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SOCIAL CAPITAL AND CASINO GAMBLING IN U.S. COMMUNITIES

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ABSTRACT. This paper empirically analyzes the impact that the spread of casino gambling has on social capital in communities throughout the United States. Social capital is a networking process that translates into an individual's effectiveness in the community and workplace, and binds communities together. Several recent studies have also demonstrated a link between higher levels of social capital and quality of life. In this study, social capital is measured based on six dimensions: trust, civic, volunteerism, group participation, giving, and meeting obligations of family and friends. Using data from the DDB Needham database for the years 1978, 1988, and 1998, regression analysis is conducted on over 300 Metropolitan Statistical Areas throughout the United States to determine the impact that the spread of casino gambling has on social capital. The results of the analysis indicate that the presence of casino gambling significantly reduces social capital when a casino is located within 15 miles of a community, suggesting that a casino's location influences a community's quality of life and should be a consideration when deciding on the merits of gambling legalization.

INTRODUCTION

This article examines how the spread of casino gambling influences social capital in United States communities. Social capital is a multidimensional concept that is increasingly garnering the attention of social scientists, who have applied it to the workplace (e.g., Requena, 2003), economic development (e.g., Knack and Keefer, 1997), and crime (e.g., Rosenfeld et al., 2001), to name just a few applications. Regardless of its application, the central idea of social capital is that networks matter (Field, 2003: 12).

Field (2003) argues that Pierre Bourdieu, James Coleman, and Robert Putnam are three seminal figures in the study of social capital. Bourdieu (1986) applied the concept of social capital to examine social

status and inequality, particularly the manner in which some are able to use their social connections to maintain or improve their high social status. Coleman (1994) links sociology and economics by examining the link between social capital and human capital. Social capital is a resource that is made available through social relationships and is complementary with human capital. Coleman (1988) uses these concepts to examine high school drop out rates. Putnam (2000) is credited with making the concept of social capital popular outside of academia. Putnam (2000) uses the concept of social capital to refer to the connections between individuals and the networks, norms, and trust that arise from those connections. Putnam (2000) discusses the disengagement occurring in America between individuals, families, and their community. To do this, he focuses on a very specific behavior of social capital, namely traditional organization membership. More generally, social capital is a networking process that translates into an individual's effectiveness in the community and workplace, and a resource that ties communities together. As will be demonstrated in Section "Social Capital: Theory, Quality of life, and Measurement," this in turn is directly linked to an improved quality of life.

Although overly simplistic, Bordieu and Coleman view social capital as a resource that enables individuals to better themselves, either socially or professionally. Putnam, in contrast, views social capital as a resource that functions at the level of the community and society. Putnam claims that social capital is declining in America and that Americans have been "pulled apart from one another and our communities" (Putnam, 2000: 27). It is Putnam's view of social capital that is employed in this paper. In particular, this paper examines the impact that the introduction of casino gambling has on the social capital of a community. On the one hand, casinos are often a controversial and divisive issue that may erode social capital. On the other hand, gambling can be a social activity, thereby bringing members of the community together and enhancing social capital.

The next section of this paper provides a brief overview of the spread of casino gambling in the United States. Since Putnam's approach to social capital is important to the development of this paper, Section "Social Capital: Theory, Quality of life, and Measurement," provides a brief, but more in-depth, review of Putnam's work on social capital. Section "Social Capital: Theory, Quality of life, and

Measurement,” also reviews the connection between social capital and quality of life, and describes the data and the creation of the social capital index. Section “Social Capital Regression Model,” presents the basic statistical model. Section “Results,” provides results, while the last section offers concluding thoughts and ideas for future research.

GAMBLING OVERVIEW

Today, gambling is a major form of entertainment that is widespread throughout the United States. America’s experience with gambling has been one of acceptance and prohibition. Lotteries were used historically to fund the American colonies and ensuing public projects. However, because of a massive corruption scandal in the Louisiana lottery, gambling was made illegal in the 1880s. Casino gambling was legalized in Nevada in 1931, which maintained a monopoly until New Jersey legalized gambling in 1976 for Atlantic City. Interestingly, lotteries did not appear again until 1964 when New Hampshire reestablished a state lottery. In 2004, 48 states, excluding Hawaii and Utah, have some form of legal gambling. This includes pari-mutuel betting (40 states), racetrack casinos (six states), lotteries (37 states), Indian casinos (23 Class III (i.e., casino) states and five other states with less extensive gaming), and conventional casinos (11 states). An era of acceptance has clearly returned.

New Jersey approved a referendum legalizing gambling as the economic development tool to reverse the decay of Atlantic City. Many states have used this economic development theme or revenue enhancement generation to justify the legalization of gambling. Under the guise of economic development, gambling has appeared to change from a ‘sin’ activity to a business sector that spans the country. Gambling has become a major form of entertainment with gross revenues in 2002 exceeding 68 billion dollars annually, with 28 billion of that coming from casinos (Christiansen, 2002).

