8   The Present and The Future

Facts are stubborn things; and whatever may be our wishes, our inclinations, or the dictates of our passion, they cannot alter the state of facts and evidence.

John Adams (1770)

CHAPTER SUMMARY. Applying estimates of the prevalence of problem and pathological gamblers to the cost estimates of Chapter 7 produces social cost totals. A citizen or local government official also might be interested in knowing the additional social cost of introducing casinos. In this chapter, we report three numbers: first, the implied social cost of problem and pathological gambling on the national level; second, the cost–benefit ratio for the casino industry based on per-adult numbers adjusted to a common base; and third, an estimate of the long-term social costs from introduction of casinos into an economy or region that did not have them previously. On a national basis, the social costs of problem and pathological gambling are between $32.4 billion and $53.8 billion. On a per-adult basis, these translate to $165 to $274 per year, or $219 on average. Comparing the costs of Chapter 7 to the benefits of Chapter 6, adjusted to a common base and including regulatory costs, implies that costs outweigh benefits by a factor between 3.9:1 and 6.3:1. The long-term cost-to-benefit ratio from introducing casinos to a region

that did not have them previously is greater than 3:1. As a device for raising taxes, casinos are more socially costly than a conventional tax. Even assuming that cost numbers are overstated by a factor of three and correcting them, casinos still barely fail a cost–benefit test.

The social-cost estimates in Tables 7.1 and 7.2 were derived by averaging over the available studies for each category of social cost, adjusting to 2003 dollars, and summing over cost types. Roughly half of the social costs are publicly borne[238] and 37.5 percent require tax dollars.[239] Assuming that an additional tax dollar costs the public $1.25[240] and applying this multiplier to 37.5 percent of the social costs in Tables 7.1 and 7.2 implies that a pathological gambler generates social costs of $11,304 and a problem gambler generates $3,222. What do these numbers imply at the national level? To answer, we need an estimate of the number of problem and pathological gamblers. For this, we turn to information about the country as of the mid-1990s. To the extent that the percentage of problem and pathological gamblers has changed since then, the figures in Table 8.1 would have to be adjusted.

Shaffer, Hall, and Vander Bilt (1997) reviewed 120 studies of the prevalence of problem and pathological gambling. They estimated that

Table 8.1. National Costs of Problem and Pathological Gamblers, Adjusted by Prevalence Estimates Confidence Bounds (National Cost in $ Billion)

National Cost: Billions of Dollars				**Per Adult Cost**			
Problem Rate	High	$43.10	$53.80	Problem Rate	High	$219	$274
	Low	$32.40	$43.00		Low	$165	$219
		Low	High			Low	High
		Pathological Rate				Pathological Rate	

Pathological 95% Confidence Bound:	LOWER	0.90%
Pathological 95% Confidence Bound:	UPPER	1.38%
Problem 95% Confidence Bound:	LOWER	1.95%
Problem 95% Confidence Bound:	UPPER	3.65%

1.14 percent of the adult population were past-year pathological gamblers with 95 percent confidence bounds of 0.9 and 1.38 percent.[241] The equivalent figures for problem gamblers were 2.8 and 1.95 to 3.65 percent.

Applying the lowest and the highest percentages to the number of adults (196,649,000) and multiplying by cost implies that problem and pathological gambling costs the United States between $32.4 billion and $53.8 billion annually, or $165 to $274 on a per-adult basis. The average figures are $43.1 billion and $219 per adult. Adding representative direct regulatory costs for gambling of $15 per adult (see the discussion of direct regulatory costs in Chapter 7) raises the average per adult social costs to $234. For comparison, the GAO reported annual costs of $110 billion for drug abuse.[242] Thus, problem and pathological gamblers are about 40 percent as costly to the nation as the drug problem. Lost output of the 1991–92 recession was approximately $164 billion in 2003 dollars. The costs of problem and pathological gambling are comparable to the value of the lost output of an additional recession in the economy every four years.

