Teaching and Educational Methods

Teaching The Economics of Corporate Social Responsibility: A Mixed Motive Bargaining Simulation Game

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Abstract
Over the last three decades corporate social responsibility (CSR) has become an increasingly significant activity for most firms. Consequently, it is important for students to understand the economics of CSR and the possible trade-offs involved. However, teaching the economics of CSR is challenging for several reasons. The paper presents a mixed motive bargaining game that is designed to overcome some of these challenges and teach the economics of CSR in a novel and engaging way. The game is designed to be played during class and can be played in either small or large classes. The underlying theory and logic of the game is explained followed by an example from the game being played in a class of 70 students. All documents needed for running the game are provided in an online appendix along with an Excel workbook that contains the underlying program for the game.

> "*How easily we can be mistaken in matters which concern us closely, and how much also the judgments of our friends must be suspect when they are in our favor*."
>
> —René Descartes, Discourse on Method and the Meditations

1 Motivation

Corporate social responsibility (CSR) is defined to be "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams and Siegel 2001, p. 17). For example, McDonald's states it is on track to eliminate Highest Priority Critically Important Antibiotics (HPICAs) in their chicken supply by the end of 2027 (McDonald's 2023). Coca-Cola, in an effort to reduce the environmental impact of their bottles, introduced a bottle made from 100 percent plant-based plastic in 2021 (Webber 2021). These are just two examples of CSR activities, but they are ubiquitous, covering many issues such as reducing pollution, carbon emissions, pesticide use, antibiotic use, food waste, genetically modified foods, inhumane treatment of production animals, and labor inequity, to name a few.

The auditing firm KPMG has been tracking CSR for 30 years, and CSR activities have increased significantly over the last three decades. In 1993, only 12 percent of the top 100 companies in revenue reported CSR activities, but by 2017, this had grown to 75 percent. In the food and beverage sector, 73 percent reported CSR activities in 2017 (KPMG 2017). The Governance and Accountability Institute (2020) found that 90 percent of the S&P 500 index companies published sustainability reports, a form of CSR.

As an increasingly significant part of businesses activities, it is important that students understand the economics of CSR. However, teaching the economics of CSR is challenging. On any CSR-related issue, there are usually two sides: the CSR side, representing the socially responsible interests, and the business side, representing business interests. The objectives of these two sides are often at odds and in tension. For example, in the context of Coca-Cola pursuing plant-based bottles, Dana Breed, the Global Research and Development Director for packaging and sustainability at Coca-Cola stated, "Our

goal is to develop sustainable solutions for the entire industry. We want other companies to join us and move forward, collectively. We don't see renewable or recycled content as areas where we want competitive advantage" (Webber 2021). Note this is a diplomatic way of saying that Coca-Cola faces a trade-off of giving up some competitive advantage, and hence profitability, for pursuing a sustainable solution.

Often the CSR side wants business to move in one direction, and business does not want to move in that direction. Proponents of CSR activities will often pursue legislative actions to induce change that is often countered by business proponents. For example, California's Proposition 12 is one of the most important and contentious CSR-related issues in agriculture in the last decade because it places minimum housing size requirements on egg-laying hens, breeding pigs, and calves raised for veal and bans the sale of eggs, pork, and veal in California that does not adhere to these requirements. Though it was passed in 2018, it has been continually contested in court since that time, reaching the Supreme Court in May 2023, who upheld the law (e.g., Torrella 2023).

Perhaps most importantly, as these examples should illustrate, CSR issues usually encompass some moral, ethical, or equity component that can invoke passionate divisiveness and protests. Consequently, in a classroom setting, one group of students may viscerally support a CSR activity (e.g., carbon reduction), and another group may viscerally support the opposite position of a pure business activity that is at odds with the CSR activity (e.g., economic growth). Because of the emotional content of the topic and cognitive biases involved (e.g., confirmation bias, Dunning-Kruger bias, status quo bias), neither group can see the other's viewpoint and provide a balanced, objective perspective on the trade-offs involved that could possibly lead to a better societal outcome.

The purpose of this paper is to provide a novel tool for helping students gain a better understanding and broader view of CSR issues and the trade-offs involved. CSR issues are a special case of the more general problem of a mixed motive bargaining game. A mixed motive bargaining game can occur in any scenario where two sides have a mix of coincident and opposing views but must come to some agreement, such as on political, business, family, or societal issues requiring some type of negotiation and compromise. Clearly, this applies to many agricultural-related issues, such as trade agreements, carbon emissions, animal rights, and labor inequities, but it is also at the heart of many legal debates, such as gun control or abortion, where there are two opposing sides trying to come to some agreement. Thus, the game will be useful for students of all disciplines wherever there may be a difference of opinion, but a compromising resolution is required (e.g., economics, business, political science, law, history, etc.).

