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## Session 118OF All You Can Eat Health Care?

Track: Education and Research/Health

Moderator: KRZYSZTOF M. OSTASZEWSKI

*Summary: This session covers the economic principles of “buffet pricing” and whether such pricing can be used for health care. Mr. Ostaszewski presents an argument in favor of “all you can eat” pricing of health care where consumers pay a fixed fee and have no constraints on consumption. The floor is then open for discussion of the pros and cons of this pricing structure.*

MR. KRZYSZTOF M. OSTASZEWSKI: The concept of buffet pricing is offering unlimited consumption to your consumers in exchange for a fixed payment. We will analyze it from an economic point of view and show why this is an economically viable idea. I will try to explain the circumstances in which this is economically viable. Buffet pricing doesn't always work. There are reasons, however, why it might sometimes work. I will discuss whether this is applicable to health care because this idea of unlimited consumption effectively shows up in the way the public thinks about health care.

When I arrived here, I was discussing my airplane ticket price with somebody. I came here by flying from Bloomington, Illinois to San Francisco, and then here to Dallas and finally I will fly back to Bloomington, Illinois. This cost me the same as it would have cost me to fly from Bloomington here and back. I guess my San Francisco stop was thrown in free. That's how it works with the airline prices.

For many people, the pricing of airline tickets seems to be crazy. I'm not convinced that it's crazy. It is very much related to an idea that you might have seen in certain places outside the United States, namely that when you go into a store and ask how much something would be, the answer is: how much are you willing to pay? That pricing design, economically speaking, is not a bad idea from the point of your producer. The purpose is to find the maximum price that the consumer is willing to pay, the so-called reservation price. That also is what you experience when you try shopping for a car. I was in that market recently, and I familiarized myself with all the Internet places to shop for a car. I did that because I'm frustrated by the “how-much-are-you-willing-to-pay” experience, which turns out to be very common with the car dealers.

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Let us go back to our main story. The story that I want to tell you is based on the paper, "Buffet Pricing," that I published with two other researchers at the University of Louisville, where I used to be when we published this. (I have since moved to Illinois State University.) The paper basically asks the question of whether it makes sense economically to give customers all they want, to take an "all-you-can-eat" approach. It appeared in *The Journal of Business* in 1999. If you'd like a copy, you can download it from my home page at <http://www.math.ilstu.edu/krzysio/BufferPricing.pdf>. My co-authors are Babu Nahata and Prasanna Sahoo.

Why did I connect this to health care? This idea is that consumers get as much health care as they want for a certain price. It already shows up in two very important circumstances: social insurance and HMOs. When we talk about any form of social insurance for health care, what is proposed is that we will find a way of financing the system, and you will be allowed unlimited access with no additional barriers to consumption. You have an "all you can eat" arrangement. That, in fact, is one of the principles of the Canadian system; once the premium is paid, and you are a participant in the system, no additional payments are required at any point, so you have unlimited access to the health care system. It is similar to going to, for example, a Chinese buffet restaurant.

The idea shows up in those circumstances because of social policy, not from the economic perspective. We don't think the government is doing this because they want to maximize profits. That would be the last thing you would imagine as the justification for it. However, if you familiarize yourself with the discussion of the provision of public goods in the new Course 2 microeconomics textbook, you will see that optimal provision of public goods is based on the same principle as a profit-maximizing monopoly. It's quite fascinating. Basically, what is shown in it is that given limited resources, typically the best policy for a provider of some kind of a public good is to act like a monopolist and maximize profits. That is generally the best use of resources available, and from that perspective, the government should act the same way in the provision of health care if it is treated as a public good. It's debatable whether you can treat it as such, but this is one of the positive externalities. That is, if public health is treated not as your individual good or service that you receive, but also as something that has an effect on the entire society, then there are positive externalities from your being healthy. You have some benefits from other members of the society where you live who are healthy.

One idea of how HMOs were supposed to function was that within the network, you would have limited barriers to your consumption, which is to say a lack of limits. You could see your provider quite a bit. That depends on whether you would have a co-pay or not. The idea of not having a co-pay and being able to see your provider any time you want is not common, but it has been debated.

What I want to propose is that while it's not really presented typically as a pricing problem from the economic perspective, I would like to ask you to consider this. I should stress that I discussed this with Dave Nelson of Humana, and he basically

disagrees with me. He said more or less that we need some mechanism for limiting consumption. What I want to propose to you is under what circumstances it makes sense economically to allow unlimited consumption. I will ask you to tell me how this can be done because I am not an expert on health care and I'm not a health actuary. I'm presenting the economic perspective here, and I would like to hear what you think about this. As far as the economics are concerned, and because we published this paper, I can somewhat present myself as an expert. I'm not an economist, but I play one for my students when I teach the class for Course 2.

What is this idea of buffet pricing in general? The funny thing is that until our paper, this wasn't clearly identified in economic literature, although you probably have seen this in your life. If you go to a restaurant and have any kind of a lunch buffet, you have buffet pricing. Amazingly, this is not a new concept. You also see buffet pricing with those Internet service providers that give you unlimited access for a fixed fee. My co-author Babu Nahata discovered that there are these buffet restaurants in Calcutta that have existed for roughly 3,000 years. They are restaurants for migrant workers that have a very limited buffet of vegetarian items that is reasonably priced and is functioning very well. The migrant workers are hired in Calcutta during certain seasons, and then they go back to their family. They live on a limited budget. The buffet fits into their budget very well and workers are very happy with the whole system. It must make some economic sense if it has survived for roughly 3,000 years.