Chapter 6 explained that the long-term benefits of casinos took the form of distance benefits, estimated to be $34 per adult based on the highest estimate of three procedures. We used economic theory to construct a bound for measuring benefits based on information on how much consumers gamble when they are different distances from the casino. The bound was applied to data on distance and demand reported in industry studies and to a rule of thumb about how casino demand drops off with distance. The highest estimate was derived from simulating the gambling choices of a representative consumer that incorporated 1991–93 information on the amount gambled by adults living near casinos.

Social costs were reported in 2003 dollars in Chapter 7. Thus, to compare benefits and costs, we adjust benefits to a 2003 base. Making this change, we find that the long-term benefit of casino expansion (e.g., having them within 5 miles of every adult), compared to the alternative in which casinos are absent from the economy, is approximately $46 per adult. The costs reported in Tables 7.1 and 7.2 range from $180 to $289 per

adult, after including direct regulatory costs. The costs of problem and pathological gambling versus the benefits of casino expansion, therefore, range from 3.9:1 to 6.3:1.

The rate of problem and pathological gambling might be expected to be positive, even with no casinos present anywhere in the United States. Therefore, what is the additional social cost incurred by a region that introduces casinos for the first time? We do not know what the long-term rate of problem and pathological gambling would be without casinos anywhere, even in Nevada. However, some evidence about the effect of casinos comes from the State of Iowa, which performed a before-and-after study of problem and pathological gambling.

In 1985, dogracing began in Iowa followed in 1989 by horseracing. In 1991, Iowa became the first state to introduce riverboat casinos. American Indian casinos were established the following year. Slot machines at racetracks were approved in 1994. The legislature removed betting limits in 1994. By 1995, gambling activities in the state included – in addition to games like bingo and the lottery – nine casinos, three dogtracks, and one racetrack. In 1995, the Iowa Department of Human Services commissioned a replication study to see what changes had occurred in the number of problem and pathological gamblers in the state since 1989, when an earlier study was completed.[243] Table 8.2 summarizes the main findings. Lifetime problem gamblers are individuals who have satisfied the conditions for problem gambling at some time during their lifetime as indicated by their answers to a questionnaire screen, while current problem gamblers are those who satisfy the criteria in the immediate past

Table 8.2. Iowa Replication Study: Problem and Pathological Gamblers (Percent)

	1989	1995	Change
Current Pathological Gamblers	0.05*	1.0	0.95
Current Problem Gamblers	1.05*	2.3	1.25
Lifetime Pathological Gamblers	0.1	1.9	1.8
Lifetime Problem Gamblers	1.6	3.5	1.9

*Calculated as a proportion of the 1989 lifetime rate.

year.[244] The same distinction applies to current and lifetime pathological gamblers. Although lifetime pathological gamblers may have exhibited pathologies in the past, they need not be pathological today.[245] Based on Tables 7.1 and 7.2, the social cost to Iowa of additional problem and pathological gamblers after the advent of casinos was $148 per adult per year, rounded to the nearest dollar.[246]

The 1995 replication study concluded that "there has been a significant increase in the prevalence of problem gambling in Iowa since 1989."[247] Although the increase in problem and pathological gamblers might have occurred for reasons other than the increased availability of casinos and racetracks in Iowa, if one is willing to assign the change to casinos, then the estimated costs can be used. Multiplying cost per adult by the adult population of Iowa (estimated by the U.S. Census Bureau as 2,058,627 on July 1, 1999) determines that casinos are costing the state $304 million annually in social costs. Added to these would be the direct regulatory costs of casinos in the state.

The final report of the National Gambling Impact Study Commission includes less direct evidence that may be used as a confirmation of the Iowa data. The Commission provides data on the percentages of the population that are problem and pathological gamblers by their distance from the nearest casino. This research indicates that the share of the population that are problem gamblers rises from 0.3 to 1.1 percent when the distance to the nearest casino falls from more than 250 to less than 50 miles.[248] The figures are given in Table 8.3 along with the corresponding numbers for pathological gamblers.

