Methodological Issues in the Social Cost of Gambling Studies

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The appropriate way to classify and measure the "social costs" of gambling is a very important, unresolved methodological issue that has been addressed by Collins and Lapsley (2000); Thompson, Gazel, and Rickman (1999); and Walker and Barnett (1999), among others. What should be included and excluded from social cost studies continues to be a controversial issue, as illustrated in the literature and recent conferences. This paper is an attempt to explain the "economics" conception of social costs in accessible language. By using a simple economic model and everyday examples, it shows that the economics methodology is better than the other methodologies currently available. There are four specific goals of the paper: (1) Discuss the importance of the social cost methodological debate and the state of research in the area; (2) Explain the Walker–Barnett definition of social cost in the context of a simple production possibilities frontier and indifference curve model; (3) Use simple illustrative examples to show why many of the alleged social costs should not be classified as such; and (4) Suggest a new method for analyzing the social costs and effects attributable to pathological gambling.

INTRODUCTION

Research on legalized gambling is multidisciplinary, including work by economists, political scientists, psychologists, regional planners, sociologists, and others. Among the debated methodological issues are the following: On the psychology/sociology side, there are various mechanisms for classifying a person as a pathological gambler, and assorted methodologies for estimating prevalence. On the economics side, the costs relative to benefits of gambling are the major issue. This area is plagued by methodological problems, despite recent comprehensive discussions of the subject.[1]

This paper focuses primarily on the issue of social costs. Researchers, politicians, and the general public are concerned with the extent to which gambling, particularly by pathological gamblers, has a harmful effect on society. The literature is lacking in two important areas. First, it lacks an appropriate standardized definition of social cost. Second, it lacks a methodology for measuring the value of these costs. As it stands in the literature, individual researchers choose what to include and exclude from their cost studies. The apparent criterion for inclusion is ease of measurement; most researchers estimate a dollar figure for some effects, but simply note that there are other effects that are not measurable. To be fair, a major limitation to research has been a lack of data. In *Pathological Gambling* (1999, p. 185), many of the problems in past social cost studies are addressed.

In most of the impact analyses of gambling and of pathological and problem gambling, the methods used are so inadequate as to invalidate the conclusions. Researchers in this area have struggled with the absence of systematic data that could inform their analysis and consequently have substituted assumptions for the missing data. Often, the costs and benefits were not properly identified so that things that should have been counted as costs or benefits were omitted and other things that should have been omitted were counted. Even when these limitations were recognized by the authors, they were rarely acknowledged.

The social costs of gambling research is still in its infancy, so it is not surprising that there are still some methodological issues yet to sort out.

Walker and Barnett (1999) attempt to standardize the definition of social costs in order to facilitate comparable studies in the future.

However, their discussion may be too brief in explaining exactly why other conceptions of social cost are flawed. This paper represents an extension to their work; it has four major purposes: (1) Discuss the importance of the social cost methodological debate and the state of research in the area; (2) Explain the Walker/Barnett definition of social cost in the context of a simple production possibilities frontier and indifference curve model; (3) Use simple illustrative examples to show why many of the alleged social costs should not be classified as such; and (4) Suggest a new method for analyzing the social costs and effects attributable to pathological gambling.

ECONOMIC RESEARCH ON THE
SOCIAL COSTS OF GAMBLING

Social cost studies have been used by a variety of governments in the consideration of gambling legalization. Economists have been rather quiet on the issues surrounding casino gambling. In contrast, sociologists, psychologists, political scientists, lawyers, and even environmental planners, landscape architects and regional planners, have published on economic aspects of casino gambling in a variety of outlets. Many of these non-economists have had significant influence on government policy with respect to legalized gambling (US House, 1995; NGISC, 1999). The problem is that these individuals often give "economic" arguments in favor or against legalized casino gambling, even though their formal training is in some other field. The result is that they often confuse the issues.[2]

Thompson (1996) provides the perfect example of the problem when he describes his "bathtub" macro-model of the effects of casinos on local economies.[3] He writes:

> A casino analyst does not need to know rocket science, or know how to demystify Stonehenge. The application of the formulas of casino economics [does] not require the wizardry of brain surgery. The application uses only elementary arithmetic: addition subtraction, multiplication, division, decimals, and percentages. (Thompson, 1996, p. 2)

Goodman's work (1994; 1995) is similarly too simplistic in its treatment of gambling economics. In his article "Why Does Johnny so

Rarely Learn any Economics?," Heyne attacks the common perception that market economies are "simple":

> It is a complicated system with billions of moving parts, in which everything depends upon everything else. That is the fundamental difficulty. The difficulty would be less if people weren't convinced that the system is basically quite simple . . . If it is so simple, you don't need any special knowledge to understand it. "I may not know much about economics," people often say, "but I do know. . . ." And then there follows some bit of incoherent but confident nonsense. The invincibility of such arrogant ignorance manifests itself in the contempt that these people have for "ivory-tower economists" who espouse academic irrelevancies like comparative advantage, marginal cost, and elasticity of demand. (Heyne)

Another source of the problem is the overlap between economics and politics. In the US everyone is entitled to his own opinion with regard to political issues. These opinions may be based upon numerous considerations, including the opinions of others, self-interest, empirical or other scientific evidence, a lack of understanding, and so on. Economic theory often has policy applications. Since any *political* position is conceptually defensible, many laymen believe their opinions on economic policy issues are as valid as anyone else's.

To point out the inherent danger in this, Heyne explains that very few people understand how to keep a bicycle balanced. Nonetheless, it is rather easy to learn how to ride one.[4] Furthermore:

> We can hold a totally erroneous theory about bicycle balancing without getting into any trouble, unless we try to design the bicycle in accordance with our faulty theory. That is when we will get into trouble. In the economy, we can enrich one another without knowing how we do it. And we can maintain completely fallacious views of how any economy works without creating any great difficulties for anyone. But if our practical success generates excessive confidence in our erroneous theory, and we try to use that theory to improve the operation of the system, we can do a great deal of damage. When we put faulty theories about bicycle riding into practice, we are instantly refuted. Few of us are either stubborn or stupid enough to persist in a faulty theory that is skinning our elbows or bruising our bottoms. We admit our ignorance. There is nothing similar, however, to correct faulty theories that is applied to the reconstruction of economic systems. The links between causes and effects are too numerous and too difficult to trace. There are consequently people who can honestly maintain that the deterioration of a city's housing stock after the imposition of rent controls had nothing to do with rent controls, but was the result of landlord greed,

or demographic changes, or—worst of all—failure to enforce the controls. (Heyne)

As another example, consider the question of whether prednisone should be used in the treatment of seasonal allergies. To understand how the steroid works obviously requires a certain amount of medical expertise, but an individual might nonetheless have some opinion based on his own experience using the steroid. If an economist were to answer the question about using prednisone, his response should be heavily discounted unless he has had the training required to understand how the steroid works. More to the point, for policy determination, perhaps the economist should not be asked the question in the first place. If an economic question arises with political implications, however, everyone seems to think he is qualified to answer it, whether or not he is a trained economist.

Problem gambling and the effects on society is an issue that should be addressed by researchers in a variety of disciplines. However, we should be cognizant of when we step outside our areas of expertise.

WALKER AND BARNETT'S DEFINITON OF SOCIAL COST: A REVIEW OF MICROECONOMICS

Much of the debate over social costs of pathological gambling hinges on the appropriate definition of social costs. This section addresses this issue by explaining the economic perspective in the context of a simple model.