The idea is, for a fixed entry fee, consumers can consume an unlimited quantity within a specified period of time. As I said, you see this in the new economy with Internet service providers or telecommunications companies that give you such a deal. It's typical in the U.S. to pay for local calling and then you can make as many calls as you want. Sometimes you have some form of this in long distance pricing. New York and Moscow subway systems use this pricing, where you pay a fixed fee and you can ride on the subway as much as you want. It's not used in London and it's not used in either Germany or Japan. In fact, Germany and Japan are two countries that seem particularly alien to the idea of buffet pricing. In Japan there was, based on what Babu Nahata told me, a case that went all the way to the Japanese Supreme Court, in which some people were arguing that transportation pricing should be based on the distance traveled. Imagine this for airlines in the U.S. It would be completely alien to us.

If you look at the way things are done in public transportation, especially in Germany and Japan, you'll see that almost everything is automated. You figure out your own price, and you pay for distance traveled. This relates to a question of how you price in economics and what we are used to. What is typically covered in standard microeconomics is what's called linear pricing, where the amount paid is proportional to quantity consumed, meaning that you have a price per unit that is identified. What you pay is based on the price per unit. Anything else is called non-linear pricing. Of course, one example is what happens when you buy a car. You typically don't buy several units of a car, although I was trying to argue with the car dealer that I might be buying two cars. I asked him if he would give me a deal. I've been unhappy with this experience.

What happens typically with non-linear pricing is that, sooner or later, it leads to price discrimination. That is a situation in which you have the same items sold at different prices to different consumers. A special case of price discrimination is when you offer the same price to different consumers, but your costs differ depending on who those consumers are. In general, any situation where different consumers are treated differently is called price discrimination. The most standard situation is any kind of public transportation that offers a lower price to a student or a senior citizen. That is actually price discrimination. U.S. laws basically say that it's okay to price discriminate as long as you don't hurt competition in the process; however, if you, in some way, are proven to price discriminate in a way that hurts competition, you'll be in trouble due to the Robinson-Patman Act. This is part of the antitrust legislation in the U.S. and it's important. Price discrimination, when used to hurt competition, is one of the indications of monopoly power that is part of proving that you are a monopolist. Again I'm not a legal expert here, but it's serious.

Let's take a look at those forms of nonlinear pricing. By the way, I was amazed that all this is now a part of the standard actuarial curriculum. To me, that was quite a revelation. If you were to take Course 2 now, you would have to study all this stuff. Buffet pricing is not yet in the actuarial curriculum, but welfare implications of price discrimination are.

One form of nonlinear pricing is a two-part tariff where you pay a fee to enter some establishment, and then, once you enter the establishment, you pay a per unit charge. HMO pricing of health care, from the economic perspective, follows this principle. You pay a fee to be a part of the system, and then every time you use the provider, you pay an additional fee per use. It has a per unit charge and then an entry fee. We will very soon get to the question of what is the optimal way of doing this.

Another situation is third-degree price discrimination. That is the situation in which you divide the consumers into submarkets, and different groups of people pay different prices. Of course, that's not feasible if people can walk from one group to another and get a better price. Discrimination is not going to work because they will arbitrage it away. If you're dealing with students and senior citizens who, in some way, can prove their status and receive a discount, then you basically are doing third-degree price discrimination.

Second-degree price discrimination is a situation where you have some kind of package pricing where price paid per unit depends on the quantity purchased in some way. If you buy a package of a certain size, you pay a certain fee per unit. If you buy a package of another size, you pay a different price per unit. You'll see that when you purchase hot dogs or any kind of item for your family. You'll see that you might pay very different per unit prices, depending on the quantity that you buy.

I didn't mention here that there is the first-degree price discrimination, which is also called perfect price discrimination. Let's recall what is on Course 2: how exactly do you arrive at the price? Price is derived from the marginal utility of what you want

to buy, which is exactly equal to the marginal utility of the money that you spend on it. Ignore for a moment that we don't measure utility in dollars or in money. If we were to measure utility in money, this marginal unit that you're buying is worth as much as you're spending on it. When you have access to only a small quantity, the earlier unit is more valuable than the later unit; the demand curve is downward sloping. You might be valuing the first unit of something that you get more than the second unit, so it's possible to sell you the first unit at a higher price than the second unit. Any time you want to buy something, the seller can ask you how much are you willing to pay for it.

First-degree price discrimination or perfect price discrimination is the situation where the seller basically extracts from you your entire willingness to pay. They find a way to get all the money out of your own pocket that you're willing to spend on this item. Of course, that sounds very unpleasant, doesn't it? The discussion of what kind of pricing is socially desirable on Course 2 now centers around a question of what is the total welfare of the society. Welfare doesn't refer here to any kind of social programs. It refers to the total well-being of the producers and the consumers. Actually, perfect price discrimination is very good, even though only producers benefit. The point of perfect price discrimination is that every unit that can be sold is sold and is produced. The biggest problem with monopoly power is that the monopolists can restrict production; therefore, all of the resources that can be made available to the society may not be made available due to monopoly power. Perfect price discrimination is not as bad as it might sound from that perspective.