The costs and benefits of the spread of casino gambling are debatable and very controversial. The National Opinion Research Center (NORC, 1999) performed a landmark study and found that for communities proximate to newly opened casinos, per capita rates of bankruptcy, health indicators, and violent crimes are

not significantly changed. Unemployment rates, welfare outlays, and unemployment insurance in such communities decline by about one seventh. Construction, hospitality, transportation, recreation and amusement earnings rise, but bar, restaurant, and general merchandise earnings fall. Per capita income stays the same, indicating the communities reap more jobs, but not necessarily better jobs. There appears to be more of a shift in the types and locations of work than a net improvement in the local standard of living.

While the impact of casinos on social capital has received little if any attention, some studies have examined the overall effect of casinos on a community as a place to live. For example, Pizam and Pokela (1985) used survey data to determine the perceived impact that a casino would have on two towns in Massachusetts. Approximately 50% of the community perceived that the character of their town would worsen, compared to 32% who thought it would improve. Long (1996) also used survey data to compare four rural communities in Colorado with a control community. While residents perceived positive economic impacts, the percentage disagreeing that the community was an ideal place to live was noticeably larger in the casino community relative to the control. Room et al. (1999) surveyed residents in Niagara Falls, Canada both before and after the casino opened. In general, the effects of the casino were less pronounced than anticipated. For example, before the casino opened, 28% agreed that residents would move because of the casino; after the casino opened only 16% agreed, a significant drop. Nichols et al. (2002) also used survey data to determine the impact of casinos on quality of life in eight new casino jurisdictions and found a very negligible impact, with casinos neither greatly increasing or decreasing quality of life nor the community as a place to live.

SOCIAL CAPITAL: THEORY, QUALITY OF LIFE, AND MEASUREMENT

Reviewing the theory of social capital is a daunting task, particularly given its various interpretations and applications. As mentioned in the Introduction, this paper uses the interpretation of social capital espoused by Putnam (2000), namely that it is a community resource, the presence of which improves the quality of life in a community.

For this reason, a brief review of Putnam's theory and measurement of social capital is provided, followed by a discussion of the connection between social capital and quality of life and the creation of the social capital index.

Putnam (2000) presents a theory of the civic disengagement occurring in America between individuals, their families, and extending into their communities. Putnam presents the concept of disengagement by beginning with a very specific definition of social capital: traditional organizational membership. People participating in organized clubs have connections with other people that are based on reciprocity and the prospect of future benefits or the establishment of trustworthiness within those connections. Putnam combined organizational membership with civic virtue to demonstrate that civic engagement is more powerful when combined with the network of reciprocal social relations. Such interactions help people to build communities, make commitments to each other, and build a social fabric benefiting many people.

Putnam establishes three main areas important to building social capital: civic engagement, informal social engagement, and tolerance combined with trust. Civic engagement (including politics) is exemplified through voting, political knowledge, trust, and the simple act of joining and being regularly involved in organized groups. This membership action has a very significant impact on individual health and well-being. Joining a group expands the individual's social consciousness and encourages the reduction of distance (or disengagement) from family, friends and communities. Putnam provides data showing organizational membership declined 30–40% over the last three decades. This decline is a symptom of people separating or disengaging themselves from supporting their communities and local institutions through various club activities.

Informal social engagement is the part of civil society that broadly refers to ongoing interactions between individuals and groups taking place in an environment that is purely neither individual, commercial, nor governmental. Informal social engagement is a longstanding benefit from associations. The improved quality of life from associations further enhances the development of social networks. The strength of these networks, and the relationships of trust and tolerance that is usually involved, strengthens democracy. Associations help establish a dialogue, thereby creating an environment where

people can work together. This informally structured process is the heart of what is required to strengthen and develop social capital. The ethical position also demands that associations attend to the political downside of networks, in particular, to circumvent occurrences when these networks can be oppressive and too narrow in focus. Working toward a focus of tolerance and the acceptance of diversity is required. As with civic engagements, there is also a decline (or disengagement) from informal society. For example, people participate less in the informal social ties of entertaining friends at home.

Trust is generated from rational behavioral expectations between trading and social partners. Trust cannot function without a healthy civil society built upon a trust-based approach to the interactions between institutions and the population. Tolerance and trust combine to build a smooth functioning society in which diversity enhances growth and success.

The engagement of America's citizenry appears to be waning through time and generational characteristics appear to be reflected in a neighborhood's social life. Examination of civic structures and policies throughout history reveals a generational cycle of decline and then resurgence. According to Putnam, the decline in social capital over the past 40 years stems from women entering the workforce, the resulting change in the family structure toward singles or single parent families, lengthy commutes resulting from suburban sprawl, and loss of time in the home community. All these factors contribute to the disengagement process.

According to Putnam (2000), other factors contributing to disengagement are the development of mass media, TV, and the Internet, which have taken people away from social interactions with other people. As support for this generational cycle change, Putnam claims that America has had a "long civic generation" that is now passing on. This generation survived the Great Depression and built a new civic foundation from the 1930s, defended liberty in World War II, and developed the prosperity of the 1950s. The descendants of this generation did not have to participate in the struggles that built and maintained the informal and formal structures that helped bond this generation together. Consequently, disengagement is on the rise.