In their *Journal of Gambling Studies* article, Walker and Barnett (1999) argue that, although several authors have attempted estimates of the social costs attributable to pathological gamblers, *none* has defined social cost. "Instead of starting with objective criteria for what constitutes a social cost, most authors have adopted an ad hoc approach—asserting that some activities constitute costs to society and then quantifying the impact of those activities" (p. 183). Walker and Barnett use the welfare economics paradigm to define social cost as a decrease in the aggregate real wealth of society. This definition can be illustrated using a model of production and consumption, which requires only a principles- or intermediate-level understanding of economics.[5]

Modeling Production

Consider an economy in which two goods are produced: autos and computers.[6] The production possibilities frontier (PPF; Figure 1) illustrates the production choices faced by a society. Using all available input resources efficiently, the PPF shows all of the possible autarky production points. The shape of the PPF—concave to the origin— implies an increasing opportunity cost of production as the quantity of production rises. The cost of producing computers, in terms of autos sacrificed, increases as society produces more computers. The reason for this is that input resources are not equally well suited for production in the different industries. The slope of the PPF represents the opportunity cost of production. The steeper the PPF, the higher the opportunity cost of computers, since more autos must be sacrificed to incrementally increase computer production. The flatter the PPF, the higher the opportunity cost of autos, in terms of computers.[7] The slope of the PPF is referred to as the "marginal rate of transformation" (MRT).

A technological advance, say in computer production, would cause the PPF to rotate out along the computer axis (Figure 2). Note

**Figure 1**
Production Possibilities Frontier
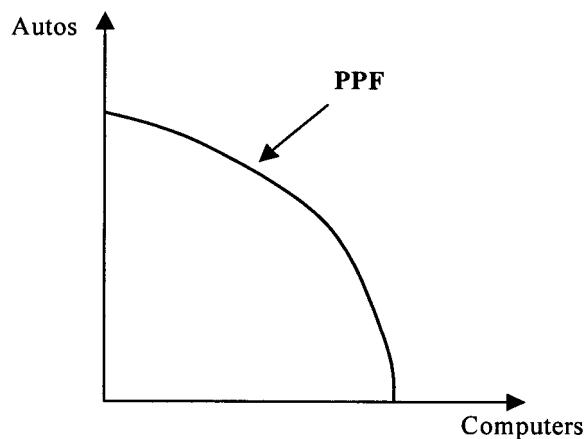
Figure 2
Technological Advance in the Computer Industry
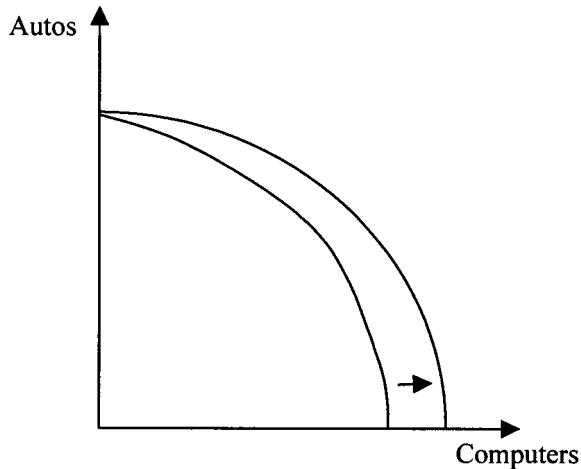
that an increase in computer technology may allow society to produce and consume more computers *and autos.*

Without knowing something about the preferences of the individuals in society (discussed below), we cannot say that one point on the frontier is better than any other. For example, in Figure 3, we cannot say that point *b* is better than *c* or vice-versa. We do know, however, that each point on the frontier is, by definition, efficient. From the consumers' perspective, we can compare the points on the frontier with many of the points off the frontier. For example, *d* would be preferred to *a*, *b* and *c*, since the former includes more of both goods than the other points. Point *d* is unattainable given the constraints of input resources and technology; it lies beyond the PPF. We can also say that *b* is preferred to *a*. However, we cannot necessarily say *c* is preferred to *a*, since, although *c* is efficient and includes more computers, it has fewer autos.

The ranking of various points can be summarized as in Figure 4. All points in quadrant *I* are preferred to point *e*, and point *e* is preferred to all points in quadrant *III*. We cannot rank the points in quadrants *II* and *IV* relative to point *e* without knowing something about preferences.

**Figure 3**
A Comparison of Production Points
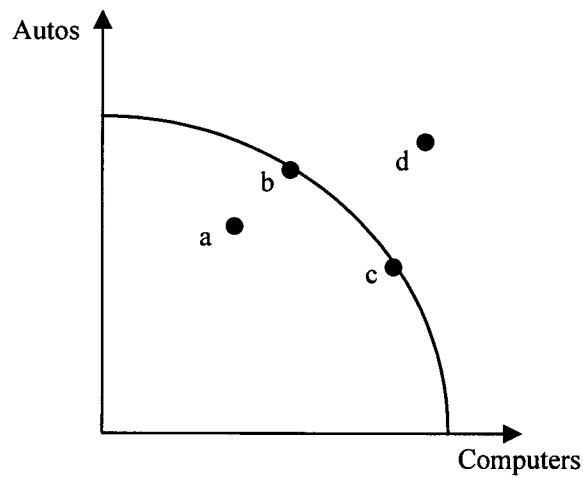
Figure 4
**Ranking Points in the PPF Model**
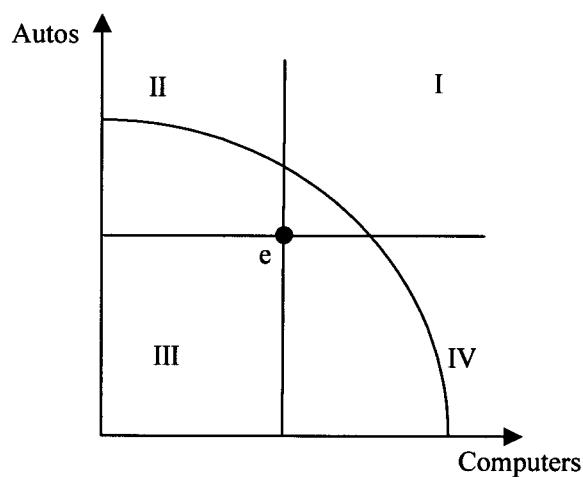
Modeling Consumption

An indifference curve (IC) for an individual (or society) is the collection of points that represent various combinations of two goods among which an individual (or society) is indifferent. An IC must have a negative slope, since in Figure 4, any point in quadrant *I* is preferred to *e* is preferred to any point in quadrant *III*. (More is always better.) Put differently, if society is initially producing and consuming at point *e*, then we would be made better off if given more computers. For us to be indifferent between this new situation and the original one at *e*, we must give up some autos.

The specific shape of the IC results from the "law of decreasing marginal utility," the idea that each additional unit of consumption tends to provide less and less additional benefit. In the two-goods case, with pizza and beer, the IC would appear as indicated in Figure 5. Four example points are shown. Since they all lie on the same IC, a consumer is indifferent among them. The law of decreasing marginal utility can be illustrated by considering how much beer a consumer

Figure 5
Indifference Curve for Beer and Pizza
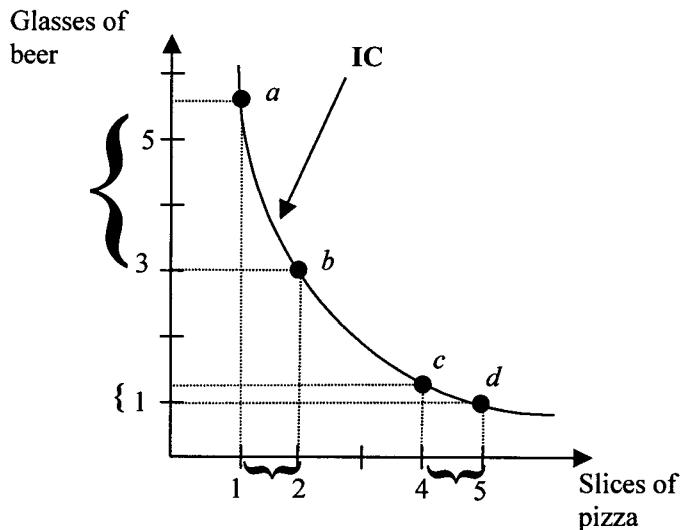
would be willing to give up for another slice of pizza. Consider two cases: movement from point *a* to *b*, and from point *c* to *d*; each represents a 1-unit increase in the amount of pizza. Recall that a person must remain as happy as before getting the additional slice of pizza, in order to remain on a given IC. When a person has little pizza and a lot of beer, the marginal utility of beer is low, and for pizza it is high. This suggests the willingness to give up a lot of beer for another slice of pizza. But as a person gets more pizza, say at point *c*, his willingness to sacrifice additional beer for another slice of pizza declines. The result is a convex-to-the-origin shape for an IC between two goods that the consumer likes.[8]

Since the gambling issue is social in nature, it will be useful to utilize a "community indifference curve," instead of an individual IC.[9]

Now that the shape of the IC has been explained, there are several important characteristics of it that allow us to analyze consumer choice, even at a societal level. As Ferguson (1966) explains, every point in commodity space lies on one (and only one) IC; there is an infinite number of ICs for any two goods. Furthermore, ICs cannot intersect. The proof of this is simple. In Figure 6, note that point *a* lies on both IC_1 and IC_2 (ignore, for a moment, that this violates the previous assumption). Then *a* must be indifferent to *c*, and *a* must be indifferent to *b*. This implies that *b* is indifferent to *c*. But *b* must be preferred to *c*, since *b* has more beer and no less pizza than *c*, and more is always better.