Let us go back to buffet pricing now. Buffet pricing can be viewed as a two-part tariff in which the per-unit charge is zero, i.e., a two-part tariff. Interestingly enough, one of the examples that is typically discussed in two-part tariff pricing is Disney parks. Initially, Disney charged an entry fee and then they charged you for every ride. Then, they changed to charging only an entry fee. They are now going back to charging you an entry fee and then charging you per ride, except they separate you into two groups: those that are willing, and those that are unwilling, to pay per ride. They have separate lines for those who pay buffet and those who pay the two-part tariff. Apparently, they figured out that this would be the best pricing method.

In our buffet pricing paper, we were able to figure out why it would make sense to switch from a two-part tariff to buffet, as in Disney's situation. We concluded that when families started going to Disney, there were usually two kids and two adults. The two kids wanted to go on a lot of rides, and the two adults would go on the rides they had to, but adults are not really going to be the heaviest users. If you have a mix like that, it actually makes sense to switch to a buffet.

One interesting thing that we discovered when we looked at the subway systems is that, as I pointed out to you, New York and Moscow are buffet priced and London and Tokyo are priced linearly. Interestingly enough, New York and London are almost exactly the same size with regard to the number of customers. However, New York is profitable and London is not. London uses linear pricing. You would be

inclined to think that you can charge people for how much they use. In New York, there's really no limit once you enter, so there are limits on consumption in London and somehow that should work better, but it doesn't. On the other hand, Tokyo uses linear pricing, and it is financially sound. However, Tokyo is basically fully automated. You have to be more or less obedient and buy yourself your own ticket that specifies where you go. You do this by using these machines that are on the walls. You punch in where you're going and you get your own ticket; you do all the work. In London, there is a person that sells you that ticket. That actually is important from the perspective of what we claim in this paper.

The question here is, is this just some kind of cute advertising or is this regular, profitable business? Can you have a profitable buffet? Can you give unlimited access to consumption and make money on this? The basic idea of the paper is really related to Disney's idea. In the simplest context, if you have only one type of consumer, it means that they all have basically the same utility function, and the same demand. You're observing them as basically one unit, while different types of units indicate that you could possibly separate them into two sub markets.

Buffet can be practiced in similar circumstances as a two-part tariff typically. The key question is, how much does it cost you to process every single transaction when you have to make people pay per unit? Does it really make sense to spend all the money on processing every per unit charge, or can you have savings and transaction costs? The question comes up about your marginal costs on this additional unit of consumption. You make people pay to get in and then you either make them pay for each unit consumed or you don't make them pay. If you make them pay, you're going to have to somehow process that transaction. It's going to cost you something to figure out how much they should pay for this additional unit and then to do the transaction. In Disney's case, that means that you would have to have people at every ride collecting fees or checking that people paid their fees. That can be expensive as compared to the cost of producing the additional unit. If the additional ride for them is easy and cheap to produce, but difficult to monitor and evaluate in terms of how much they should pay for the extra ride, then buffet pricing is the way to go. Cheap to produce, but expensive to transact for each additional unit, is the key. It's not terribly complicated.

We may need to add some considerations, such as: what is the exact relationship of the two costs depending on the demand? That's what shows up later in the paper, but I want to stress that the main point is extremely simple. You look at the question of whether it makes sense for you to process this whole transaction of figuring out or making sure that you observe how much people consume. You observe this and you charge them, and it's going to cost you something. If it costs you significantly more than producing that extra unit, then you might as well go with the buffet. In Disney's case, what's the marginal cost of producing an extra ride for somebody? It's virtually zero. What's the marginal cost of counting people? You're going to have to put somebody at every single ride and count people in some way and make sure that they pay and make sure that everything is organized. You end up employing one or two more people per ride, and that's expensive. As soon as that gets expensive, you have your economic justification

for buffet.

The picture gets more complicated when consumers are not homogenous. When consumers are not homogenous, that means that you have various groups. You have for example, kids and adults in Disney World. Typically the distinction is that one group wants to consume a lot and the other group wants to consume very little. The one that wants to consume very little is not willing to pay as much as the one that wants to consume a lot. What basically happens is in that situation, if you want to serve all of them, you're going to unfortunately have to cater to those who are not willing to pay a high price. The ones that want to consume a lot will end up being free riders if you want to include everybody. You will have to cater to parents at Disney, if you want to include both parents and children.

Let's look at the first simple case for which you have homogenous consumers. The key point is obvious, but really very important, namely that buffet is only feasible if people can be eventually full. We are saying that the demand is satiable; at some point the consumers can't consume any more. One way or another there has to be a point where marginal utility of additional consumption becomes zero. There has to be a limit to the consumption.

In terms of the demand function, that means that the demand function will have a  $q$  intercept. There has to be a quantity at which, even if you lower the price to zero, people just won't consume anymore. There are a lot of implications of this. First, you can't put an unlimited number of items on the buffet, because then you eliminate this whole idea. Even if you have a buffet that consists of many things, the number of things has to be limited. From the point of your health care pricing, if you want to set up a system where people pay one fee and get unlimited consumption, that one fee has to be for prescribed items. It can't be for all health care. What we're saying is that, in some way, you're going to have to exclude a lot of things that will show up later, and you might have to renegotiate the buffet later. You can't possibly say that we'll cover anything you want. It won't happen that the quantity consumed will be limited.