It is unfortunate that no figures were given for distances of less than 50 miles, which would have provided a better benchmark for the effect of

Table 8.3. Share of Problem and Pathological Gamblers in the Population by Distance from the Nearest Casino

Distance	Problem	Pathological	Total
0–50 miles	1.1%	1.3%	2.4%
51–250 miles	0.6%	0.3%	0.9%
250+ miles	0.3%	0.4%	0.7%

introducing casinos to an area that did not have them before. The share of the population that is problem and pathological gamblers might be expected to continue to rise for certain distances below 50 miles. Also, the drop in the number of pathological gamblers, from 0.4 percent of the population to 0.3 percent as one moves *closer* to the nearest casino (i.e., 51 to 250 miles versus 250+ miles), seems to indicate a sampling problem. The reported percentages may not be representative. Nevertheless, taking the figures as they are and presuming that the difference between the 250+ and below 50 miles numbers approximates the increase in the share of problem and pathological gamblers to be expected from the introduction of casinos, the number of problem gamblers rises by 0.8 percentage points and the number of pathological gamblers rises 0.9 percentage points. The increase in social costs per adult based on Tables 7.1 and 7.2 is $143; [249] adjusting the social benefits to 2003 dollars produces $45.93. The extra cost of casinos exceeds the extra benefits to the region by a ratio of more than 3:1. Thus, even if the social costs are cut by two thirds, casinos still fail a cost–benefit test.

Regional governments continue to consider casino-expansion proposals, often appearing in related guises such as providing EGDs at racetracks. The reason is that casinos can be taxed and the money raised appears to be "free," or at least voluntarily paid. Once a proposal is considered in these terms, it should be evaluated for what it is: a tax mechanism. Because government always has the option of levying conventional taxes, such proposals should be compared to conventional taxes in terms of their efficiency. Conventional taxes cost the private sector between $1.17 and $1.57 per additional dollar collected (see Chapter 7 and footnote 240); the cost per dollar of "tax by casino" is generally higher.

To show this, let C be the social cost per adult of introducing casinos. Based on Iowa, let us set $C = \$163 \,(= \$148 + \$15)$. Let L be the average loss for adults in the region to be served by the casino. For purposes of discussion, let $L = \$400$. Finally, let t be the tax rate on casino revenues. We will assume that $t = 0.2$, a not unrepresentative rate. Then the tax dollars collected (a cost to the private sector) plus the direct social costs are $tL + C$ per adult for tL dollars collected. The social cost per tax

dollar raised is, therefore, $1 + C/tL = \$3.04$. Even with a higher tax rate, the cost per tax dollar of "tax by casino" remains above $1.57 until the tax rate exceeds 71 percent. By a wide margin, tax by casino is inferior to levying a conventional tax.

CONCLUSION

This book was written out of the growing realization that those who most needed to understand the economic effects of casinos were receiving neither balanced nor conceptually valid information. It is not surprising that a straightforward activity, which nevertheless earns its promoters huge amounts of money, should be the focus of intense lobbying, misrepresentations, and overstatements. Chapter 3 addressed this issue. What *is* surprising is the extent of misunderstanding that exists regarding the theoretical and conceptual underpinnings of the evaluation of the social desirability of adding an industry to the economy. The casino industry is simply a case in point. Nevertheless, it is a fascinating study because it is the only available example of an industry that was criminalized and intentionally eradicated in one century and then reintroduced from zero in the next. Most areas of America had no legal casino gambling before 1990; therefore, we should be able to compare two extremes: one where the industry is totally absent from society, and the other where it is permitted laissez faire free entry. The question is whether society is better off with or without casino gambling. We showed in Chapters 4 and 5 that the analysis of this question is quite different from applying a net export multiplier model; that jobs are not the measure of economic development nor of the economic benefits of casinos; and that to evaluate the economic impact of casinos requires the use and understanding of cost–benefit analysis grounded on individual well-being and utility.

Although the primary purpose for this book was to establish the conceptual basis for the evaluation of casinos, this particular theoretical contribution is general and also would apply to other industries. The application to casinos involves estimating a number of externality costs

that are specific to casinos. Chapter 5 provides the first explicit theoretical justification of what should be included as costs and benefits and how they should be computed. This justification is based on individual utility and distinguishes business and social profitability for industries with externalities. The heretofore lack of a clear theoretical basis has impaired the entire research agenda on this issue. Much research has examined relatively minor issues or issues that are not even part of a properly defined cost–benefit analysis. Conversely, there are relatively few estimates of some of the key components of social costs and benefits. Consequently, a well-grounded theoretical framework of costs and benefits makes future research more productive.