The paper explains a role-playing mixed motive bargaining game that has been developed for teaching the economics of CSR in a unique way. The structure of the game is general enough to be applied to any scenario where there are mixed motives (e.g., carbon emissions, pesticide use, inhumane treatment of production animals). As an overview, students are randomly assigned to teams representing each side of the issue: the social activist side (e.g., environmentalists) and the business activist side (e.g., industrialists). Opposing matched teams go through multiple negotiation rounds of offers and bids until they discover a socially optimal solution that differs from their individual optimums. The game is especially useful for helping those with opposing views to have a better appreciation for the other side and demonstrating to those from different disciplinary backgrounds the trade-offs and solutions required. The game is structured so that it can be played during regular class time and can be played in either small or large classes. The results of an application of the game in 2022 for a class of 70 students are given.

2 Underlying Conceptual Framework

The academic literature on CSR is now rather long, but the basic economic principles are described in several early papers (e.g., McWilliams and Siegel 2001; Jensen 2002; Husted and Salazar 2006). We take our lead from the logic of Jensen (2002) and specify a CSR objective function that becomes embedded in

the firm's objective function. Davis and Serrano (2016, Chapter 13) give a nice undergraduate graphical treatment, so we construct the game based on their graphical treatment.

There are essentially two players in the game. Let *s* denote the individual focused on the social objective, the social activist. Let *f* denote the firm, which is focused on the firm's objective prior to any consideration of CSR. Initially, each player is assumed to have separate objective functions to be maximized. The social activist objective function is denoted as $S(X)$, and the firm's objective function is *isolated* profit at this point and denoted as $F(X)$. X is some variable that is chosen and controlled by the firm and could be any choice variable of the firm. It could be an input or an output. To make the application completely general, we will express this variable in terms of the percentage of some relevant unit. For example, it may be the percentage of factories exceeding a carbon emission target or the percentage of poultry farms not using cage-free housing or the percentage of some multiproduct firm's output attributed to one specific product. To make the example concrete, we will use the Davis and Serrano (2016, Chapter 13) application and assume that X refers to the percentage of unhealthy foods a multiproduct food firm sells (e.g., a grocery store, a multiproduct food firm such as PepsiCo, or more generally the food industry). This is a relevant and timely application because the popular press, in all its forms, is replete with passionate critics and defenders of the amount of unhealthy food in the food system (e.g., Nestle 2007; Desrochers and Shimizu 2012; Lusk 2013; Moss 2021). Let X^S be the level of X that maximizes S and let X^F be the level of X that maximizes F. Importantly, at this point, these two levels are determined separately and are different, $X^S \neq X^F$. Given those interested in a healthier food environment, this would imply $X^S \leq X^F$. In words, the social activist wants the firm to sell less unhealthy foods.

Up to this point, there is no engagement between the individuals *s* and *f*. However, all firms have a public image regarding their degree of being socially responsible and producing social benefits, beyond just the products they sell. We refer to this image or degree of goodwill as the firm's stock of social capital, call it G, and it is considered a valuable resource that can be either increased or depleted through various actions. It can be considered the degree to which one person's beliefs and actions align with another person's actions and beliefs. Thus, the more in line are two individuals or agents' beliefs and actions, the higher is the social capital stock. Clearly then, this can relate to issues of trust, sympathy, forgiveness, and general emotional connection between individuals and thus higher efficiency in interactions (Adler and Kwon 2002). In the present toxic food environment context, the stock of social capital will be a function of how much unhealthy food is produced or $G(X)$. Thus, as the firm sells more (less) unhealthy food, their social capital stock will decrease (increase), but their profitability may increase (decrease). So as X approaches X^S, their social capital stock increases, but as X moves away from X^F, isolated profitability decreases. At the conceptual level, the analysis is then rather straightforward. The firm chooses X to maximize its utility function that now includes profit and social capital, or in its most general form, $U = U(F(X),G(X))$.