Health care is especially troubling with this because of new technologies showing up at such an alarming or good rate, depending on your perspective. If you had a restaurant where the consumers could come and say, "I see you have lobster, but I would like you to give me shrimp, beef, chicken and pheasant for a fixed price," you would not be able to run the restaurant for much longer. There has to be some clearly defined limit on consumption because the whole idea of pricing, as we present it here, depends on the demand ending at some point. That means that you must know that there is that limit, otherwise it is just not feasible.

Let's take a quick look at the standard monopoly pricing picture that you see in microeconomic textbooks (see Figure 1). What happens in monopoly pricing is that, if you're a monopolist, you try to maximize the profit. That means you produce only up to this quantity in Figure 1. That's the standard welfare argument. The problem is that this profit is the measure of well being and the welfare of the producer. That area above the price, but under the demand curve represents the

amount saved versus what people would have to pay if they had to handle about every single item. That's called consumer surplus, and it is a benefit to the consumers because they get the market price instead of the maximum price that they're willing to pay. The problem with monopoly pricing and monopoly power is that only this much is produced even though you can profitably produce up to the point where the price exceeds marginal costs. If you sell these items along this part of the demand curve, you will receive the price that exceeds your marginal cost, meaning you're still profitable and your consumers are still willing to buy it. Both the consumers will benefit if those items are sold, and the producers will benefit if those items are sold. The only reason why this is not happening is because this monopoly power exists.

The standard argument against monopoly is that the society is better off if this were not the case. How do you remedy this? One way to remedy this is to have perfect competition which drives the price all the way to the level of marginal cost, and the quantity that is produced is the maximum quantity that can be produced above or at marginal cost. Let's look at a chart depicting the two-part tariff (Figure 2).

The other possible solution of course, is the perfect price discrimination, when you charge everybody as much as they are willing to pay. Then the entire area between marginal cost and the demand function is transferred to the profit of the producer, and welfare of the society, meaning both producers and consumers, is maximized.

In the buffet pricing (Figure 3), the area under the demand curve is called the customers' total willingness to pay. In buffet pricing, we actually end up making them pay some entry fee and then don't charge them anything thereafter. As a result, the quantity that is consumed is that  $q$  intercept point. Of course, some of it is produced at a cost that exceeds the price. In fact, per unit price is effectively zero. The question that you might like to ask is what should they pay for the buffet. Actually, this is equivalent to the question of what is the best payment of the entry fee for a two-part tariff? This has been asked in economic literature, and the answer is entry fee plus price per unit. Of course, there are limits on consumption in this case. As I was trying to say, buffet pricing is effectively a special case of a two-part tariff. In general, it should be more profitable. The entry fee that you should charge should be the entire consumer surplus that exists. The optimal design of a two-part tariff ends up being exactly the same thing as the struggle that you have with your car dealer. How much are you willing to pay? The optimal design is to make this entire willingness to pay above the marginal cost, so the entire area under the demand curve, but above the marginal cost, is this entry fee. Now, I'm assuming here the consumers are uniform, so you're dealing with the same kind of people. They have the same demand function, so you can have one entry fee. If it's a variety of consumers, it gets a bit complicated. Let's make this simple.

The entry fee actually should be this entire consumer surplus. You shouldn't make any money on the charge that you make per unit. So per unit consumption should be priced at marginal costs, but you should really take them to the cleaners on the entry fee. That's sort of what Disney does. That's actually the optimal design if the



consumers are uniform. The entry fee is where you make all the profit and it doesn't matter what the per unit charge is. It's not that relevant.

As a result, the best comparison point for buffet pricing is exactly this. The two-part tariff, which is optimal, is the pricing design that lets you collect the entire willingness to pay of the consumers in your revenues. It's just as good as perfect price discrimination, meaning you can't have bigger profits. All the money that you can get from consumers' pockets comes to you. It's really the best way to go. Charge them the entry fee, and then let them ride for free at almost marginal cost. That's the optimal two-part tariff. If you imagine this is the case, you can almost look at this picture and figure out that if introducing a buffet lowers your marginal cost, then it's just a question of how much you save in costs versus how much extra revenue you get by introducing the buffet pricing. Here is the official answer from our paper. Say you split the marginal cost into the portion that is due to the transaction and to production. The official theorem that we had is that buffet pricing has lower profitability than the two-part tariff if, and only if, the total marginal cost under the two-part tariff is greater than the difference between the marginal cost and buffet pricing and transaction cost per unit saved by buffet pricing.

When you contract the two-part tariff, buffet makes sense if it saves you a lot in transaction costs in relation to the production costs. If the production cost is very small, but the transaction cost is significant, that means you should have a buffet. Take a look at those subways. Every time you want to buy a ticket, you have to figure out how far you go. You have to go to a clerk that sells you the ticket. That person has to calculate the distance, and you have to spend time in line. There are several people that are working at several windows at every train station. This is a pretty significant transaction cost figuring out every such step. If you are an immediate consumer, you can go to a machine on the wall. You punch in some buttons, and you get the ticket yourself because you can calculate everything yourself. Then for the producer, there's no transaction costs whatsoever. What I just described to you was the London subway versus the Tokyo subway. That per unit charge in the London subway is not profitable. In the Tokyo subway, the per unit charge ends up being profitable. In the U.S., we can't count on our consumers being like the Japanese consumers. New York is different than Tokyo, and we know that. Therefore, American consumers are not going to do it this way.