One final point is that ICs further up-and-to-the-right indicate higher utility or satisfaction. In Figure 7, every point on IC_2 is preferred to every point on IC_1, and every point on IC_3 is preferred to all points on all lower ICs.

Economic Efficiency[10]

Two types of economic efficiency can be illustrated with this model. Technological efficiency refers to production at some point on the PPF. This means that society is getting the most of its scarce resources; no waste occurs. Allocative efficiency requires that what is produced is what consumers want. Both of these conditions are satisfied when the society produces at the tangency between the highest possible IC and the PPF.

In Figure 8, society might produce and consume at point *a* or *b*;

Figure 6
**Proof that ICs Cannot Intersect**
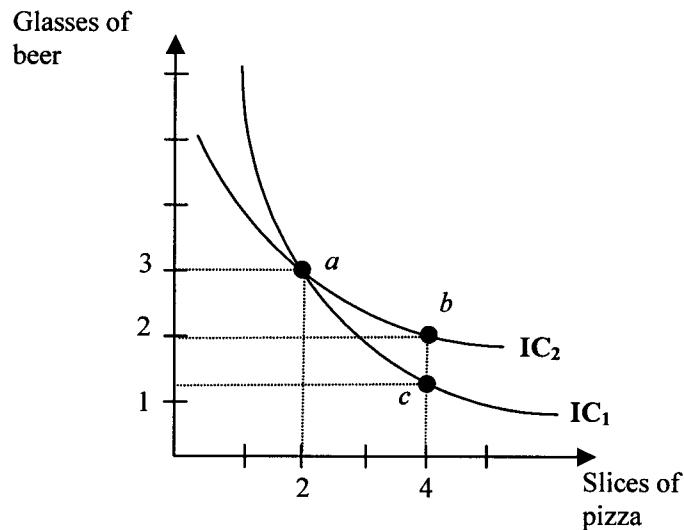

Figure 7
An Indifference Map
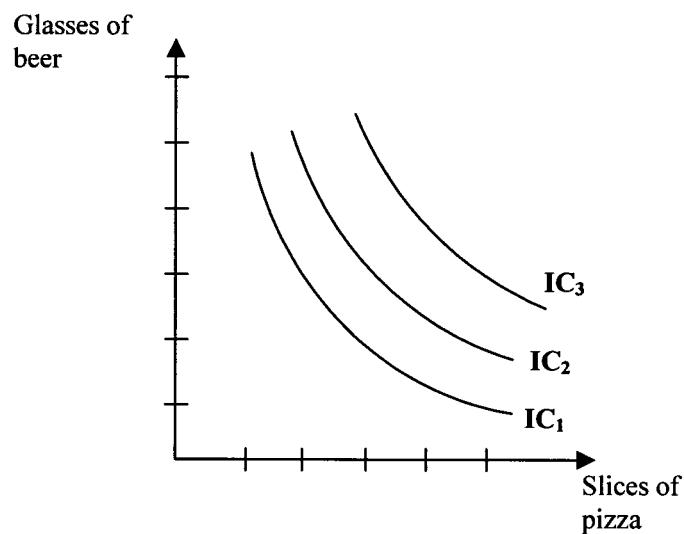
Figure 8
Technological and Allocative Efficiency
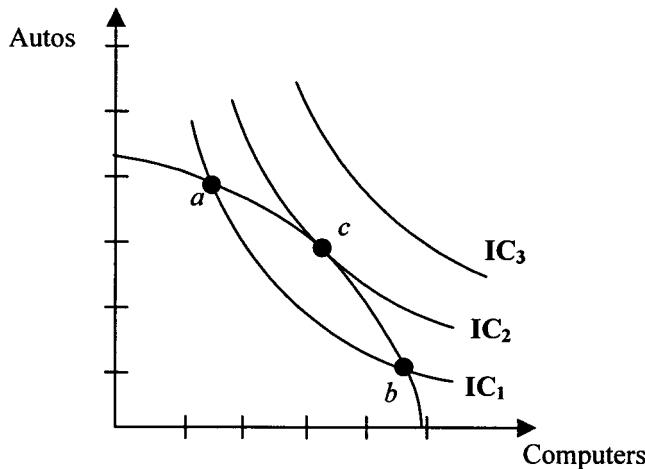
both are technologically efficient, since they are on the PPF, but not allocatively efficient—these points do not lie on the highest possible IC. Point c on IC_2 is both technologically and allocatively efficient. Of course, we would prefer to produce somewhere on IC_3, but society lacks the resources and/or technology to make that possible. Production and consumption at point c maximizes utility (allocative efficiency) at the lowest possible cost (technological efficiency).

The inefficiency of points a and b relative to point c can also be explained in slightly more technical terms. Note that the slope of the IC_1 is greater than the slope of the PPF at point a, implying $RCS_a >$ MRT_a at that point. Put differently, the willingness of consumers to give up autos for computers is greater than the production cost of doing so. The social benefits of producing and consuming fewer autos and more computers outweigh the cost. Hence, movement toward c benefits society. On the other hand, at point b, the PPF is steeper than the IC. Here the willingness of consumers to sacrifice computers to get more autos is higher than the cost of doing so. Overall welfare is improved by moving from b toward c. At point c, the PPF is tangent to IC_2. There is no higher IC still tangent to society's PPF, so that is the optimal production and consumption point. Note that at c, the

$MRT_c = RCS_c$; the willingness to substitute one good for another just equals the production cost of doing so—technological and allocative efficiency.

The major point, then, is that the tangency between the PPF and an IC is the optimal point of production and consumption. "Social costs" refer to inefficient situations, and most of the social costs of pathological gambling are caused by technological externalities.

Theft as an Illustration of Social Cost

Walker and Barnett use Tullock's (1967) example of theft as a way to introduce the economics definition of social cost. Keeping with this example, see Figure 9. Let us suppose that initially we are producing at point *a*, in a world absent of theft. When we introduce theft into society, aside from thieves using resources to commit their crimes, it creates an incentive for individuals to use resources in an effort to prevent involuntary wealth transfers (theft). In the model developed above, this would mean that real resources are diverted from the production of autos and computers into producing locks, alarm systems,

Figure 9
The Social Cost of Theft
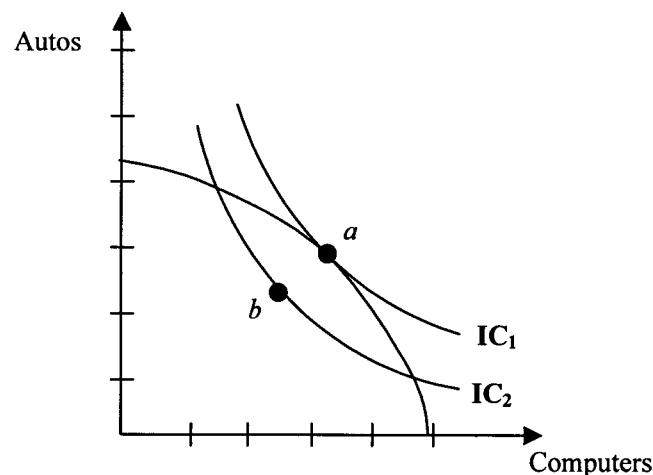
etc. This change can be represented by movement from *a* to some point under the PPF, like *b*.[11] The existence of theft means that we have fewer resources with which to produce other things society wants. This move from *a* to *b* represents the social cost of theft.[12] This causes both a technological and allocative inefficiency, since we move below the PPF and individuals would not want locks, alarms, etc., to be produced in the absence of theft. The social cost is the autos and computers that are now not produced because we use real resources to produce locks and other things used to prevent theft. Note that the value of the goods (or money) stolen is *not* the social cost of theft, as the theft is merely a transfer of wealth. Redistribution itself does not entail a social cost since the costs to one individual are offset by benefits to another.[13]

The Social Costs of Pathological Gambling

Walker and Barnett (1999) provide a fairly comprehensive overview of many of the social cost studies that have been attempted. Although some of the more recent government-sponsored studies explain their methodologies in greater detail than many of the independent academic researchers, these studies suffer from many of the same fundamental flaws.