However, as Jensen (2002) points out, the problem is that while profit F is an observable, cardinal, and objective variable, capital stock G is a latent and subjective variable. Consequently, while the firm can adjust X and objectively see the effect on profit F, that is not the case for the effect on social capital G. Even within the same organization, two individuals may disagree on the level of the social capital stock associated with some level of X, with some claiming it is low and others claiming it is high. In mathematical terms, without some objective measure of G, we do not know how $G(X)$ changes as X changes. Thus, unless there is some observable measure or index of social capital tied to the level of X, the firm cannot choose what level of X will maximize U. Furthermore, given its subjective nature and without some common measurable unit, the social activist *s* and the firm *f* will have difficulty even beginning a dialogue on the subject and will remain at polar extremes, as is often observed in the real world. The social activist group *s* may claim their position would increase both profit and social responsibility, whereas the firm *f* may claim pursuing the *s* position would decrease their profits and stakeholder wealth. Thus, teaching the economics of CSR breaks down at this point because the trade-

offs between *F* and *G* are subjective and cannot be represented.

A simple way to circumvent this problem for teaching purposes is to create an indirect payoff function between the social activist *s* and the firm *f*. At first, this may seem contrived, but a closer consideration reveals it is consistent with what the social activists *s* does and what the firm *f* perceives. The social activist *s* can influence the social capital stock of *f* by spending resources on things such as advertisements, lobbying efforts, social media influencers, etc. The more money the social activist spends, the more pressure there is for the firm to reduce X^F toward X^S. As the social activist spends more, the firm feels more pressure and perceives a greater payoff from adjusting their level of *X* such that their capital stock improves (e.g., see the quote in intro by Dana Breed of Coke-Cola). So, at least for teaching purposes, we can consider the social activist as paying a price for each unit, *X* decreases from X^F to X^S. In return, the firm *f* experiences an increase in their social capital stock proportional to the payment with the units expressed in dollars, so the unit problem is addressed.[1] For simplicity, the payment function is assumed to be linear yielding a graph like Figure 1. The trade-off the firm faces is between the loss of *isolated* profit in moving away from X^F versus the gain in social capital, measured in dollars, in moving toward X^S. This trade-off makes the relevant objective function for the firm to be the *joint* profit function of isolated profit and social capital, which in the graph is denoted Profit + $CSR.[2] As the graph shows, the point that maximizes this joint profit function X^J lies between X^S and X^F.