What if you have two groups of consumers? Only the consumers whose total marginal utility exceeds the entry fee will enter. If you have consumers that have high demand and low demand, you must either input only high-demand consumers. If Disney allows only kids in, that is not going to work. You must include both, but you cater to the low demand as a result. Parents become very important in Disney marketing.

The issue of inclusion of one or both groups is settled by the relationship of the ratio of size of the two groups to the production costs. This is actually important if you want some kind of a buffet pricing for health care. Then you immediately have the very natural question that you will have some people who are high-level consumers and some people who are low-level consumers. If you want anything

like that to make economic sense, then you will be forced to cater to those that don't want to consume much and don't want to pay much. You just have to ask yourself if you can possibly run this whole thing. Can you run a health care buffet by collecting fees from young, healthy people and serving those that use the system a lot? If you can, then you have a functioning buffet; but if you can't, then it can't possibly be profitable. If you're willing to run an unprofitable business, that's a different story.

When you have those two groups, then profits under buffet and two-part tariff pricing are both monotonic functions of the ratio of low-demand consumers to the total. Basically, what happens is if you have a bad ratio, you should go with a two-part tariff, and if you have a good ratio, then you should go with a buffet. Of course, there is this natural relationship between transaction costs versus production costs. Again, I should stress this is extremely important. Buffets only make sense for items that have very small marginal production costs and sizeable marginal transaction costs.

In Disneyland, the transaction cost of selling a ride exceeds a marginal production cost. A marginal production cost is basically almost zero. Once you put those rides there, they're available all the time. It's a very nice situation from the point of view of economics, but do you really have that in other situations? In health care situations, can you have a situation where there's almost no cost in producing some form of extra care for additional consumers? That's very rare, but that's really the situation where you can practice buffet pricing. That's what you should look for. A relatively large proportion of low-demand consumers (that is adults for Disneyland, or healthy, young people for health care), makes buffet pricing more profitable than two-part tariff. If you have too many kids, they might have to charge per ride. I guess I'm trying to make a case that health insurance is just like Disneyland.

As technology changes, you have two processes that are happening at the same time. If the firm's fixed investment increases productivity and production, buffet pricing becomes more likely; and if fixed-investment increases productivity and transaction costs, the firm is likely to switch to a two-part tariff if they have these choices. This is actually very important because we have witnessed a very interesting process in the United States. I would say that we have a lot of fixed investment in improvements in productivity and in production that happened until we came up with all this information technology and until we switched heavily to a service economy. When this happened, a lot of fixed investment was going into savings and transaction costs. As a result, we had an economy that first was moving much more towards various forms of buffet pricing because we had these great technologies for producing more. We are now coming up with the technologies of controlling the transaction costs much better, and as we do, we should more often charge the consumers per unit.

The ideal that people had in mind when they talked about social insurance for health care and HMOs started with the premise of buffet pricing. We would give people unlimited consumption. Yet, there has been very little discussion of whether this is

economically feasible. Let me remind you that provision of public goods is properly done with economic calculation.

Transaction costs are typically quite significant. One of the things people complain about in health care is that transaction costs are quite significant, but we have seen this change as the service part of the economy became much more significant. We have seen improvements in productivity and fixed investments, information processing, data processing, and transaction processing in the U.S. more so than was the case 20 years ago. Automation of car production was probably much more important 20 years ago. It's almost assumed that we know how to make cars efficiently. Over last five years, almost all stores switched from the process of somebody punching the cost of the item to just scanning every single item. The transaction became much simpler. In addition to scanning the price, that immediately gives them the inventory that is processed. This actually is a change that affects pricing if a variety of pricing methods are available to you.

Technology will affect how you price the consumers, if you have the choice of how you can price things. Actually that was Dave Nelson's argument. He had much more to say about this, like, buffet pricing is dead in health care because we have much newer technologies that will allow us to process every single claim in such a way that we will know exactly what is happening. As a result, we can decide what the pricing should be almost per unit in every specific case, but I don't know. As I said, I'm not a health actuary.

I wanted to bring these economic principles to you and ask something. We have this public policy vision that we're going to create an ideal world where people pay one fee, or the government pays the fee for them from the taxes, and these people can get all they want. There is an economic question underlying as to whether this is feasible at all. The answer is yes, in some circumstances it is. What are the circumstances? If the consumers are uniform, transactions have to be expensive relative to production. If the consumers are not uniform, you have to cater to those consumers who are willing to pay the least. If you can run the whole thing and cater to the ones who are willing to pay the least, then you can do this. Otherwise, you have a problem.

I think we should be aware of these economic principles if we want to do this kind of pricing, especially if we introduce any form of social insurance that includes health care. Of course, the buffet itself has to be limited. The people have to be limited as to how much they can consume. It's very hard to imagine that the buffet will be limited, especially with political processes involved. We are switching to this situation when transaction costs are actually going down. That's where the fixed investment is going, and there is this question of what is the ratio of low-demand consumers to high-demand consumers. Actually the society is getting older and that's the same as having only kids at Disneyland, which means they should charge them per ride.

FROM THE FLOOR: Are you saying that in buffet pricing of health care, people would pay one fee up front and then, when they go see a doctor, they would not

have a co-pay of any kind?