Examples of the Social Cost of Pathological Gambling

In this section, the social costs of pathological gambling, according to the Walker/Barnett definition, are explained and illustrated using the PPF/IC model developed earlier. Civil court, criminal justice, and therapy costs are among the potential social costs of pathological gambling.[14] Now consider the model in Figure 10. When casinos are legalized and open in a community, movement from *a* to *b* might occur. Assuming consumers like casino gambling, then this represents an improvement in welfare, as indicated by the movement to a higher IC. However, when some individuals in society become pathological gamblers, their problems create a need for society's resources to be expended on civil court, criminal justice, and therapy costs. This diversion of resources from other modes of production can be represented by movement from point *b* to point *c*. Only the effects of pathological gambling that result in a decrease in societal wealth can be

Figure 10
Social Costs of Pathological Gambling

All other goods
(excluding incar-
ceration, court,
and therapy costs
due to pathological
gambling)

a

c

b

d

Casino gambling
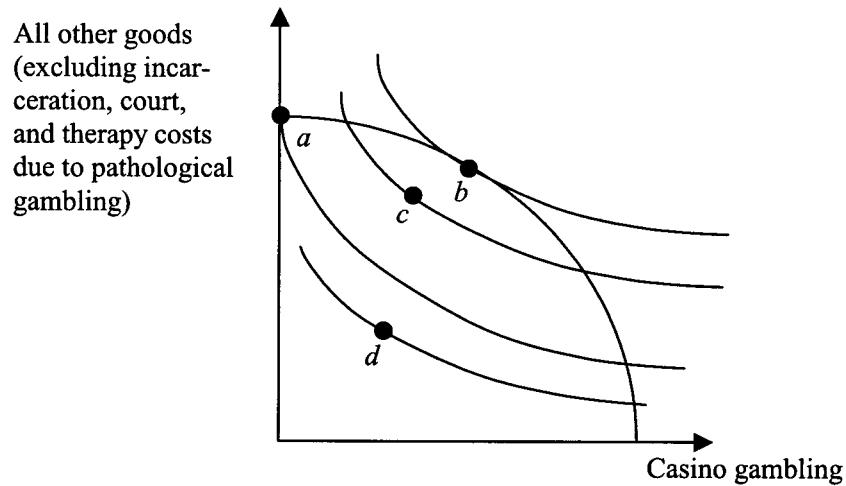
considered a social cost. It is interesting to note that the model sug-
gests that society might be better off at point *c*, with gambling and its
social costs, than at the original point *a*, with neither gambling nor its
social costs. Of course, if the social costs are so great as to move us to
point *d*, then we would be better off prohibiting gambling, assuming
the social costs would also disappear.

In summary, a social cost is a decrease in the wealth of society,
compared to *what it otherwise would have been.*[15] In the context of the
PPF/IC model, this is illustrated by movement to a lower IC. Though
the model is not conducive to precise empirical estimates, it does offer
a useful way to conceptualize social costs.

Example: Psychic Costs[16]

Walker and Barnett (1999) argue that psychic costs are legitimate
social costs because they can be considered negative technological ex-
ternalities, when relevant arguments are included in one's utility func-
tion. For example, an interdependent utility function might be

$$U_a = U\,(C, U_f, U_r, Z) \tag{1}$$

where C is consumption, U_f is the utility of friends, U_r is the utility of relatives, and Z represents all other arguments in the utility function. If $\partial U_a / \partial U_f$ and $\partial U_a / \partial U_r > 0$, then a psychic cost is imposed on person a when harm occurs to either a friend or relative. The result is lower utility for person a.

Psychic costs could be illustrated in the context of a PPF/IC model. However, it becomes rather abstract.[17] The goods on the axes must include "happiness" in addition to quantities of goods and services. A decrease in happiness, in effect, represents a social cost. One important question of debate is whether or not this type of psychic cost should be under consideration for policy intervention. After all, people are affected daily by countless psychic costs and benefits.

PRIVATE CONSEQUENCES OF PATHOLOGICAL GAMBLING THAT ARE NOT SOCIAL COSTS[18]

Generally, costs to individuals do not qualify as social costs unless they are coupled with negative technological externalities. An early draft of McCormick (1998) provides a useful example. He writes, "Suppose I break my leg riding a horse. Is there a social cost? No. The pain, suffering, and loss of income are mine. Jobs, income, taxes, crime, and divorce are not benefits or costs, they are markers and indicators." There are numerous potentially negative effects of pathological gambling that do not qualify as social costs in the economic paradigm.[19]

"Abused Dollars"

Politzer, Morrow and Leavey (1985) published one of the early studies that attempted to measure the social costs of pathological gambling in the US. They attempted to measure "abused dollars," which are defined as:

> [The] amount [of money] obtained legally and/or illegally by the pathological gambler which otherwise would have been used by the pathological gambler, his family, or his victims for other essential purposes. These abused dollars include earned income put at risk in gambling, borrowed and/or illegally obtained dollars spent on basic needs and/or provided to the family which otherwise would have been "covered" by that fraction of earned income which was used for gambling, and borrowed and/or illegally obtained dollars for the partial payment of gambling related debts. (p. 133)

On the surface, this concept might appear to be a reasonable way to measure the negative effects of gambling. However, it is far too vague and subject to serious interpretation problems. For example, measuring the amount of dollars spent gambling that "could have been used for other essential purposes" loses its meaning once we vary the gamblers' income levels: What is an essential purpose? Furthermore, a generous interpretation of this concept would imply that the sum of all money bet represents abused dollars. This is likely to be far different from the actual amount lost by a gambler. The concept also treats borrowed money as abused dollars. Later authors call this a "bailout cost." There are, of course, other problems with the Politzer et al. (1985) abused dollars criteria. The only benefit of using such a classification is its ease in measurement. As such, it is basically an early version of what many authors call "social costs." Upon closer examination, however, the criterion appears to be too subjective. The fact that it has not been used much since its inception suggests a more complete treatment of it is unnecessary here.

"Bailout Costs"

Walker and Barnett (1999) explain that transfers of wealth, whether voluntary or not, cannot be considered social costs since the overall wealth in society does not decline and an inefficiency is not created. *Pathological Gambling* (1999, p. 163) notes, "One of the biggest stumbling blocks in economic impact analysis is determining which effects are real and which are merely transfers." The PPF model helps to shed light on whether an effect is real or pecuniary (a transfer).