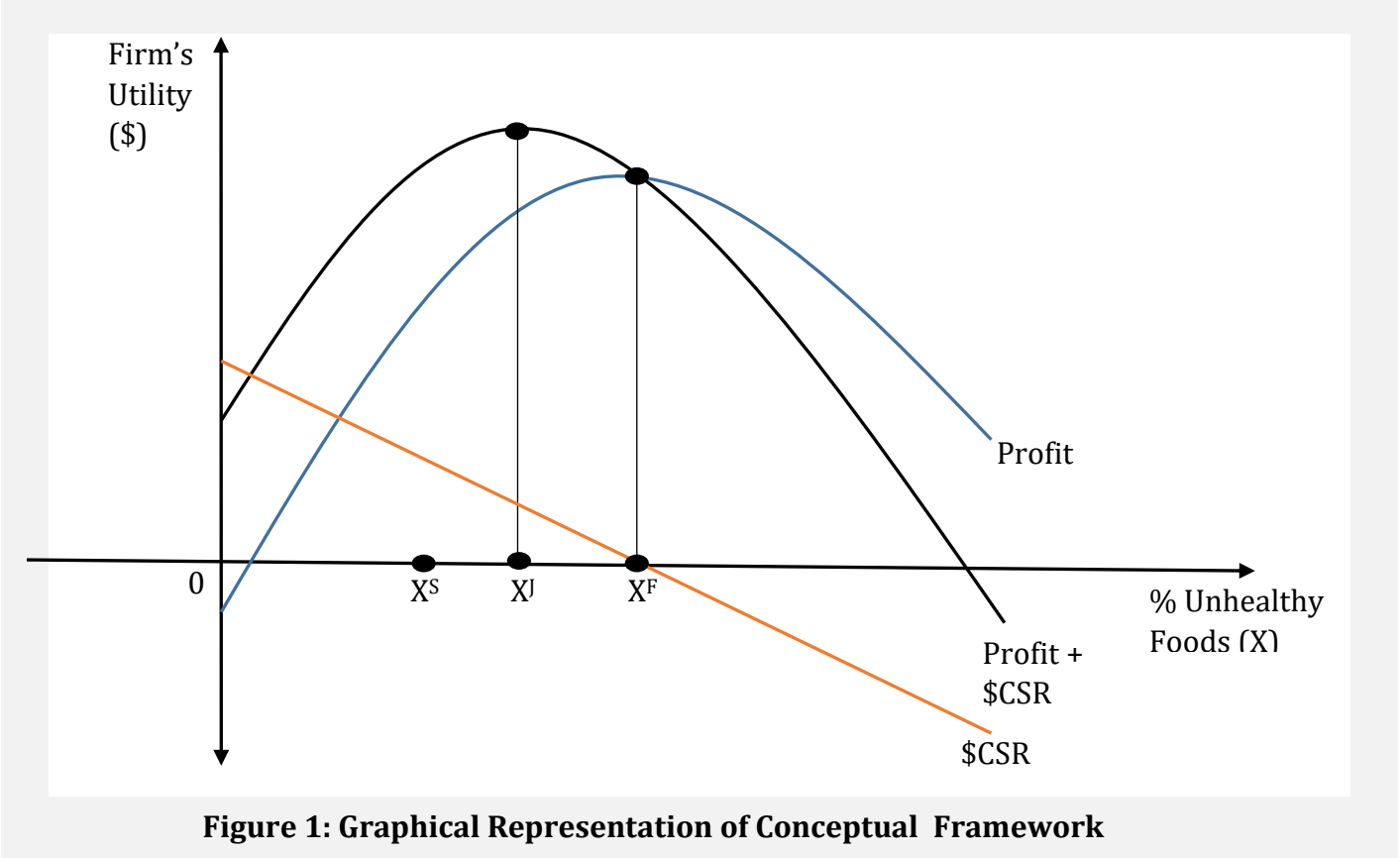

Figure 1: Graphical Representation of Conceptual Framework

[1] One way to think about this is within the context of willingness to accept: how much does it take for the firm to be willing to accept a reduction of *X*?

[2] For this paper, we are assuming there is an inverse relationship or trade-off between a higher social capital stock and profit (i.e., the social capital payoff function has a negative slope). This is the most controversial and difficult case to come to agreement on. However, there are certainly win-win cases where the social capital payoff function could have a positive slope, or what is referred to as the "strategic CSR" case (Husted and Salazar 2006). Everything presented could easily be adapted to that case as well, and more will be stated about this in the conclusions.

3 Bargaining Game Structure, Stages, and Instructions

Before explaining the game structure to the students, it is useful to go through the conceptual framework and graph given above so they have a *conceptual* feel for the underlying economics of the game. However, just as in the real world, market agents do not know the true or actual underlying form or values of the objective functions that will be true in the game as well.

3.1 Game Structure

To turn Figure 1 into a bargaining game requires four key elements. First, there needs to be a team of students representing the social activist *s* and a team of students representing the firm *f* and the teams matched. These teams will negotiate to discover the level of *X* that is acceptable to both teams. Second, the students have to be incentivized to negotiate or have some "skin in the game," and the easiest way to do this is to tie the outcome of the negotiation to a grade on the game. This can be accomplished by having overlapping grade ranges for different levels of *X* as shown in Figure 2. The overlapping grade ranges are such that there is a small range of *X* where both teams can get an A, and this would be the optimal range for both teams (i.e., Pareto optimal).[3] However, there are overlapping ranges where one team can get an A, and the other team can get a lower grade (i.e., B, C, or D).[4] The students are told there is some range where both can get an A, and thus if they both do not get an A, they know there is still room for Pareto improvement. The key here is that if the team tries to stick to its independent (initial) optimal value, they will receive a very low grade. Third, just as in the real world, firms do not know their profit levels until after they take some action. Thus, the teams do not know the underlying functions