The resulting disconnect between the "long civic generation" and the younger generations is at the root of the break in trust and

tolerance, Putnam's third important ingredient for building social capital. The differences between these generations are demonstrated by one generation's cohesiveness through joining groups, clubs, and organizations, knowing their neighbors and participating in their town's governance, and the other generation's lack of interest in this process. If interactions with other people stimulate better health and well-being, then the disengagement of the younger generations is the root of the decline in social capital. To reverse this decline there must be a building of informal associations among the various people of a community to help build the bridges supporting important formal functions such as education and structured activities.

Putnam has presented ideas that resonate with many people, resulting in more scholarly inquiry than is usual for this type of work. His argument will no doubt be disputed over the coming years. For example, Sobel (2002) notes that Putnam neglects more important sources of involvement for a younger generation, such as internet chat rooms and email, focusing instead on more traditional avenues of civic engagement. Nevertheless, his central message is strong: Interaction enables people to build communities, to commit themselves to each other, and to knit the social fabric. In turn, this enhancement of social capital improves the quality of life, as demonstrated in the following section.

Social Capital and Quality of Life

Social capital has been linked to improved quality of life both indirectly, by increasing income or education, and directly by itself. For example, Knack and Keefer (1997) and Putnam (1993) found a link between social capital and gross domestic product. However, the connection between income and happiness or well-being is not clear. Easterlin (1995) found no link between happiness and income in a sample of higher-income countries, whereas Inglehart and Klingemann (2000) and Bjørnskov (2003) found the opposite when extending the sample to lower income countries.

While most studies include measures of income or wealth when analyzing quality of life, it is now recognized that other determinants, including social capital itself, are also important. Berger-Schmitt (2002) notes that in many European countries the goal of societal development has been expanded beyond wealth to include

the concept of quality of life more generally. Common determinants of quality of life are emotional well being, health, social and family connections (i.e., social capital), and productivity in work or some other activity (Cummins, 1996). Indeed, as will be shown below, many studies find these other factors to be more important determinants of quality of life than income or other socio-demographic variables.

Several studies support the existence of a direct link between social capital and quality of life. Bowling et al. (2002) examined the quality of life of elderly British citizens and found that social capital was a key determinant. This included personal social capital (number of social contacts, number of social activities, and loneliness) and neighborhood social capital (quality of the area and safety of the area). In fact, Bowling et al. (2002: 361) note that “selective subjective variables, in contrast to objective socio-economic indicators, were directly and strongly linked with self-ratings of quality of life.” Bowling and Gabriel (2003) extended and corroborated this study by conducting a survey with open-ended questions and face-to-face interviews. Social relationships were mentioned by 81% of the open-ended survey participants and 96% of the face-to-face participants as the “good things” that gave quality to life, a greater response than any other category.

The importance of social capital as a key determinant of quality of life is not limited to the elderly. Bjørnskov (2003) examined 32 countries in Europe, Asia, and the Americas and found that social capital improved life satisfaction. For lower-income countries, the improvement in quality of life was indirect, through the increase in income. In higher-income countries, in contrast, social capital had a direct impact on quality of life, independent of income growth and stability.

Numerous other studies confirm the connection between social capital and quality of life. Lang and Hornburg (1998) introduce several articles that demonstrate the importance of developing housing policies that promote social capital in order to improve the quality of life in low-income neighborhoods. Berger-Schmitt (2002) integrates social cohesion into the concept of quality of life, with social capital and equality noted as two important components of social cohesion. Finally, Helliwell (2001: 44) provides an excellent overview of other literature, confirming that “the direct

linkages from social capital to well-being are, if anything, better documented and likely to be of greater theoretical and empirical significance.”

The above overview demonstrates the importance of social capital in determining quality of life. Anything that changes social capital will in turn change quality of life. Before examining the impact that casino gambling has had on social capital, let us first examine how social capital is measured.

Measuring Social Capital

The original concept of a social capital index was developed by Putnam using several databases, one of which is the DDB Needham data set, a description of peoples' behavior patterns relative to family, friends, and community. The DDB Needham survey has been conducted annually since 1975 under commission by DDB Needham marketing agency to Market Facts, a national polling firm. DDB Needham's database supplies information on trends in social behavior based on a national panel of American households since 1974. Market Facts uses a combination of name and address lists to determine survey candidates and randomly draws a selection of people to receive the surveys by mail. The response rate is at the 70–80% level. Putnam's 14 indicators comprising social capital, six of which come from the DDB Needham Life Styles survey, are provided in Table I.

There are several social capital indices being built from survey data in several countries and organizations. The World Bank uses two tools for social capital measurement, the Social Capital Assessment Tool (SOCAT), and the Social Capital Integrated Questionnaire (SOCAP IQ). The office for National Statistics in the United Kingdom has a general household survey that is being used as a measurement tool. The Australian Bureau of Statistics is adding social capital characteristics to the Australian General Social Survey in 2002. In the United States, the Roper Center for Public Opinion Research conducted a 'Social Capital Benchmark Survey' in 2000. In New Zealand, the Foundation for Research, Science, and Technology funded a program to develop social capital measurement. Anne Spellerberg of Statistics New Zealand (2001) published a report detailing the process in March 2001.