Now using two individuals' wealth on the axes, as in Figure 11, the PPF in this case illustrates the possible distributions of wealth of, say, $100.[20] As before, all points on the PPF are efficient, though both members of society might not consider them all equitable. "Bailout costs," "bad debts" and "government welfare costs" are all transfers of wealth, from concerned family members, the bank, and taxpayers, respectively, to the pathological gambler in question. In each case the person losing the money is likely to be unhappy with the transaction, but it is also a net benefit to the recipient, whether or not he suffers from pathological behavior.[21]

Suppose Joe is a pathological gambler and that he (1) receives a $20 "bailout" from his father Sam, (2) defaults on a $20 loan from

Figure 11
Wealth Transfer
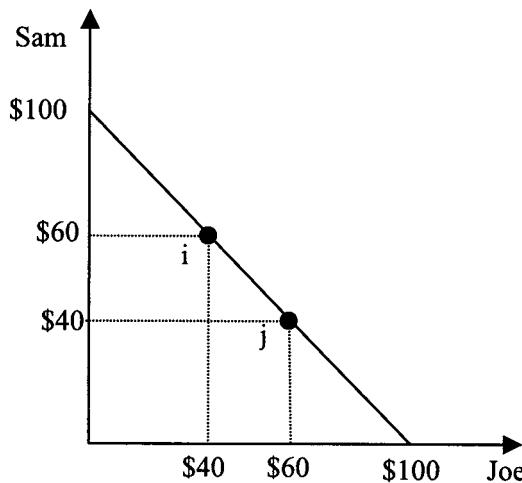
Sam the banker, or (3) receives a $20 check from the government, financed by Sam's taxes. Each case can be represented by movement from point *i* to *j*. It is not a decrease in societal wealth; it is only a transfer from Sam to Joe.

Example: Bailouts and Birthday Gifts

A birthday gift is not conceptually different from a bailout. Each is a case of a transfer of wealth. Walker and Barnett (1999, pp. 188–189) argue that neither voluntary nor involuntary wealth transfers can qualify as social costs.

However, there might be social costs associated with the transfer that are unrelated to the size of the transfer. An example is the psychic cost of having to provide a bailout to a relative. A bailout, one might argue, is made under duress.[22] A person might face a prison term if owed money is not paid to a lender. Consider a case where individual *g* is a pathological gambler who will receive either a bailout or a prison sentence, and individual *b* is the concerned family member who has the choice of bailing out *g* or letting him go to prison. If the individuals' utility functions are

$$U_g = U(C,G,P,U_b,B,Z) \tag{2}$$

$$U_b = U(C,U_g,B,Z) \tag{3}$$

where G represents gambling, P is prison time, and B is a bailout, then we might legitimately expect the following partial derivatives:

$$\frac{\partial U_b}{\partial U_g}, \frac{\partial U_g}{\partial G} > 0, \text{ and } \frac{\partial U_g}{\partial P}, \frac{\partial U_g}{\partial B}, \frac{\partial U_b}{\partial B} < 0.$$

In such a case, both the prison term and bailout have a negative psychic effect on both individuals. If the prison sentence has a greater total negative effect than the bailout, then b will bailout g. This *is* a choice.

Giving a birthday gift, on the other hand, is usually voluntary. We might expect both giving and receiving a birthday gift to increase utility, though it need not. For example, the recipient might feel that now he owes the giver. The giver, too, might feel that he was somehow compelled or obligated to give in the first place. Such a transfer might have either positive or negative psychic connotations. The same is true of any wealth transfer.

Industry Cannibalization (The Substitution Effect)

Many authors have alleged that the social costs of gambling are more general than the effects caused by pathological gamblers alone. An example includes the industry cannibalization (i.e., the "substitution effect") described by Gazel and Thompson (1996), Goodman (1994; 1995), Grinols (1994a; 1994b; 1995), Grinols and Omorov (1996), and Kindt (1994).

In the general context of the PPF model, increased output by one industry necessarily leads to decreased output in other industries. This is represented by movement along the PPF, for example in Figure 3, from *b* to *c.*

In the specific case of casino gambling, incremental legalization requires a slightly more complicated model. Using "all other goods" and "casino gambling" on the axes of Figure 12, consider first the situation in the US in 1980, when gambling was legal only in Nevada and Atlantic City. In this case, the distance the PPF extends along the

Figure 12
Casino Legalization

All other goods

a b

IC_{2000}

IC_{1980}

Year
1980   2000
Casino gambling
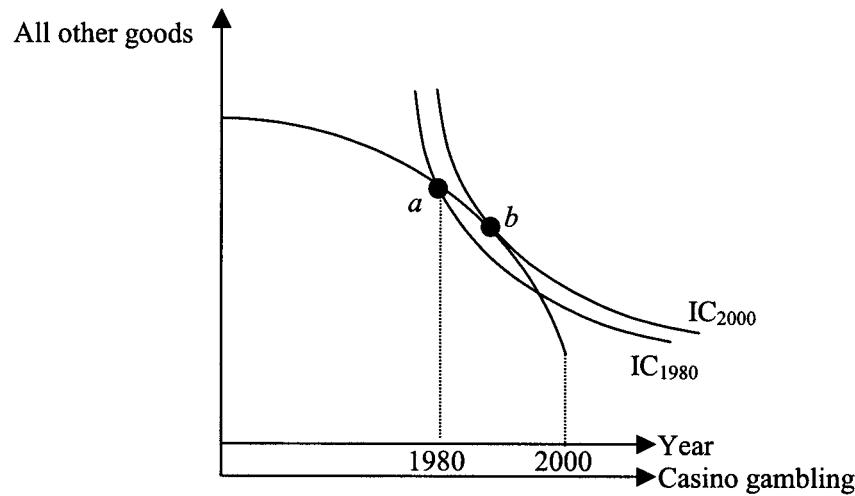
casino gambling axis is restricted by law. In 2000, when gambling is available in many other places, the ability to produce casino gambling increases. This can be represented by extension of the PPF along the gambling axis, as illustrated. Note that the axis serves to measure the volume of gambling, as well as the year.

As a result of wide legalization, more gambling is produced, and consumers end up on a higher indifference curve.[23] In a case of weak preferences for gambling (i.e., flat ICs), on the other hand, the expanded legalization of casinos should not lead to increased gambling. Clearly this does not reflect reality. As more gambling has been legalized, casino volume has increased overall. Therefore, the expansion of gambling *is* due—at least in part—to consumers' preferences for the activity, despite the arguments of many anti-gambling advocates.[24,25]

Government and Other Expenditures as Social Costs

Some researchers have been confused about how government spending relates to social costs. In economics, a social cost is a decrease in the wealth of society. Simply because government spends money on something, this does not imply a social cost has occurred.

From the previous discussion, it should be clear that mere wealth transfers, say from taxing Sam to pay Joe, do not represent social costs because the level of wealth remains constant.

What about other, non-transfer cases of government spending? Do these constitute social costs? This question was raised, for example, by one of Walker and Barnett's reviewers (1999, footnote 10, p. 187): "[The authors] even deny that thefts are costs to society. They deny that the costs of welfare are social costs. If not, they would not have to be included in the state budgets, so how can they not be social costs?"

This is a critical point to understand. Simply because the government spends money on something does *not* necessarily imply that the expenditure represents a social cost (i.e., a decrease in societal wealth), though it *may*. Yes, members of society must give money to government, and so in a sense, it is a cost to society members. However, the benefits also go to society members. For example, education, research, police, etc., would all be social costs if government expenditures are sufficient to qualify as social costs. These things are fundamentally different from the social costs associated with pathological gambling. We seek to minimize the social costs of gambling, but we do not seek to minimize education, research, police protection, etc., and many other forms of government spending. If government expenditures implied social costs, then the problem would be simple—eliminate government spending! This point hopefully illustrates why social cost must be something other than mere expenditures by a person, or negative consequences to an individual.

Example: Buying Pepsi

If government expenditures and bailout costs did represent social costs, then perhaps *every* exchange of money should. This argument quickly runs into problems: If I give someone 50¢ to buy a can of Pepsi, that represents a social cost analogous to a bailout cost. (Call this a social cost of thirst, or an "abused 50¢" due to thirst.) If the university pays me my monthly salary, that is a social cost analogous to any other government expenditure. (Call this a social cost of education.) The whole concept of social cost quickly loses its meaning when it is defined to be so general. This is one reason why the definition of social cost is critical.