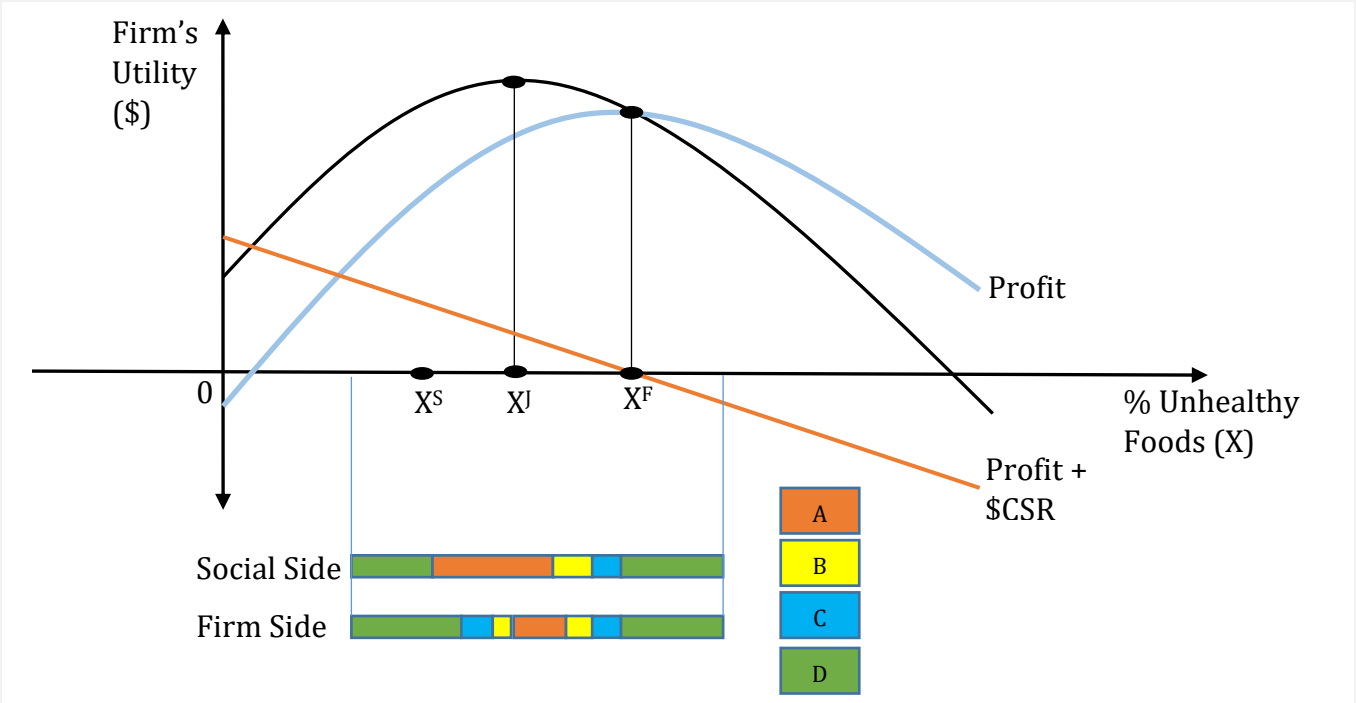

Figure 2: Graphical Representation of Conceptual Framework with Grade Distribution

[3] As a reminder, the term Pareto optimal means both parties can reach a higher utility level by adjusting their choice to a mutually agreeable position.

[4] The instructor can alter these ranges to their preferences in the Excel spreadsheet. See the Excel workbook explanation in the online appendix and accompanying Excel workbook.

generating profit and joint profit. All they will observe is for each level of X chosen, the value of isolated profit and joint profit. So conceptually, the students are discovering the optimal solution by effectively doing the equivalent of a grid search for the optimal level of X, with the optimal level being in the range where both teams get an A on the game. Fourth, the instructor or teaching assistant acts as the market monitor or the "invisible hand" and takes the agreed-upon level of X, enters it into the underlying simulation model, and generates the joint profit level for the firm and separate grades for each team based on the overlapping grade distribution. The underlying mathematics of the simulation model are given in the online appendix along with instructions on how to run the Excel-based simulation model. By choosing different levels of key parameters in the underlying simulation model, we can effectively represent different market outcomes so that what is optimal in one market may not be optimal in another market (see the online appendix for details)[5].

3.2 Game Stages and Instructions

The game is intended to be run during normal class time. Each team is provided with a set of instructions for the game, which are summarized here (the online appendix and online material have all game documents for the instructor and students)[5]. There are essentially seven stages.

1*. Initial Settings*

The game begins by Adam Smith, the market monitor (e.g., a TA), releasing two types of information: public and private. *Private Information*: The *f* team will be told their current or initial percentage level of unhealthy food they are selling (X^0) and the associated initial isolated profit level. Just as in the real world, this initial level X^0 may or may not be the X^F that maximizes isolated profit. The *s* team will be told their desired percentage of unhealthy foods (i.e., X^S) in the market and their total budget allotment for the game M. They will also be told the cost or price p they must pay for each 2 percent decrease in the X^0. They cannot spend more than their budget, or they fail the game. Neither group will be given the others' private information. *Public Information*: Both the *s* and *f* team will be told the initial percentage of unhealthy foods in the market X^0.