TABLE I

The Fourteen Indicators Comprising Putnam's Social Capital Index

<i>Measures of community organizational life</i>
Served on a committee of local organization in last year (percent)
Served as officer of some club or organization in last year (percent)
Civic and social organization per 1000 population
Mean number of club meetings attended in last year
Mean number of group memberships
<i>Measures of engagement in public affairs</i>
Turnout in presidential elections, 1988 and 1992
Attended public meeting on town or school affairs in last year (percent)
<i>Measures of community volunteerism</i>
Number of nonprofit (501©) organizations per 1000 population
Mean number of times worked on community project in the last year
Mean number of times did volunteer work last year in last year
<i>Measures of informal sociability</i>
Agree that "I spend a lot of time visiting friends"
Mean number of times entertained at home last year
<i>Measures of social trust</i>
Agree that "most people can be trusted"
Agree that "most people are honest"

Common features in all these studies are levels of giving, participation and engagement, reciprocity within the community, generalized trust, trust toward public officials and institutions, norms, attitudinal variables important to social capital, and confidence in the continuation of social and political relationships. Specific examples are when people give without expectation of immediate reward, belief that an individual can depend upon their community in a time of need, individual's beliefs about themselves and their tolerance of others, motivations and fears, and confidence in the future.

The Statistics New Zealand (SNZ) model for measuring social capital distills all of this information into four main categories. The first component of the framework describes people's behavior, such as giving to strangers, participating in voluntary organizations, participating in informal networks, wider interests in society, community participation at local and national levels, and compliance with rules and norms that support the formation and maintenance of social capital. The second component describes attitudes and values, such as beliefs about self, attitudes toward others, trust and reciprocity,

attitudes toward government and other societal institutions, values and norms that support the development of social capital, and outlook for and confidence in the future. The third component is population groups, using demographics, family types, cultural basis for networks, employment and income, and level of communication abilities. The fourth component describes the characteristics of organizations, such as number in the community, type, size of membership, structure, links, and networks. For each of these four components, the report describes specific types of information that would be applicable, organized by either individual activity or opportunities.

Spellerberg (2001: 26) then goes on to note that “to date, no specifically-focused, wide-coverage data on social capital has been gathered in New Zealand. Until it is, the main elements can only be estimated...using availability of information from existing sources as a key factor in deciding priorities. A proposed list could be as follows: Trust, Civic Engagement, Voluntary Activity, Participation, Giving, and Meeting Obligations.” Organizing these around individual activity (what people do and how they behave), Spellerberg (2001: 26) proposes the following categorization:

1. *Trust* – both personal and generalized.
2. *Civic engagement* – voting and participating in community leadership.
3. *Participation* – clubs rather than social service activity.
4. *Voluntary activity* – formal and informal situations.
5. *Giving* – time, money, blood, information.
6. *Meeting obligations* – Family, cultural, religious obligations, paying taxes.

This study uses the DDB Needham database questions for the years 1978, 1988, and 1998 to estimate numerical values for these six categories, which have also been shown to be relevant by Putnam (2000), Knack and Keefer (1997), and Grootaert (1997), among others. For the survey questions, answers ranged from one to seven, in order of frequency, with one being no frequency and seven meaning 52 or more times a year. Other answers range from definitely disagree to definitely agree. Some questions reflect positive attributes (e.g., gave or attended a dinner party), while others represent negative attributes (e.g., told a lie). Negative attribute questions have been recoded to be consistent with those referring to positive attributes. Therefore, for each question, larger numbers represent positive attributes (e.g., gave more dinner parties, told fewer lies).

As described in more detail below, survey questions are grouped by year and Metropolitan Statistical Area (MSA) into one of the above categories. The responses to these questions are then averaged to calculate a value for each category. The social capital index is then calculated by averaging the values of these six categories.

The following outlines the criteria used by SNZ to create a social capital index and the specific questions drawn from the DDB Needham data base used to proxy these categories for this study. Table II provides basic descriptive statistics for each category by year.

Trust

The first category is Trust and it can be personal or generalized trust. Generalities about trust are listed below and the selected questions from the DDB Needham Life Style survey follow. The following concepts about self and others are from the SNZ suggested breakout of attitudes and values.

About Self:

1. How one views one's place in society.
2. How one feels valued by society.
3. Whether you would feel missed if you were missing or dead.
4. Whether you feel angry or depressed.
5. Whether you think life is meaningful.
6. Whether you feel connected to other people or lonely and isolated.
7. Perceived ability to change personal life situation.
8. Perceived ability to influence politics or make claims on officials.

About others:

1. Does everyone have an equal value.
2. Does society need to care for people who cannot look after themselves.
3. Whether you would help a stranger.
4. Opinion on a range of social and political activities.
5. Tolerance towards outsiders.
6. Tolerance toward marginalized people.
7. Enjoyment of living among diversified population.
8. Fears of diversity of people.
9. Would you cheat on your taxes.