DR. OSTASZEWSKI: Yes. In buffet pricing, they would pay \$300 a month and they can see their doctor as much as they want any time they want. That would be the idea.

FROM THE FLOOR: We do something similar right now in health care through the use of a co-pay.

DR. OSTASZEWSKI: Yes, there is a co-pay. Remember, the ideal two-part tariff is this extra thing they pay when they use the quantity. It should be very small. You should charge almost everything up front and then charge the marginal cost per visit. We kind of do that, so the typical design of health care pricing is very much like a two-part tariff.

FROM THE FLOOR: Plus there are several payers that are involved. If I'm the insured, often what I'm paying is linear. My employer, on the other hand, might have a non-linear scale, or even a buffet.

DR. OSTASZEWSKI: Yes. Economists would say you're really paying this, you just think you're not.

FROM THE FLOOR: From a motivational standpoint, I am figuring out what my marginal cost is and what's going to drive my expenses. If I am the employee, I do not see what the employer pays.

DR. OSTASZEWSKI: That's debatable. That always shows up in the debate about Social Security and Medicare, whether the people feel that the employer-paid taxes are paid by them or by the employer. I personally have an unusual situation. I work for an employer that does not participate in Social Security and the entire amount of the taxes I pay (the same amount that would have gone to Social Security) goes into my individual investment account. The result is that all the money that would have gone to Social Security is something that is my cost, because I have an alternative. Bob Myers would tell you that what I say is totally bunk. He says that people don't feel at all that the money paid by the employer is their cost.

FROM THE FLOOR: You do see on your paycheck how much is paid to Social Security.

DR. OSTASZEWSKI: You only see half of it.

FROM THE FLOOR: But you know it's proportional. You can identify the entire amount from it.

DR. OSTASZEWSKI: Yes.

FROM THE FLOOR: It is different for health insurance. I don't even know how much my employer pays for my health insurance. They don't publish how much

they're actually paying. We don't know how much it costs, and we don't see it on a monthly or weekly basis.

DR. OSTASZEWSKI: The funny thing is, there's almost no economic literature on this situation. Just as in physics, it is a three-body problem. Although this is probably a very important problem, I don't know of a three-body problem in economics having a solution.

FROM THE FLOOR: Would you say that England's national health system is pretty close to buffet pricing of health care?

DR. OSTASZEWSKI: It is, and they're having the standard struggles with it.

FROM THE FLOOR: It has not been that successful; they have shortages.

DR. OSTASZEWSKI: That's right. It all depends on what you define as a success. I had an aunt that waited for surgery in Australia in a similar system and she died before having the surgery. You can list these kinds of things but, then again, people will tell you everybody is in some way covered, so they get some care always. That's a standard debate. On the other hand, there are problems that show up in social insurance, typically when we want to have a limit on what people can consume. Without such a limit, buffet is not feasible, and yet the limit is constantly pushed because new technologies for what actually is health care constantly emerge. Whenever there is no upper limit on the consumption, buffet is not feasible. You can try to institute it, but it's just not economically feasible.

FROM THE FLOOR: It seems that the model that you are proposing worked for Kaiser, and maybe it still works today, but we've gotten away from it in many ways. I work for Humana and we've gotten away from this type of pricing, as the utilization of the transaction costs and claim processing is manageable. However, the actual cost of care is significant, and our ability to sell a product becomes limited. Today, when we're dealing with the providers, the multiple variables that affect the cost of care are very complicated.

DR. OSTASZEWSKI: Yes. I think I hear you saying that the marginal production cost was significant. One of the prerequisites for buffet is marginal production costs have to be extremely low compared to marginal transaction costs. As soon as marginal production costs become significant, you immediately start having struggles.

FROM THE FLOOR: You have talked about consumers and the individuals who make the decisions to buy or not buy, or assess quantity that they can buy. But when we're talking about health services, things are not like that. There are routine costs, but if you go back to the other catastrophic coverages, you're dealing with something you don't know about, and you can't control the consumption of it.

DR. OSTASZEWSKI: Probably, yes. Again this design is for things that are probably well known and reasonably predictable. The theoretical design of the buffet

in economics seems to point towards things that are known or predictable, where you can limit the consumption. The catastrophic portion is not very good for a buffet. In other words, you can't have all the heart surgery you care to have for this month. You are correct that that's not going to work.

FROM THE FLOOR: That's the exact problem we are working with. It's commonly believed that 20% of the people consume 80% of the health care dollars. Most of your dollars are spent at the very high end where you have this unlimited choice. I think the buffet model works better for low end, but it can't work for high end.

DR. OSTASZEWSKI: Unfortunately, public policy seems to be pushing for buffet where it's not feasible. We should face the fact that there are circumstances where buffet is feasible, and when we are faced with circumstances where it's not, we should clearly say that it's not.

FROM THE FLOOR: I know the assumptions of the model are that we have rational consumers. I don't think we have rational consumers. But public policy and today's products are designed to serve rational consumers. In response to this we now tend towards a \$30 or \$40 co-pay because we do not have rational consumers, and the buffet idea is not working.

DR. OSTASZEWSKI: All I can say to this is that I actually am trying to point out that this design works only in specific circumstances. As Disney is going away from it, they must have a reason. My co-authors and I feel it is because too many kids are coming to Disneyland.

FROM THE FLOOR: But when you talk about Disneyland and health insurance, there is another difference. You choose to go to Disneyland, social insurance is mandatory.