2. *The s Team Choice and Action*

The *s* team is the first mover and makes an offer to the *f* team of \$Z to go to Y percent of unhealthy foods in the market. For example, suppose the initial level of unhealthy food in the market is X^0 = 50 percent. The *s* team is given a \$400,000 budget, and they decide they want to spend \$50,000. Every 2 percent decrease cost \$10,000. Therefore, the \$50,000 will buy a 10 percent decrease or down to 40 percent.

3. *The f Team Choice and Action*

The *f* team must then either accept or reject this offer based on what they **expect** will happen to their **joint profits** (= profits without the payment + payment) if they switch from the initial percentage setting of unhealthy foods X^0 to the percentage Y percent associated with the \$Z payment. While they will know the payment offer \$Z, just like in a real market, the firm does not know exactly what will happen to isolated profits as they change X and, therefore, does not know what will happen to joint profits. As the unhealthy percentage is changed, isolated profit changes, and it may decrease more (less) than the additional amount of the \$Z payment from the *s* team, so the joint profit could actually go down (up).

4. *Contract Agreement*

Once the *s* team and *f* team come to an agreement, they submit a contract to Adam Smith, the market

[5] The online appendix and online materials can be requested at https://www.aetrjournal.org/.

monitor, stating the agreed upon payment and unhealthy food percentage the firm has agreed to produce. To make sure everyone on each team agrees with the contract, each team must turn in a contract signed by each team member.

5. ***Market Recalibrates, New Profit***

Based on the contract percentage agreement, Adam Smith enters the contract information into the simulation model (the market), and a new isolated and joint profit level is generated associated with this new percentage. This information is given to the firm to be used in the negotiations for the next round. For example, continuing the example from above, suppose at the initial unhealthy food percentage level of 50 percent, the isolated profit to the firm is $1,000,000. Although they do not know for sure, the *f* team thinks this may be close to the profit maximum (without the *s* payment) and therefore does not want to reduce the unhealthy food percentage to 40 percent. They, therefore, reject the initial offer of going down to 40 percent, and after some negotiation, both teams agree to go to 44 percent. This will cost the *s* team $30,000. Adam Smith enters this information in the market, and the isolated profit at 44 percent is $980,000, which is $20,000 less than $1,000,000, but adding the $30,000 to the $980,000 gives a joint profit of $1,100,000, which is higher.

6. ***Grade for Each Group***

The incentives of this game are such that the *s* team wants to get the *f* team to choose the percentage of unhealthy food as close to their target percentage as possible. The firm's objective is to choose the percentage of unhealthy food that maximizes **joint profit** = profit + payment. The closer the percentage gets to the *s* objective, the higher the grade for the *s* team. The closer the percentage is to the value that maximizes **joint** profit, the higher the grade for the *f* team. As mentioned, there are regions of overlapping As and Bs, but also As and Cs or Bs, and Ds. Much like the market, they do not know their grade until after the contract percentage is entered into the market. Continuing the example from above, at 44 percent, the *s* team would receive a B grade and the *f* team a C grade. The underlying reason for this is that both could do better by making further adjustments (i.e., there are Pareto improvements to be made).

7. ***Repeat Steps 1-6 or Terminate***

Repeat stages 2–6 until both teams are satisfied (stand) or the last round. Table 1 provides a sample table for both the *s* team (top panel) and *f* team (bottom panel).

4 The Application

The simulation game was run in Spring 2022 at Virginia Tech University in the Food and Nutrition Economics course. This is a senior-level course that is required of all dietetic majors at the university but is also taken by agricultural economics and several other majors (e.g., animal science, food science, economics, political science, psychology). Given this constitution of students, opinions on CSR are very strong both for and against the food industry. In 2022, there were 70 students in the class who were assigned to fourteen teams: seven teams representing the social activist side and seven teams representing the firm side. Each social activist team was paired with a firm team based on seat location proximity. The simulation is intended to be and was run during the class period, and was done in two successive class periods. We fixed the number of negotiation rounds at four, so they did two rounds in the first class and two in the next class. We allowed about 15 minutes per round for negotiations and 10 minutes for Adam Smith to compile the results, thus each round took about 25 minutes. While Adam Smith was compiling the results, we taught or discussed related materials.