Trust and reciprocity:

1. Trust in other people, including strangers.
2. Belief about whether people would try to take advantage of others if they got the chance.

3. Whether you feel safe in your local area.
4. Optimism about others' motivation.
5. Whether you see any personal advantage in cheating.
6. Whether you have a positive outlook for the future.
7. Goals for the future.
8. Expectation of achievement of goals.

The following questions are selected from the DDB Needham database to generate the Trust category using the SNZ criteria. Frequency questions are noted as such. Remaining questions reflect various degrees of agreement or disagreement.

Gave or Attended a Dinner Party (freq last 12 months).
 Entertained people in my home (freq last 12 months).
 My greatest achievements are still ahead of me.
 My friends and neighbors often come to me for advice about products & brands.
 I often seek out the advice of my friends regarding brands and products.
 I'm much happier now than I ever was.
 Most people are honest.
 Men are smarter than women.
 Five years from now our family income will probably be a lot higher than it is now.
 I will probably have more money to spend next year than I have now.
 My days seem to follow a definite routine.
 I am very satisfied with the way things are going in my life these days.
 Told a lie (freq last 12 months)
 Most big companies are just out for themselves.
 I don't like to take chances.
 Everything is changing too fast today.
 I would do better than average in a fist fight.
 There should be a gun in every home.
 I often wish for the good old days.
 Sometimes I feel that I don't have enough control over the direction my life is taking.
 My opinions on things don't count very much 12 months.
 Changes in routine disturb me.

The average of these questions is taken by year and MSA to generate a value for the Trust category. The mean and standard deviation for the Trust category, by year, is given in Table II. Trust increases from 1978 to 1998 after a decrease in 1988.

Civic

Civic generalities and attributes are listed below followed by the selected questions from the DDB Needham Life Style survey. The following concepts about attitudes toward government and other

TABLE II
Social Capital and Sub Categories: Mean and Standard Deviation

Year	Social Capital Index	Trust	Civic	Volunteer	Group Part.	Giving	Family/ Friends/ Meeting Obligations
1978 (<i>n</i> = 254)	3.84 (0.279)	4.47 (0.307)	4.79 (0.300)	2.25 (1.043)	3.11 (0.384)	3.58 (0.476)	4.83 (0.328)
1988 (<i>n</i> = 310)	3.79 (0.283)	4.40 (0.291)	4.76 (0.259)	2.30 (1.068)	2.88 (0.321)	3.64 (0.476)	4.78 (0.276)
1998 (<i>n</i> = 320)	3.69 (0.280)	4.49 (0.286)	4.41 (0.256)	2.40 (1.083)	2.95 (0.342)	3.42 (0.403)	4.48 (0.344)

Standard Deviations in parentheses.

n = number of MSAs.

societal institutions are from the SNZ suggested breakout of attitudes and values.

Measures of who pays attention to what is going on in the world (particularly in their own community):

1. Reading local (and national) newspapers.
2. Being aware of who runs the local council and higher level elected officials.
3. Knowing how the country is governed.
4. Discussing who to vote for.
5. Voting in local and national elections.
6. Listening to or watching the news on radio or television.

Attitudes to government and other societal institutions:

1. Confidence in elected officials.
2. A belief that politicians are interested in people's welfare.
3. A belief that governmental officials care about public interests.
4. Trust in the judicial system.
5. Opinion of the education system.
6. Faith in the health system.
7. Confidence in the freedom to speak out in opposition to an established norm or opinion.

The following questions are selected from the DDB Needham database to generate the Civic category using the SNZ criteria.

- Attended amateur or college athletic event (freq last 12 months).
- Went to a classical concert (freq last 12 months).
- Worked on a community project (freq last 12 months).
- Went out to dinner at a restaurant (freq last 12 months).
- Worked in the garden (freq last 12 months).
- Attended a lecture (freq last 12 months).
- Wrote a letter to an editor of a magazine or newspaper (freq last 12 months).
- Went to a library (freq last 12 months).
- Went to a pop or rock concert (freq last 12 months).
- Attended school (freq last 12 months).
- Worked on a do-it-yourself project around the house (freq last 12 months).
- Gave a speech (freq last 12 months).
- Visited an art gallery or museum (freq last 12 months).
- The government should restrict imported products.
- Public high schools should be allowed to distribute condoms to students.
- I am in favor of the death penalty.
- I am in favor of very strict enforcement of all laws.
- I am influential in my neighborhood.
- I like to be considered a leader.
- I need to get the news (world, national, sports, etc.) everyday.
- I am interested in politics.
- I support pollution standards even if it means shutting down some factories.

I would be content to live in the same town the rest of my life.

Smoking should not be allowed in public places.

Education Level.

Gave 'the finger' to someone while driving my car (freq last 12 months).

Flashed my lights at another motorist when annoyed with his or her behavior (freq last 12 months).