Using the theoretically laid foundation, Chapters 4 and 5 corrected common conceptual mistakes prevalent in the casino and gambling literature. One example of a common error is the focus on local rather than total social costs or benefits. On the benefits side, increases in local profits and taxes are often weighted heavily, whereas losses in profits and taxes from geographically distant areas are weighted less or not at all. Similarly on the cost side, local crime is often weighted heavily, whereas there is little discussion about whether crime was simply moved from other areas. Another error is the frequent use of the net export multiplier modeling of jobs with no investigation of the social value of additional jobs on existing residents, an inappropriate method to determine social costs and benefits. Clearly, identifying these errors is the first step to reducing them in the future.

The second objective of the book was to fill as much as possible the unfilled gaps of a complete cost–benefit analysis of the casino industry. Chapters 6 and 7 applied the theory to construct a taxonomy of benefits and costs as applied to the casino industry. To estimate costs, the original research on this topic was treated and organized.

The evidence indicates that casino gambling fails a cost–benefit test by a wide margin. Chapter 6 found that social benefits were $34 per adult based on simulations representative of the early 1990s, or $46 if adjusted to 2003 dollars; Chapter 8 found that social costs were between $180 and 289 per adult in 2003 dollars, adjusted for direct regulatory

costs and the tax deadweight loss involved in covering 37.5 percent of the social costs. Even if these numbers are not known with complete accuracy, adjustments to them are unlikely to overturn the conclusion that casinos create more costs than benefits.

Standard public-finance corrective theory for an industry with externalities is that it should be taxed by an amount equal to the costs that it imposes on society. By internalizing the externalities, corrective taxes would cause casinos to adjust their operations or go out of business. Only those that could pass a cost–benefit test by compensating society for the damage they cause would continue to operate. How big would corrective taxes be? In 2000, the average adult in the United States lost $181 at casinos. If casinos were more readily available in all locations, this figure would undoubtedly be higher; it is not unreasonable that it could rise to $400 per year. Social costs between $180 and 289, therefore, suggest that Pigouvian corrective taxes should be in the vicinity of 45 to 70 percent of casino revenues. If casinos paid 45 to 70 percent of their gross revenues in taxes, according to the theory, those that continued to operate would have internalized the social damage they cause, and the casino industry as whole would be induced to operate at a socially desirable level. Once taxes have been imposed that induce the right level of gambling – whatever that may be – it is immaterial to legislators, from an economic standpoint, whether the activity survives or not; gambling can be removed from the list of problems requiring ongoing legislative attention.

With respect to the future, it is evident that there is the need for more quality research on both the benefit and cost sides. Chapter 6 estimated the social benefits of casinos, but there remains the need for more and better research. The simulations of Chapter 6 indicate social benefits to casinos that are relatively small. This is due partly to the fact that the American economy is large and diverse, offering many forms of entertainment. The absence of one form of recreation – casino gambling – is, therefore, overshadowed by the wide range of others.

There is a need for greater uniformity in the manner in which costs and benefits are classified and treated. Focusing future research questions and

methodologies on a clearly formulated theoretical foundation will allow us to make our estimates of both the costs and benefits of casino gaming more precise. Chapter 7 is the first attempt to construct exhaustive and mutually exclusive cost categories into which the results of research from different sources can be placed and compared. Peer-review-quality studies not funded by the casino industry or by progambling or antigambling groups are especially needed to refine and improve the cost–benefit numbers.[250]

Finally, it is important to keep in mind the alternatives. Citizens of the nineteenth century chose to ban casino-style gambling, and by 1900 it was not allowed in any state. Another choice is to freely license casinos, letting as many operate as choose to do so and the market will bear, as was done in Nevada in the 1930s, in Atlantic City in 1978, and in some other parts of the United States in the 1990s. Not unmindful of the fact that casinos can – in principle and under the right conditions – generate true economic development, the research presented in this book suggests that the social costs from widespread expansion of casinos are more than three times the benefits and that the second option should be rejected. What is not known is whether there is a third option: Can casino gambling be offered in such a way that it does not create high social costs and could pass a cost–benefit test in its altered form? For example, can gambling be provided in a manner that does not generate problem and pathological gamblers, and thereby lead to fewer crimes?