The game is interactive, so all the negotiations are going on verbally at the same time. Consequently, unless the instructor is willing to implement some very strict rules with high monitoring cost across teams, the A grade solution is likely to become public information rather quickly and,

Table 1: Sample of Information Provided by Rounds to Each Team[a]

Social Activist	Initial Settings	Round #1	Round #2…	Final Round
Percentage before contract	50			
Target percentage	40			
Total budget before contract	$400,000			
Price per 2% points	$10,000			
Contract percentage	--	44		
Contract payment	--	$30,000		
Total budget after contract	--	$370,000		
Grade	--	B		
Firm				
Percentage before contract	50			
Profit before contract	$1,000,000			
Contract percentage	--	44		
Contract payment	--	$30,000		
Profit after contract	--	$980,000		
Profit + Contract payment	--	$1,100,000		
Grade	--	C		

[a] The social activist team does **not** receive the firm's information and vice versa. In the bargaining, they can share the information if they desire.

therefore, truncating negotiations and learning. To minimize this problem, we first created three market types by setting different parameter values for the underlying simulation model such that the optimal solution varied by market type. Table 2 provides the key data for the three types of markets. The main difference across markets is the budget and price per 2 percent decrease for the social side and the

Table 2: Initial Data by Market Types

	Social Side			Firm Side	
Market Types	**Target Percentage**	**Initial Budget**	**Price per 2%**	**Initial Percentage**	**Initial Profit**
Low	30	550	22.92	46	1,893
Medium	30	400	16.66	50	1,925
High	30	200	8.33	54	1,933

initial percentage of unhealthy food (i.e., X) and profit level for the firm side. By altering these values, the payoff function becomes steeper or flatter, and the maximum joint profit point will move either closer or further away from the firm's isolated profit maximization percentage X^F as shown and described in the online appendix. The low, middle, and high market types have joint profit maximums that are at X = 38, 42, and 48, respectively. The percentage ranges for each team in a specific market to get an A are respectively: low market (34, 36, and 38), middle market (40, 42, and 44), and high market (46, 48, and 50). Again, these maximums and ranges are **not** known to the teams. See the online appendix for more details on underlying model, the explanation of the accompanying Excel workbook, and the Excel worksheet for the full grade distribution overlaps by market type.

We then distributed the three market types across seven geographically named markets: Southeast (low), Northeast (middle), South Central (high), North Central (low), Southwest (middle), Northwest (high), and Hawaii (low). Each market had a social side representative team and a firm side representative team. The teams were **not** told their market type, and the only information a social team would receive would be the target percentage, initial budget, and price per 2 percent decrease for their market type. The only information a firm team would receive would be the initial percentage and the initial profit for their market type. Market types were assigned based on team (seat) locations within the classroom, so two markets in close proximity would be assigned different market types in order to hopefully minimize the optimal solution from one market being shared with a nearby neighbor market.

After explaining the game conceptually and the instructions, the game commenced. The teams were given 15 minutes to negotiate and come to an agreement on a contract, sign their contract, and turn in their contract to Adam Smith. Adam Smith would then enter the data into the appropriate market simulation model to generate the values for the next round of negotiations, if needed. The results of the simulation were then shared with the teams and then the second round of negotiations commenced, and this process continued until all teams decided to stand and are satisfied with their results.

5 The Results

As indicated, the rules specified there would only be four rounds. Table 3 gives the results by markets. Out of the seven markets, four markets were able to get an A for both the social side and firm side team members in the first round (Southeast, North Central, Southwest, and Hawaii). Southeast, North Central, and Hawaii corresponded to the low market type from Table 2. Based on the graphical review, the students should realize that the optimal solution for both teams will lie somewhere between their initial percentage settings, so it will be more efficient if they share this information, work together, and compromise. Thus, as this is effectively a grid search problem, an obvious tactic would be in the first round to choose the midpoint, or something close, between the two initial percentages. And indeed, the model parameter settings for the low market type are such that the optimal of 38 percent is exactly at the midpoint between the firm's initial percentage setting (46 percent) and target percentage setting of the social side (30 percent). Thus, the chosen levels are all very close to that (North Central 34, Hawaii 36, and Southeast 38), and all got As in the first round. For the middle market type, the midpoint between the firm's initial percentage setting (50 percent) and target percentage setting of the social side (30 percent) is 40 percent. The actual percentage that maximizes joint profit is 42 percent in this market, but the A grade distribution overlap covers the midpoint of 40 percent, thus the Southwest teams got an A in the first round as well.