No matter how fast our income goes up we never seem to get ahead.

I would rather live in or near a big city than in or near a small town.

Children cannot get a good education in schools today.

It is hard to get a good job these days.

The government should exercise more control over what is shown on TV.

An honest man cannot get elected to high office.

I believe prices will go up more in the next 5 years than they did in the last 5 years.

I have little faith in the criminal justice system.

I would rather live in the city than in the suburbs.

Police should use whatever force is necessary to maintain law and order.

Saving for the future is a luxury I can't afford right now.

Most welfare recipients are lazy cheats.

We will probably move at least once in the next 5 years.

Table II provides descriptive statistics for the Civic category. Civic indicators show a consistently decreasing trend over the three decades.

Volunteer

Putnam uses this specific category from the DDB Needham database as part of his social capital index. Measures of the tendency of people to give willingly to strangers include:

1. Time (volunteering).
2. Experience and expertise (voluntary advice).
3. Formal activities, officer positions in organizations.

The following question is chosen from the DDB Needham database to generate the Volunteer category using the SNZ criteria.

Did volunteer work (freq last 12 months).

Table II provides descriptive statistics for the Volunteer category, which shows a consistently increasing trend over the three decades.

Participation

Participation measures the social interactions people have with others through formal organizations. Putnam builds this indicator primarily on participation in horizontal associations. Knack and

Keefer (1997) pointed out the lack of an effect of horizontal associations when discussing the impact of trust and civic indicators on economic development. This study aims for a balance between different types of associational membership for this category. Selections are based on the SNZ criteria, including active memberships, which may be of a mandatory or volunteer basis, or any of the following type of groups:

1. Special interest or hobby club.
2. Service organization.
3. Trade Union.
4. Churches/places of worship.
5. Performing arts/cultural groups.
6. Schools.
7. Sports Club.

The following questions are selected from the DDB Needham database to generate the Participation category using the SNZ criteria.

- Went bowling (freq last 12 months).
- Went out to breakfast at a restaurant (freq last 12 Months), breakfast meetings.
- Went camping (freq last 12 months).
- Played cards (freq last 12 months).
- Attended church or other place of worship (freq last 12 months).
- Attended a class or seminar (freq last 12 months).
- Went to a club meeting (freq last 12 months).
- Went to an exercise class (freq last 12 months).
- Played golf (freq last 12 months).
- Went to a health club (freq last 12 months).
- Went out to lunch at a restaurant (freq last 12 months).
- Played softball (freq last 12 months).
- Attended a sporting event (freq last 12 months).
- Played a team sport (basketball, softball, volleyball, etc.)(freq last 12 months).
- Played Volleyball (freq last 12 months).
- Played tennis (freq last 12 months).
- Religion is an important part of my life.
- Unions have too much power in America today.
- Brought work home (freq last 12 months).
- Stayed late at work (freq last 12 months).
- I guess I'm what you would call a 'couch potato'.
- I would rather spend a quiet evening at home than go out to a party.
- I would rather spend a quiet evening at home.
- Television is my primary form of entertainment.

Table II shows that the participation category decreases from 1978 to 1998, although there is a slight increase from 1988 to 1998.

Giving

Measures of giving include:

1. Social service activity.
2. Giving time, money, blood, information.

The following questions are selected from the DDB Needham database to generate the Giving category using the SNZ criteria.

- Bought a toy, game, or puzzle for an adult (freq last 12 months).
- Sent a greeting card in honor of an event in someone's life (anniversary, birthdays, etc.)(freq last 12 months).
- Sent a greeting card on a holiday (Christmas, Mother's Day, etc.)(freq last 12 months).
- Sent a greeting card on no special occasion (just to keep in touch, say hello etc.)(freq last 12 months).
- Contributed to an environmental or conservation organization (freq last 12 months).
- Sent a greeting card (freq last 12 months).
- Went on a picnic (freq last 12 months).
- Collected things for recycling (freq last 12 months).
- I like to cook.
- I make a strong effort to recycle everything.
- I feel like I'm so busy trying to make everybody else happy that I don't have control of my own life.
- I feel I am under a great deal of pressure most of the time.

Table II reveals that the Giving category decreases between 1978 and 1998 but increases in 1988, a presidential election year.

Family and Friends, Meeting Obligations

Measures of the relationships and interactions people have with others on an informal basis include:

1. Contact with neighbors.
2. Extent of borrowing from neighbors, family or friends.
3. Doing favors for sick neighbors or friends.
4. Frequency of socializing with friends or fellow workers.
5. Tendency to discuss personal problems with friends.
6. Tendency to discuss political topics with friends.
7. Looking after a child or someone who is ill or has a disability.

The following questions are selected from the DDB Needham database to generate the Family and Friends category using the SNZ criteria.

- Wrote a letter to a friend or relative (freq last 12 months).
- Made long-distance call from home (freq last 12 months).

Visited relatives (freq last 12 months).

Children are the most important thing in a marriage.

Our family income is high enough to satisfy nearly all our important desires.

We usually have a large family breakfast on weekends.

