were receiving more than a sliver of these benefits. Put simply, the nuisances associated with the operation were clearly local and the beneficiaries associated with the operation were mostly consumers and shareholders that were not local. So, it was not at all like the hospital example.

MB: So, Tom from our conversation, it sounds like you really enjoyed working on this case. Tell us, what did you find was most satisfying about working on the project?

TH: Well, to me, economics has always been a useful lens through which to understand the world. And here it was all sorts of fun seeing how economics, in combination with the evidence from the case and visiting the hog farms firsthand, could explain why the supply chain is organized the way it is – vertically integrated in some ways, but not vertically integrated in others – and why this created good incentives on some dimensions, but not on other dimensions. It was also very gratifying to help the attorneys and ultimately their clients shape arguments that used good economics effectively. And even more gratifying when they repeatedly won at trial.

MB: Thank you, Tom, for talking us through this really interesting case. And thank you to our listeners for tuning in. I'm Michelle Burtis, a senior consultant to CRA's Competition Practice. If you'd like to learn more about Tom and his other cases or CRA's antitrust and competition capabilities, please visit our website at crai.com.