DR. OSTASZEWSKI: Yes.

FROM THE FLOOR: When it's not voluntary, the demand is different.

DR. OSTASZEWSKI: Yes, but then this design is not going to be profitable. The whole thing will be unprofitable by design, and I think that's a bit dangerous. You basically create a situation for lobbying possibilities. You create the consumers who have greater demands. Once you institute buffet pricing in the government, then, of course, the natural desire would be to increase the buffet. In terms of health care, there's almost no limit on the buffet. The more items you include, the less reasonable the whole scheme becomes.

FROM THE FLOOR: Could it be that just a part of health care services would be a buffet?

DR. OSTASZEWSKI: Yes, I think that would be more reasonable. If somebody really wants to have universal coverage for everybody with no limits on consumption, then this economic design would suggest that you can only do this

with certain things where we more or less know what we can expect. I don't know if this kind of separation is easy to do. I don't know if it's politically feasible to tell people, "Heart surgery will not be covered; you will have to buy your own coverage for the surgery. We will cover only certain items for everybody."

FROM THE FLOOR: That's exactly what happens when a government creates shortages in a social insurance program.

DR. OSTASZEWSKI: To a degree, that is true.

FROM THE FLOOR: In Canada, there was a task force that wanted to decide exactly at what age your health care would be withheld. At least in a private care situation, I can hope for technology improvement and cost savings. In a state system, care will be withheld when they run out of money.

DR. OSTASZEWSKI: In a sense, buffet is limited, even though, officially, it's not limited. That would simply point towards the system acting like regular profitable monopolies. It's exactly what a rational provider of public goods should do, except that this provider is put in an impossible situation. You're supposed to do a buffet, but when you can't do a buffet, you limit the access in order to make it a buffet.

FROM THE FLOOR: I would argue that heart surgery could be a buffet. The main cost is due to setting up the facility and personnel. After you have those covered, the marginal cost of another surgery is very low. I do not think you can go to a person and say, "Sorry, I do not think we can offer you this care." There are social, moral and ethical implications.

DR. OSTASZEWSKI: I should stress that I probably shouldn't be the one who will design the buffet for health care, because I'm not even playing health actuary for my students. I'm trying to play an economist for my students. The question is, if we do have a buffet, what should a part of it be? That is the question that probably should be answered by people who know the technology. The suggestion here is that the items included should be the ones for which the marginal production costs are low. If you make a large fixed investment, in which everything is set up, and then the marginal production cost is small, and the marginal transaction cost is high, then that's an item that works. Now, if it's the other way around and the marginal production cost is high, then we're probably in trouble.

FROM THE FLOOR: It seems like you need to control the actual delivery of the care. I see that the marginal cost of producing another procedure must be low. Look at eye care and corrective eye surgery. The experts are doing one of these surgeries every two minutes. We can bring the cost down to \$50 a transaction, but the charge to the consumer is \$1,000. We need to control that health care delivery system to deal with that, but we do not have that control over the health care delivery system as we understand it, and such control is now with the providers.

DR. OSTASZEWSKI: That's interesting. If there is such a big difference between the marginal cost and the actual price, then it indicates some degree of monopoly

power. I don't know where it would come from, but that's a standard economic argument, and the solution lies in competition.

FROM THE FLOOR: We do not always have one health care delivery system. For example, in England, there is a private network of health care delivery outside of the social system.

DR. OSTASZEWSKI: It is partly a reaction to the shortcomings of the social system.

FROM THE FLOOR: Similarly, the subway system is a buffet system, but there are other modes of transportation.

DR. OSTASZEWSKI: Yes.

FROM THE FLOOR: So it sounds like you can have two components that complement each other. One can be a buffet for a part of the demand, and there can be a regular menu for some other part of the demand. You could separate health care demand into the routine health care part and the catastrophic care.

DR. OSTASZEWSKI: It's certainly the case in restaurants as well. Not every restaurant has a buffet. That would be impossible. Gourmet restaurants can't be buffets. What seems to work is selecting the things that fit into a buffet model.

FROM THE FLOOR: This is based on the premise that people are rational, that we know what is good for everybody, and that we can put that in the buffet. But people might not like the restrictions. Also, in a all-you-can-eat restaurant buffet, when it is all you can eat, people tend to eat too much.

DR. OSTASZEWSKI: Right. That's what I said.

FROM THE FLOOR: It really matters in health care. Maybe some day, in a perfect world, we won't need financial incentives for people to take care of themselves; but today, a lot of people need some form of restriction because of a moral hazard.

DR. OSTASZEWSKI: That's a bigger question. In China, 1,000 years ago, there were contracts where the doctors were paid only if the patient was healthy and as soon as the patient became sick, payments stopped. So maybe these ideas could be considered. Maybe life insurance and health insurance could be combined in some way. That's a bigger question. In health care, there is definitely a question as to what degree we should have incentives for the customers to be more rational. To a degree, in the existing system, we have disincentives that showed up.

FROM THE FLOOR: On the other hand, in terms of the greater whole, it is arguable whether it makes sense to have utilization disincentives. Perhaps in a healthy population. In reality, we might want to encourage people to utilize health care.