Employment and Productivity Costs

If a worker's productivity falls, or if he fails to show up to work, either the employer or employee is the residual claimant to the loss (e.g., the "stolen wages" to which Thompson, Gazel and Rickman [1999] refer). There is no "social" aspect to this. If the employer chooses, he may reduce the wages paid to the worker in the proportion of missed hours. Alternatively, he may fire the worker and replace him with someone else who offers a higher marginal product. If the employer chooses not to take action against the worker, the employer incurs the cost of the worker's shirking. In either case, there is no externality to outside parties. McCormick (1998) provides a useful explanation:

> Imagine a person spends considerable time playing video poker, so much so that this person loses his or her job and has to seek a lower paying, less demanding position. Emphatically, the lost wages are not an uncompensated social cost. The individual directly bears these costs and still plays the games, then the individual feels all the consequences of his or her actions. In this case, there can be no welfare improvement from limiting this person's access to video poker games. This is true even if other people were depending on the gambler to supply them with income. While indeed it might be sad and a deep personal tragedy, it was a decision made by the individual and one for which, in classical economics, there is no gain from government intervention. (McCormick, 1998, p. 8)

Some may argue that the output in society has been decreased, but this argument is akin to the DUP allegation discussed by Walker (2001). When a professor spends time doing research, for example, it will reduce the number of widgets that could otherwise have been produced. But this is trivial.

Example: Vacation and Lunch Breaks

Walker (2001) argues that professional gamblers' activities do not constitute a social cost, even though output of tangible goods might be decreased. The same argument applies to the issue of missed work hours. For example, many people take vacations and lunch breaks from their jobs. But these do not constitute social costs. There is no fundamental difference between taking a break to eat lunch and taking a break to play slot machines. The "lost output" is irrelevant. If such breaks were to be counted as social costs, then any decrease from

the "full employment level of output," i.e., where all people work 24 hours per day, would count as social costs. Obviously, such a concept is not of much use.

Example: Deadweight Losses at Tax Time

The income tax system in the US is very inefficient. Tax laws change each year, and the greater part of a profession earns its living by keeping up-to-date on these arbitrarily changing laws. To the extent accountants are needed to fill out tax forms and otherwise comply with complicated tax laws, they are not performing otherwise useful tasks, e.g., advising management how to increase profits or reduce the risk of embezzlement. These are the social costs of a difficult-to-understand tax system. Notice, however, that hiring accountants is a voluntary, mutually beneficial transaction, once complicated tax laws exist.

How is this any different from the lost output from a pathological gambler who goes to the casino instead of the factory? In the case of a pathological gambler, it might seem that the pathological condition "creates an incentive" for the gambler to go to the casino instead of work. The result is less output. The difference, though, is the residual claimant. Here the employer has the opportunity to find another employee to take the less productive gambler's job. So, to the extent the employer pays more than the value of the worker's marginal product, it is his loss, not society's.

Outflow of Money from a Region

Political arguments and common sense seem to dictate that the introduction of gambling into a region or state can be economically beneficial only if the introduction brings about a net inflow of money. This is the underlying logic behind the export-base theory of economic growth. For example, small Caribbean islands often depend on tourism spending for their livelihoods. Tourism acts as an export that results in an inflow of money. But are exports necessary and sufficient for economic growth to occur? This issue is discussed in detail by Hoover and Giarratani (1984), Vaughan (1988), and Walker (1999). The allegation that exports are necessary for growth is clearly refuted by a simple example. The world exports nothing and yet we have experienced enormous economic growth. Schumpeter (1934) examines

several of the causes of economic growth, one of which is the introduction of a new industry, whether or not exports result. This is not to say that trade has no effect on economic growth—it does. Unfortunately, the importance of exports generally, and the inflow of money specifically, has been overstated by many researchers of legalized gambling. Examples include Grinols and Omorov (1996), Ryan and Speyrer (1999), Thompson (1996), Thompson and Gazel (1996), and Thompson and Quinn (2000).

Unfortunately, the argument that an inflow of money leads to economic growth seems to make intuitive sense, like the alleged unemployment created by importing goods.[26] For example, consider Thompson and Gazel (1996, p. 1), who write, "We wished to identify monetary flows to and from the local areas around the casinos . . . and also the monetary flows to and from the state as a whole. Quite simply, we were asking from where the money comes and where the money goes." They continue, ". . . the money gambled was a positive factor for the state and local economies, as if the players were from out-of-state (p. 5)." They conclude, "Casinos have drawn monetary resources away from depressed communities and away from individuals who are economically poor . . ." (p. 10).

In another example, Thompson and Quinn (2000) argue that an economy can be thought of as a "bathtub." They explain their model to analyze the economic effects of video gaming machines in South Carolina:

> The model portrays gambling enterprise as a bathtub for the economy with money running into and out of the bathtub as if it were water . . . A local or regional economy attracts money. A local or regional economy discards money. If as a result of the presence of gambling enterprise more money comes into an economy than leaves the economy, there is a net positive impact. However, if more money leaves than comes in, then there is a net negative impact. (Thompson and Quinn, 2000, pp. 3–4)

Perhaps the most fundamental point to be made against their arguments is that market transactions occur only when the participants both expect to benefit. The amount of money exchanged is of little relevance. If I go buy a box of cereal from the grocery story, for example, I value the cereal more than the money, and the store values the money more than the cereal. We both win from the transaction.

The argument about monetary inflows also ignores non-monetary

benefits of gambling legalization. Specifically, individuals receive consumers' surplus from most goods. In addition, the focus on monetary flows ignores the effects of increased production on labor and capital markets.

The most damning flaw is that the argument seems to be simply an application of ancient mercantilist thought.[27] Blaug (1978) explains:

> The leading features of the mercantilist outlook are well known: bullion and treasure as the essence of wealth; regulation of foreign trade to produce an inflow of specie; promotion of industry by inducing cheap raw-material imports; protective duties on imported manufactured goods; encouragement of exports, particularly finished goods; and an emphasis on population growth, keeping wages low. The core of mercantilism, of course, is the doctrine that a favourable balance of trade is desirable because it is somehow productive of national prosperity. (Blaug, 1978)

Carbaugh (1999) explains the mercantilist thought as well as the attacks that eventually led to its discrediting. Because the mercantilists focused on having a positive trade balance (i.e., exports > imports), they supported government restrictions in imports and the promotion of exports when possible. Both of these would have the effect of increasing the inflow of money into an economy. Because money was viewed as wealth by the mercantilists, these trade policies naturally followed.

David Hume provided one of the most devastating attacks on mercantilism with the development of his "price-specie-flow doctrine." Hume argued that a trade surplus is sustainable only in the short run, since the inflow of money into a country would act to increase prices. Higher prices in the country mean imports become relatively attractive, while the home country's exports become less attractive to foreigners. Hence, we would expect an increase in imports and a decrease in exports. The result is the long-run elimination of a trade surplus as prices adjust. Furthermore, this adjustment requires a net outflow of money. In essence, the mercantilist concern for monetary inflow is futile. Ekelund and Hébert (1997, p. 43) explain, "Hume argued that in effect, money is a 'veil' that hides the real workings of the economic system, and that it is of no great consequence whether a nation's stock of money is large or small, after the price level adjusts to the quantity of it."

Another major problem with mercantilism, as identified by Carbaugh (1999, p. 26), is that it represents a static view of the world. Thompson et al., view the economic pie as constant in size. In the context of the bathtub model, money coming into the tub is a benefit to the economy in question, and harms the region from where the money came. Money that leaves the local economy is harmful, and the region to which the leakage flows benefits. This implies that all transactions are zero-sum. Clearly this is a flawed view of market transactions. As Smith (1776) and Ricardo (1817) showed, specialization and trade result in benefits for society.[28]

Example: Buying a Car

Thompson and Quinn (2000) illustrate their mercantilist views when they write, "Gaming establishments need many supplies. Many of these are purchased from sources outside of the area. This is money lost. So too are profits that go to outside owners. Some gaming owners may reinvest monies in the local economy, but few have incentives to do so" (p. 4). Later they offer a specific example, video gaming machines purchased from out-of-state:

> There are 31,000 machines [in South Carolina]. Each costs $7,500. They have a life of from three to five years. Assuming a five year life, they carry a value of $1,500 per year each, or collectively $46,500,000. The machines are for all intents and purposes manufactured out of state. We can assume that $46,500,000 leaves the state each year because of the machines. (Thompson and Quinn, 2000, p. 10)

This is only one component of the cash outflow from South Carolina due to gaming machines. When they total all of the estimated outflows, they conclude

> The money leaving the state—from direct transactions—equals $133.3 million compared to $122 million coming into the state. In direct transactions, the state's economy loses. For the state as a whole, we can see that each dollar ($1.00) brought into the state as a result of the machines leads to a direct loss of one dollar and nine cents. ($1.09) (pp. 11–12)

This argument illustrates its authors' misunderstanding of even basic economic concepts. As an example, consider when people in South Carolina purchase a car. Few, if any, cars are manufactured in the

state. Most are produced in Detroit and Japan, let us say. Each car purchased then results in an outflow of money from the state. According to Thompson and Quinn's theory, then, each car purchase has a negative impact on the state's economy.