When making important family decisions, considerations of the children should come first.

Our whole family usually eats dinner together.

Couples should live together before getting married.

I spend a lot of time visiting friends.

A Women's place is in the home.

Commute times.

I worry a lot about myself or a family member becoming a victim of crime.

It seems as though everyone in our family is always on the run.

I am in favor of legalizing same sex marriage.

Table II shows that the Family and Friends and Meeting Obligations category decreases significantly from 1978 to 1998.

Social Capital

The social capital index is the average, by year and MSA, of the six categories described above. The index has a potential range of one (low social capital) to seven (high social capital). Table II gives the mean and standard deviation for the social capital index by year. For brevity, a table providing the individual MSA rankings is not given. However, the MSA with the highest social capital is Rapid City, South Dakota. South Dakota is also second in social capital at the state level and is in the region that ranks highest in social capital for the country. Of interest are the entries at the bottom of the social capital index: fourth from the bottom is Atlantic-Cape May, New Jersey, third is Yuma, Arizona, second is Dothan, Alabama, and the lowest is Yarmouth-Barnstable, Massachusetts. Interestingly, Rapid City, Atlantic-Cape May, and Yuma all have gambling. A major difference between Rapid City and the other two MSAs is that the gambling near Rapid City (Deadwood) is highly regulated, restricted, and at a greater distance (25 miles), whereas Atlantic/Cape May and Yuma have gambling in the immediate proximity.

Consistent with Putnam (2000), Table II shows that social capital is decreasing over time, but not in all sub categories. The greatest variability occurs in the family, friends, and meeting obligations sub-category, followed by group participation and civic, a major point made by Putnam.

SOCIAL CAPITAL REGRESSION MODEL

The model used in this study is based upon the model from the National Opinion Research Center (NORC) study on gaming. All communities are evaluated for casino style gambling within 50 miles. The statistical model seeks to isolate the effects of casino gambling proximity by comparing social capital in communities (MSA's) with and without a nearby casino using data from the years, 1978, 1988 and 1998. These years were chosen for three primary reasons: one, the ten year time span covers three decades, a period of sufficient time to capture changing social capital; two, 1988 is the last year that casinos existed only in Nevada and New Jersey, and is when Congress passed the Indian Gaming Regulatory Act, leading to the expansion of Indian casinos across the United States; three, 1998 is the last year the DDB Needham data base is publicly available (www.bowling-alone.com), thereby providing the greatest length of time for casinos to be present near or in a community.

The purpose of this paper is to determine what impact, if any, casino gambling has on a community's social capital. To do this, the following model is estimated:

$$SC_{j,t} = \alpha + \alpha_j MSA_j + \sum_{78}^{98} \lambda_t Y_t + \beta Gamb_{j,t} + \varepsilon_{j,t}. \quad (1)$$

In Equation (1) above, $SC_{j,t}$ denotes social capital for community j in year t . Again, social capital is calculated as the average of the six categories described above, which in turn are generated by averaging responses to the DDB Needham survey questions, also given above. MSA_j is a community specific intercept that will allow for variation across communities and captures diverse unmeasured factors that differentiate the communities in the sample. Y_t denotes a year dummy, where Y_t equals one if the year is 1988 or 1998, with 1978 being the omitted category. $Gamb_j$ is a dummy variable that takes on the value one if community j has a casino nearby in year t , zero otherwise. To be counted as a casino, establishments had to have more than 30 slot machines or have both slot machines and table games. Bingo halls, card rooms, or establishments such as bars with only a small number of "video gaming machines" are not counted as casinos. This information, along with the number of miles between the

TABLE III

OLS Estimate of the Impact of Casino Proximity on Social Capital (MSA Level)

Variable	Coefficient
Casino	-0.554*(1.706)
Year 1988	-0.021 (0.874)
Year 1998	0.002 (0.076)
Constant	3.766*** (26.605)
MSA dummy variables	Yes
N	884
df	316
\bar{R}^2	0.149

Absolute value of t statistic in parentheses. A *, **, *** represents statistical significance at the 10%, 5%, and 1% level, respectively.

TABLE IV

Mean and Standard Deviation of Social Capital by Year and Casino Adoption*

Year	Casino communities	Non-casino communities	t-stat**
1978	3.723 (0.227)	3.782 (0.320)	-0.949
1988	3.737 (0.269)	3.775 (0.283)	-0.673
1998	3.809 (0.242)	3.776 (0.282)	0.748

*Casino Adoption implies the community has a casino within 15 miles between the years 1988 and 1998. Las Vegas and Reno, Nevada and Atlantic City, New Jersey are excluded.

**t statistic for difference between casino and non-casino communities.

MSA and casino, is gathered from CasinoFind (<http://maps2.casinocity.com/casinofind/>). ε_{jt} is a random variable assumed to be normally and independently distributed with a zero mean and constant variance.