DR. OSTASZEWSKI: Yes. The argument of public policy is that there are positive externalities from having a healthy population, and that's why government involvement is justified. If the government can deliver positive externalities, it is justified for the government to be involved. We have an ongoing public health argument that says you can deliver positive externality of public health. However, there is also the moral hazard argument that once you insure people, you actually deliver negative externalities by not having them take care of themselves. I don't really know which one is stronger.

FROM THE FLOOR: One of the things is prescription drugs. We have a great increase in utilization and prices. Having those prescription drugs available may be valuable to the society.

DR. OSTASZEWSKI: Economics teachers tell you to look at the other side. We hear a lot of complaints about high prices of electricity, but we have high prices because we don't have enough productive capacity. What's the best way to increase the capacity? Slap the consumers with higher prices, because that attracts capital investment.

FROM THE FLOOR: I'm from California, so I know.

DR. OSTASZEWSKI: Believe me, the fastest way to attract capital to an industry is for the prices in that industry to rise rapidly. Later on you might even have over-capacity, as once happened in Texas during the oil boom. I remember one investment analyst saying that he knew something was going wrong in Texas when he noticed that there were apartment complexes being built for the workers who were building apartment complexes. Something was excessive here. An open economy attracts a dramatic amount of flow of capital. Unless there is a restricted entry, then we have a problem. When something happens, we need to ask ourselves: is there a way for the economy to heal itself? Why are people using more prescription drugs? This may be the way for them to deal with other health care expenditures. The way to control other expenditures may be to use more prescription drugs. That can be entirely a part of the solution.

FROM THE FLOOR: This is an entirely economic issue. In health care, people have certain expectations. If you raise prices, you will end up effectively denying care and you will get sued.

DR. OSTASZEWSKI: This is America, so it happens anyway. Don't you think that the people have the right to Disneyland?

FROM THE FLOOR: But in health care, things are different than in other areas.

DR. OSTASZEWSKI: Yes. I understand. The point is well taken.

FROM THE FLOOR: You can have price control in other areas, and people can opt out; in health care, it is not so simple. If somebody isn't there to help them out, then they end up looking bad or getting into legal trouble.

FROM THE FLOOR: Even if people do not have health insurance, there will probably be some programs that will cover them.

DR. OSTASZEWSKI: I understand. The point is very well taken. I guess I'm trying to argue that public policy considerations tend to push towards unlimited healthcare consumption in certain areas. We should be aware of the fact that unlimited consumption is actually feasible in certain circumstances. We also should be aware of what those circumstances are. That was basically the point I was trying to make. If the government announces that they want unlimited consumption of something, then the government should make it very easy to make a lot of fixed investment in that industry in its production. Also, there has to be very low marginal production costs. That tends to make buffet pricing much easier. Production has to catch up with the consumption. If you want unlimited consumption, you will need unlimited production too. That just has to be.

Figure 1

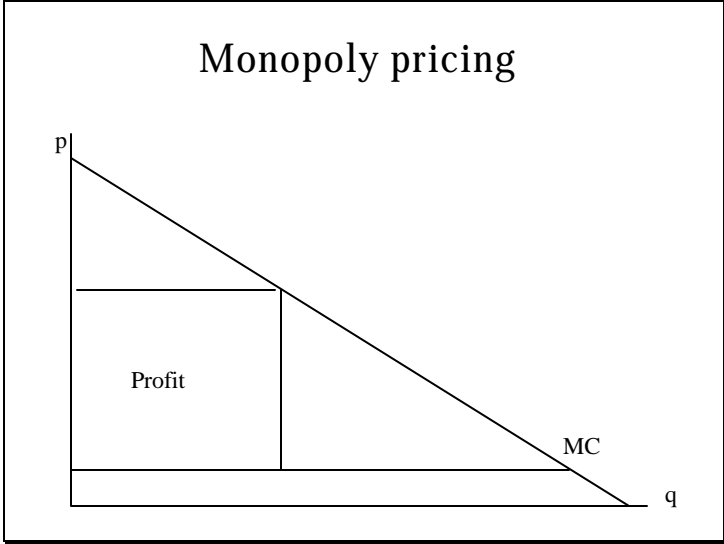


Figure 2

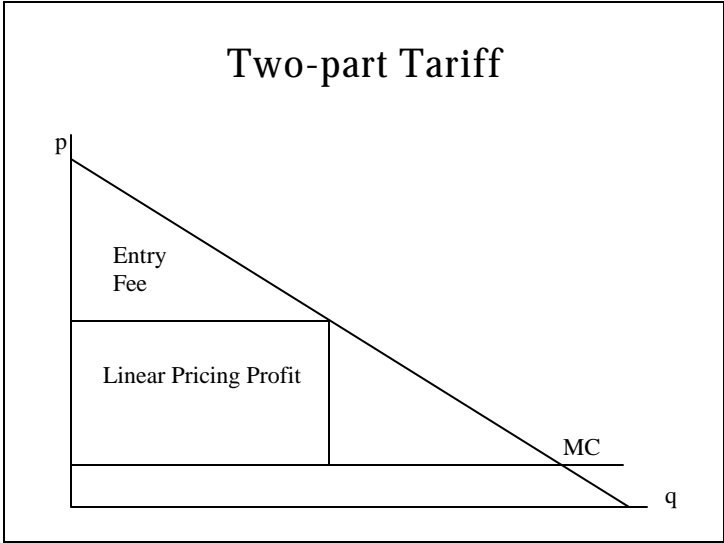


Figure 3