Upon further consideration, the Thompson and Quinn argument seems quite similar to an argument made by anti-gambling advocate Robert Goodman. In his book *The Last Entrepreneurs* (1979), Goodman explains what he believes to be the ideal economic structure. He argues that economies should strive to be self-sufficient. He explains the plight of a region that specializes too much:

> Since [a] booming manufacturing region has few incentives to develop its agricultural or energy technology, it falls progressively farther behind the agricultural or energy-specialized regions in its ability to do so. It is trapped in its own production specialization in order to generate the dollars it needs to buy the food and other resources for its survival. (Goodman, 1979, p. 183)

The Goodman (1979) argument, taken to the extreme case of an individual, suggests that self-sufficiency is the ideal situation. Any student of economics understands that this would condemn individuals to poverty. We are much wealthier by specializing and trading, compared to the alternative of producing our own food, sewing our own clothing, building our own homes, etc.

Example: Cash Transactions with Others

If we are to be concerned with the cash outflow that results from transactions with outsiders, should we be concerned with cash outflows from a particular individual? Specifically, if cash leaving a state is harmful to that economy, then shouldn't cash leaving a particular household be harmful to it? This would appear to be a logical argument based on the Thompson and Quinn (2000) model. Obviously it leads to problems, since any purchase of goods or services increases the welfare of the individuals who undertake the transaction.

This simple example helps to illustrate that the Thompson and Quinn (2000) model is severely flawed. Indeed, in the current form, the authors would appear to have it exactly backwards. Any voluntary cash transaction must lead to an increase in welfare for the involved parties. This would imply that cash outflows lead to increased—not decreased welfare.

Many of the monetary flow models that purport to measure the economic effects of gambling fail to recognize even the most basic of economic concepts. Hence, any conclusions derived from these models should be viewed with careful skepticism.

Reconsidering Alleged Social Costs

Though this section has not provided an in-depth analysis of all the alleged social costs, it does provide arguments and examples that should force us to reconsider the definition of social costs. If monetary flows out of a region have a negative effect on the region, then very peculiar conclusions must follow if the theory is applied to everyday transactions.

Many of the problems in the legalized gambling literature largely stem from careless analysis by researchers who shoot from the hip, discussing the economic effects of gambling in laymen's terms, without considering the logical implications of their models. Gambling research will continue to be mired in debate until we can eradicate fallacious and careless arguments from the literature. Obviously this is a new and exciting area of research, so it may take time to develop methodologically sound analysis. In any case, we can certainly attempt to weed out some of the disproved and illogical arguments.

The discussion in the previous sections of this paper has been geared at suggesting that the economic conception of social cost, as explained by Walker and Barnett (1999), provides the best methodology at this time. It is logically consistent and resistant to researchers' biases and preferences. It does have limitations, of course, some of which are identified by McGowan (1999). For example, not all of the economic effects of pathological gambling are measurable. Psychic costs are a very important, general class of costs that are difficult, if not impossible, to measure.[29] There may be other costs that have yet to be explored.

DOES A DEFINITION REALLY MATTER?

With so many difficulties stemming from the social cost literature, one is left to wonder, "Does the definition of social cost really matter?" For example, Thompson and Quinn (2000) dismiss the importance of such a definition:

Rather than arguing over what should or should not be included in a cost analysis, we choose instead to plow forward with references to the other studies, but also with complete openness that will allow others to reformulate our cost findings to their models if they take issue with our model. (Thompson and Quinn, 2000, p. 15)

Recently at the 11th International Conference on Gambling and Risk-Taking, Thompson, Speyrer, and Westphal argued that a precise definition of social cost is not important. They argue that it is simply a matter of preference and that standardization is not important. What is important is measuring all possible negative effects of pathological gambling.

Social Costs Versus Economic Costs

Thompson et al. (1999) make the literature even more confusing in the extension to their 1997 paper. They apparently react to an early version of Walker and Barnett's paper (1997): "We are defining social costs for our study, we are not deferring to definitions that others make, no matter their status in any academic discipline" (Thompson *et al.*, 1999 p. 3). It is informative to quote Thompson et al. (1999) at length, and then discuss their model in detail:

> The social costs we are seeking to reduce to dollar figures are the *costs that the gambler imposes upon people who are not participating in the gambling process as a result of his or her gambling and gambling related activities.* The social costs of gambling are burdens that the gambler imposes on others. Others would not have these burdens if the individual were not participating in gambling activities. *Social costs ARE* transfers from one individual who is gambling to others who are not involved in gambling.

> [In an earlier study] we looked at the presence of casinos in communities and asked just how much money flowed into and out of the community as a result of the presence of casino gambling. The net result constituted the economic cost . . . Moneys that have to be spent on police resources and on the judicial system because of the criminal activity of gamblers do result in such collective losses for everyone in society. They are BOTH economic costs for a society and social costs for a society.

> We include the social cost of stolen money and goods by a compulsive gambler to support gambling activity as a *social cost* of gambling. We include unpaid debts as well. We DON'T CARE whether or not the money has left the community; we DO CARE if the activity of the gambler has resulted in a reduction of

wealth to other people who have not been willing partners in the gambling activity or the thieving activity involved. (Thompson et al., 1999, p. 3)

Even in this discussion, the exact definition of "economic cost" and "social cost" is unclear. From the above quotation, though, one could reasonably infer that they define the following:

Social costs—"are transfers from one individual who is gambling to others who are not involved in gambling."
Economic costs—are how much money flows out of a community (on net) as a result of the presence of casino gambling.

Restated, an economic cost occurs when money flows out of a community, and a social cost occurs when money changes hands from one person to another, or when one person's actions cause expenses to other people.

The Thompson et al. (1999) definition of "economic cost" has already been dealt with in the previous section. Clearly this concept was not developed by, and would not be accepted by trained economists. Their conception of "social cost" amounts to wealth transfers that are inspired by pathological gambling. These, too, have been dealt with earlier in this paper (movements along the PPF).

In defending their earlier paper from the criticisms of Walker and Barnett, Thompson, et al. (1999) write,

We reject criticisms of our model which say that *social costs* may not include costs that are imposed upon non-gambling individuals or groups of individuals while not being imposed upon all the members of the society (Walker and Barnett, 1997). Our critics have suggested that we cannot call a theft a social cost. WE DO CALL A THEFT A SOCIAL COST . . . We don't say our critics are wrong. Not at all. They are simply pursuing a different definition of social costs than we are pursuing. It is a matter of apples and oranges. (Thompson et. al., 1999, p. 3)[30]

It is important to note that Thompson et al. misinterpret Walker and Barnett's (1999) definition of social cost. Walker and Barnett never claim that social costs require that *all* members of society be affected in a negative way, only that the aggregate real wealth be reduced.

More generally, Thompson et al. illustrate the major problem that plagues research in this area: They argue that researchers should feel

free to pursue any measure of social cost that suits their fancy. While their openness to other interpretations of social costs is admirable, Thompson et al. (1997; 1999) do not contribute in a positive way to the overall state of research in the area. Arbitrarily defining "social cost" dissolves the meaning of the term. More importantly, when each researcher chooses a different methodology, comparison among different regions, states, and countries through time becomes impossible. Even an imperfect but standardized measure would be an improvement. This was the major point of Walker and Barnett's (1999) earlier work.

The Definition Does Matter

Gambling research is multidisciplinary. As a result, it may be difficult for the various disciplines to agree on a single definition of social cost. Despite the difficulty of reaching a consensus, it is critical to the validity and future of social cost research. Even if we agree now on a specific criterion, nothing prevents us from switching to a better methodology if one is developed.