To answer this question, as well as to further refine the cost–benefit analysis of casino gambling, the following questions would have to be addressed:

- **What is the effect of the presence of casinos on the number, life cycle, gambling patterns, and social costs of problem and pathological gamblers?** Because the social costs of the casino industry are heavily although not exclusively related to problem and pathological gamblers, it is essential to know how casinos affect problem and pathological gamblers. There is abundant evidence that increased gambling

opportunities increase problem and pathological gambling. As discussed in Chapter 7, the National Gambling Impact Study Commission reported that the presence of a casino within 50 miles roughly doubled the prevalence of problem and pathological gambling.[251] Other indicators include the tremendous increase in the numbers of gamblers seeking help when casinos enter a market, the increase in gamblers-anonymous groups when gambling enters a state, and the evidence from survey data on the number of problem and pathological gamblers before and after casino expansion.

How much an additional problem or pathological gambler costs society is best addressed by studying problem and pathological gamblers directly. However, estimates derived from this sample may be biased because only a small fraction of problem and pathological gamblers seek formal treatment. If those who seek help impose the greatest costs on society, our cost estimates of problem and pathological gamblers would be overstated; of course, the reverse is also true.

Casinos benefit from the gambling habits of problem and pathological gamblers. Whereas an average adult might lose several hundred dollars each year in casinos if they are nearby, a typical pathological gambler often loses ten to twenty times that amount. Therefore, a small number of pathological gamblers accounts for a significant portion of casino revenues. A related issue is to determine the share of casino revenues that derive from problem and pathological gamblers. Does this share differ by type of gambling? For example, lotteries receive a smaller portion of their revenues from problem and pathological gamblers because lottery play attracts a larger portion of the population.

When casino gambling becomes available for the first time, what is the behavioral time profile for individuals who enter and leave the states of problem and pathological gambling? Do individuals begin with a period of increasing gambling dependence, move through a period of problem gambling, progress to pathological gambling, seek treatment (or withdraw unilaterally from the problem), and abstain

thereafter? Or are there relapses and continued problems if treatment is not sought? This information could be used to predict how many currently active problem and pathological gamblers to expect for a given population as a function of the availability of casino gambling.

- **What effect do different types of treatment have on problem and pathological gamblers?** Such information would help knowing how to efficiently allocate funding resources for treatment interventions.
- **How can casino gambling be offered to minimize its social costs?** Quinn (2001) discusses many possible ways of offering casino gambling to reduce social costs. To evaluate the effectiveness of these interventions and their impact on casino benefits, one would need to estimate the response of both problem and pathological and non-problem and nonpathological gamblers to such actions.
- **What are the distance benefits of increasing casino gambling?** To date, only the present study has attempted to answer this important question. Testing the strength of the result will provide more insight into this understudied area.

The numbers and theory presented in this book indicate that casino-style gambling is associated with social consequences whose nature and magnitude make it one of a small family of activities, including drug abuse and alcoholism, that cause significant negative externalities. The size of the social costs – 40 percent of the costs of drug abuse – are not so great that the economy cannot sustain them. The economy could almost surely sustain the costs of three, four, or more social problems of this size. The question, however, is why should the economy accept an unnecessary social cost? Unlike American prohibition of alcohol, which most regard as a failure, criminalization and prohibition of casino gambling was successfully practiced for most of the twentieth century. Perhaps we can learn ways to offer gambling that do not lead to harmful consequences. However, if not, the logical implication is to ask whether the experiment in the present generation should be allowed to continue or should be reversed. In South Carolina, slot machines were banned by court action beginning July 1, 2000. At that time, the state had thirty-two active

gamblers-anonymous groups with a typical meeting size of almost 40. Six months later, there were 11 groups and the size had dropped to as few as one or two in many of those remaining. During the same time, the number of help-line calls in Horry County, South Carolina (Myrtle Beach) dropped from two hundred per month to zero.[252]