Table 3: Results for All Seven Markets

	Southeast	Northeast	South Central	North Central	Southwest	Northwest	Hawaii
Market Type	Low	Middle	High	Low	Middle	High	Low
Number of Rounds	1	3	3	1	1	3	1
Contract Percentage	38	42	46	34	40	46	36
Social Side							
Contract Payment ($)	366.67	200.00	66.67	458.33	233.33	66.67	412.50
Final Grade	A	A	A	A	A	A	A
Firm Side							
Profit after Contract ($)	1,757.00	1,837.00	1,893.00	1,653.00	1,800.00	1,893.00	1,708.00
Profit + Contract Payment ($)	2,123.67	2,037.00	1,959.67	2,111.33	2,033.33	1,959.67	2,120.50
Final Grade	A	A	A	A	A	A	A

The markets that took three rounds were Northeast, South Central, and Northwest. South Central and Northwest were high market types, and choosing the midpoint did not result in an A in that market. In the high market, the firm's initial percentage setting was 54 percent, and the target percentage setting of the social side was 30 percent. The midpoint in that case is then 42 percent, but the percentage that maximizes joint profit in the high market is 48 percent, and the A range for both teams is 46, 48, and 50. The South-Central teams started at 42 percent in round one and then moved up to 44 percent in round two before landing in the A range with 46 percent in round three. The Northwest teams started at 42 percent in the first round but went the wrong direction in round two to 36 percent, which reduced profit even further. In the third round, they went in the right direction and increased their contract to 46 percent, which resulted in an A for both teams. The Northeast teams also took three rounds. The Northeast was a middle market, whose A range is 40, 42, and 44. The midpoint for that market from the initial settings would have been 40 percent, and the Northeast teams started at 36 percent in the first round. In the second round, they went in the right direction and increased the percentage to 38 percent, but that still was not an A for both teams. In round three, they increased the contract percentage to 42 percent, which was an A for both teams. Feedback from the students was that they enjoyed the game and found it helped them better understand the economics of CSR than simply lecturing on the topic.

6 Conclusions

CSR has become an increasingly important issue, especially for agricultural products. CSR often involves ethical and moral issues attached to products that can lead to very strong diverse opinions regarding the pursuit of CSR activities. The economics of CSR, therefore, are challenging to teach and further debatable because the measurement of CSR can be very subjective and difficult to measure; thus, trade-offs and different opinions are difficult to appreciate and reconcile. The purpose of this article was to students demonstrate a role-playing mixed motive bargaining game that can be played in the classroom to help better understand different perspectives and the economics involved. This is achieved by creating a CSR payment function that when added to a profit function creates a joint payoff function that both parties are negotiating to try to maximize. To incentivize the game, there are overlapping solutions where both teams may get an A (Pareto optimum), and there are regions where one team can improve without hurting the other—a Pareto improvement. The game is sufficiently flexible in that it can be administered in small or large classes during the class time. In the example given, it was played by 70 students, broken into seven matched teams. Four of the teams were able to get an A in the first round, and the remaining teams were able to get an A by round three.

The game is certainly not a pedagogical panacea regarding CSR, but it should provide a useful starting point for deeper classroom discussions on more difficult issues. For example, the key to allow the game to run is the ability to monetize the payoff to the firm from cooperating and negotiating. Clearly the more ambiguous this payoff is, the more difficult the negotiations become for the reasons cited early in the paper. This in itself is a key concept to understand regarding CSR, as emphasized by Jensen (2002), and with such subjectivity, one can expect within this context there to be internal conflicts with shareholders on the directions the firm should move to accommodate CSR activities.

Furthermore, the game as structured assumes honesty between the parties because they must agree to the percentage of the activity in the contract (symmetric information). However, it is well known that in such negotiations, there can be incentives and returns to asymmetric information and deception (Crawford 2003), such as in the case of "greenwashing." Greenwashing occurs when a firm pursues an action or makes a claim that on the surface seems to serve a CSR objective, but upon closer inspection is false or only partially true. There are numerous examples of greenwashing, such as McDonald's switching to paper straws that were supposed to help protect the environment but turned out could not be recycled, though the plastic versions they replaced could (Picheta 2019). And again, the general point made by Jensen (2002) about CSR measurement challenges applies because greenwashing adds noise to the signal and thus makes negotiations more difficult. Even with these limitations, the game provides a good starting point framework for a novel way of engaging students, within the CSR context, with some basic economic principles, such as trade-offs, bargaining, strategy, and Pareto improvements that can lead to deeper educational discussions on issues such as the economics of deception (e.g., greenwashing).

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