Survey Methodologies

Quite apart from the problems noted above, there are countless other errors that represent the foundation of the Thompson et al. (1999) analysis. An in-depth attack on that paper is not necessary. However, it will be useful to discuss their survey methodology, as theirs reflects that used in many other studies.

Consider their statement that "Thirty-two of 58 Connecticut members [of Gamblers Anonymous (GA)] who had been divorced or separated at some time, indicated that gambling was the primary cause for their separation" (p. 4). How do these individuals know for sure what caused the divorce or separation? In some cases, of course, this may be the only problem. But in most, gambling is likely only a contributing factor. The same will be true of *all* of the negative effects attributed to pathological gambling. It is difficult, if not impossible, to accurately assess the blame to gambling.

A similar problem relates to questions about the "sources of funds for gambling." For example, see Table 4 of Thompson et al. (1999, p. 6). Among the sources that GA members listed for gambling money,

are "household, credit cards, banks, sold stocks, bad checks, sold property, relatives, spouse, bookies, loan sharks, and casino credit." How can a person specifically identify the source of that portion of her income that was spent on gambling? These amounts are not earmarked. Instead, consumers receive income from a variety of sources, and spend the money on a variety of goods and services. Trying to link a specific inflow to a specific outflow of money does not make sense.

The same problem will result anytime a GA member is asked to describe the effects of his gambling problem. Although this type of survey might be the best available, we should still acknowledge its limitations. For they may be severe enough to discredit any conclusions derived from them.

SUGGESTIONS FOR FUTURE RESEARCH

The methodological issues in the social costs of pathological gambling are rather complicated. This is compounded by the diversity of researchers' backgrounds and specializations. It will be fruitful to develop a standardized social cost methodology. Only when we adopt a single definition of social costs and agree upon acceptable measurement methods, can we begin to compare social cost studies across regions and through time. This will be particularly useful for future policy espousal and the evaluation of past experiences.

Perhaps the most important point to recognize is that economics is a complicated subject. Though some of the issues seem straightforward, often in reality they are very complicated. Such is the case with the social costs of pathological gambling. Too often, logical thought has been foregone in favor of ad hoc methods of analysis. These studies usually provide unreliable estimates of the social costs, and hence, may lead to poor policy.

The model presented in this paper allows us to adopt a simple rule for identifying and measuring the effects of pathological gambling. First, for the items that are legitimately considered to be social costs, i.e., if they decrease the aggregate wealth in society, then we should attempt to measure their value. For all of the other negative effects of pathological gambling that do not decrease aggregate wealth, or that do so in a way that cannot be adequately measured (e.g., psychic costs), then we should only identify these effects and

suggest ways to decrease their severity. But we should not attempt to arrive at dollar figures for these effects since the estimates are likely to be unreliable.

This solution would be easier to follow if politicians and the public were not so hungry for quick answers. Unfortunately, it is very simple to just compare a total cost and benefit estimates, regardless of their conceptual validity, and make conclusions and policy on that basis.

Now that the legalization of casino gambling has slowed in the US, and now that we have several years of data, we should go back and perform careful economic analyses of the effects of gambling and pathological gambling. But we should not attempt the impossible. The conclusions derived from economic analyses are only legitimate to the extent the studies' methodological foundations are sound.

NOTES

1. For example, see the Australian Productivity Commission, APC (1999), National Gambling Impact Study Commission, NGISC (1999); National Opinion Research Center, NORC (1999); and *Pathological Gambling* (1999).
2. The entire "social costs of gambling" literature epitomizes this confusion.
3. Thompson's model focuses on the importance of monetary flows to and from a regional economy. The issue is discussed later in this paper.
4. Heyne attributes the example to Michael Polanyi. By the way, people balance bicycles not by leaning in the opposite direction of a fall, but rather, by "[turning] the handlebars in the direction they are tipping so as to generate a centrifugal force that will offset the gravitational force pulling them down and to do this in such a manner that, for any given angle of imbalance, the curvature will be inversely proportional to the square of the cyclist's velocity."
5. This type of exposition is used by Dixit and Grossman (1984). A slightly more technical presentation would include a discussion of relative prices, input coefficients, and preferences. See any intermediate microeconomics text for more details on the foundations of these models.
6. The simplification of a two-good economy is not a serious problem. We could instead use autos and "all other goods," which would be a perfectly realistic, though a more general example.
7. This PPF shape corresponds to the upward-sloping supply curve that is typically discussed in principles courses.
8. The slope of the IC is referred to as the "rate of commodity substitution," (RCS). The RCS of beer for pizza, i.e., the willingness to sacrifice beer for pizza, falls as one moves down and right along the IC.
9. For more detail on social indifference curves, see Henderson and Quandt (1980, pp. 310–319).
10. A more technical discussion can be found in any graduate-level economics text, e.g., Henderson and Quandt (1980).
11. Dixit and Grossman (1984) use a similar example.
12. An additional social cost of theft, as noted by Walker and Barnett (1999) would be the psychic costs that accrue to the victims. These are not easily modeled or measured.
13. As McGowan (1999) notes, this is a utilitarian interpretation of wealth transfers.

14. As Walker and Barnett (1999, pp. 200–202) and *Pathological Gambling* (1999, p. 170) point out, these costs may be attributed to pathological gambling only to the extent they are due to the gambling problem and not some other addiction.

15. In the case of the social costs of pathological gambling, the counterfactual scenario is the absence of pathological gambling and the associated social costs. The extent to which the absence of legal gambling would eliminate these is debatable.

16. At the 1st International Symposium on the Economic and Social Impact of Gambling, several psychologists informally told me that the term "psychic costs" was "offensive." There is certainly no intention to offend; however, since Walker and Barnett use this term, I continue its use here.

17. One critical issue that quickly becomes apparent is the inability to quantify the value of psychic costs.

18. McCormick's (1998) discussion of "uncompensated social costs" is a useful complement to this section. The private consequences issue is dealt with in more detail by Eadington (2000).

19. See Baumol and Oates (1988) for a complete discussion of externalities.

20. The straight line PPF indicates that the "good," i.e., a dollar, is perfectly shiftable between individuals. In production cases, PPFs are bowed, indicating increasing opportunity costs of production. As the quantity produced rises, costs rise because input resources are not equally well suited for all lines of production.

21. This discussion ignores a potential social cost associated with administering wealth transfers. With government transfer payments, for example, there is often a cost to collecting (and avoiding) the taxes. These are social costs of taxation.

22. Bill Eadington pointed this out to me.

23. Note that the potential social costs from pathological gambling are ignored in Figure 12. These are not relevant for the specific question of whether the "substitution effect," i.e., industry cannibalization, decreases welfare.

24. For example, see Gross (1998) and Goodman (1994; 1995). Advertising and the lobbying efforts of the gaming industries obviously will affect the expansion of gambling.

25. Movement along the PPF implies that employment in one industry expands, while it shrinks in the other industry. Overall employment, in due time, remains roughly constant, *ceteris paribus* (Krugman, 1996, p. 123; Roberts, 2001).

26. For more discussion on this issue, see Krugman (1996) and Roberts (2001).

27. For a discussion of mercantilism, see Blaug (1978), Carbaugh (1999), or Ekelund and Hébert (1997).

28. This does not mean that no one is harmed by specialization and trade. Overall, the benefits outweigh the harm.

29. To be clear, the value of psychic costs could be measured, say, by asking individuals how much they would be willing to pay to avoid them. Surveys asking such questions would need to be very carefully constructed to be valid. This issue is beyond the scope of this paper.

30. It is unclear why Thompson et al. (1997; 1999) believe thefts should be considered a social cost. A tax on income is, like theft, an involuntary wealth transfer, but it is doubtful that Thompson et al. would consider taxes to be social costs. The fundamental difference between the two, of course, is that the government has the legal right to coerce money from citizens, while thieves do not. If illegality is the basis for classifying something as a social cost, then the authors should say so. If legality rules out something from being classified as a social cost, then bailouts, welfare payments, bankruptcies, etc., cannot be considered social costs, since all are legal.

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