RESULTS

Table III presents results from estimating Equation (1). Although the regression includes the complete set of MSA dummies, the coefficients (approximately 300 of them) are not reported to save space. Over

TABLE V

OLS Estimate of the Impact of Casino Proximity on Social Capital Components (MSA Level)

Variable	Trust	Civic	Participation	Volunteer	Giving	Family/friends
Casino	-0.475 (1.44)	-0.056 (0.14)	-0.634 (1.48)	-1.223 (0.99)	-0.015 (0.28)	-0.914** (2.09)
Year	0.043* (1.74)	-0.064** (2.13)	0.012 (0.37)	-0.016 (0.17)	-0.079** (2.01)	-0.039 (1.21)
Year	0.012 (0.49)	-0.004 (0.14)	0.025 (0.78)	-0.045 (0.48)	0.001 (0.03)	0.023 (0.70)
Constant	4.50*** (31.32)	4.630*** (26.13)	3.147*** (16.91)	2.05*** (3.80)	3.59*** (15.51)	4.690*** (24.72)
MSA dummy variables	Yes	Yes	Yes	Yes	Yes	Yes
\bar{R}^2	0.179	0.010	0.059	0.089	0.119	0.007

Absolute value of *t* statistic in parentheses.

A *, **, *** represents statistical significance at the 10%, 5%, and 1% level, respectively.

time, social capital has changed very little as demonstrated by the small and statistically insignificant coefficients on the year dummies.

Of most interest for this study is the negative and statistically significant (at the 10% level) impact of the casino variable. Here, casino proximity is defined as within 15 miles of an MSA. Holding community and year effects constant, the results suggest that having a casino within 15 miles of your community reduces the social capital index by 0.55, a sizeable change given the overall average of the social capital index is 3.77. However, when casino proximity is defined as greater than 15 miles from an MSA, this variable decreased in size and became statistically insignificant. This suggests that what may matter for a community's social capital is not gambling *per se*, but the location of that gambling.

While the above results suggest that casino gambling, or something associated with it, decreases social capital, it is possible that communities with lower social capital decide to adopt casino gambling. That is, it is not casinos that reduce social capital, but rather

low social capital that leads to casino adoption. To examine this possibility, social capital in gambling communities (i.e., those that had casino gambling within 15 miles) is compared to non-gambling communities (i.e., greater than 15 miles) for all 3 years under study. The idea is to determine whether casino communities had significantly lower social capital *before* they adopted casino gambling. Las Vegas and Reno, Nevada and Atlantic City, New Jersey are excluded from this analysis since gambling was present over the entire sample period. Table IV provides the results from this analysis. In 1978, the average social capital index for communities that later adopted casino gambling is 3.723 vs. 3.782 for communities that did not have gambling in or before 1998. Thus, while communities that adopted casinos initially had a lower level of social capital, the difference is not statistically significant ($t = -0.95$). Similarly, the 1988 social capital figures are 3.737 for casino adopters and 3.775 for MSA's without casinos. This difference is also statistically insignificant ($t = -0.67$). Therefore, there is no statistical difference in social capital between gambling and non-gambling communities prior to casino legalization, suggesting that, from a statistical standpoint, the reduction in social capital stems from casinos rather than casinos arising from low social capital. Interestingly, the mean level of social capital for gambling communities is rising and by 1998 is higher than non-gambling communities. However, this difference is also statistically insignificant ($t = 0.75$) and does not take into account the community specific differences captured in Equation (1) by the MSA dummies.

Finally, the various components that comprise the social capital index are separately analyzed. The regression analysis, provided in Table V, reveals that casino gambling is negatively associated with all components, but only the family and friends achieves statistical significance.

CONCLUSIONS AND POLICY IMPLICATIONS

This study has used the concept of social capital to analyze the effect of gambling upon the quality of life in a community. The results generally support the work of Putnam (2000) and others in that social capital is declining over time. Most importantly, casino gambling, or factors associated with it, exacerbates this decline. However, the

impact is limited geographically. In particular, there is a significant impact from a gambling establishment upon social capital within 15 miles of an MSA. Outside of this radius the impact, while negative, failed to achieve statistical significance. These results are consistent with Eadington (1986), who finds the impact of casinos is primarily felt by the immediate surrounding area.

The results from this study suggest that communities that decide to legalize casino gambling should carefully consider the location of a casino. While casinos located in urban areas may generate significant tax revenue and other economic benefits (e.g., jobs, tourism), they may also reduce social capital. Indeed, the results reveal the rationale for the “not in my backyard” attitude of many areas facing casino expansion – people fear that a casino in their neighborhood will reduce their quality of life.

Finally, while this study finds that casino gambling reduces social capital, future research would benefit from the inclusion of additional variables to distinguish better between gambling *per se* and factors associated with it, such as crowds and traffic. Would a large retail project (e.g., Wal Mart) have the same effect on social capital, or is there something unique about casinos? If so, what specifically is it about a casino that reduces social capital? Can regulation mitigate these factors? Going beyond the use of dummy variables to control for community differences would also be interesting. How much does the income or demographic makeup of a community matter? Comparisons with other countries would also be insightful to distinguish further between gambling and factors that might be specific to the United States. Of course, an exact measure of social capital does not exist. The definition employed here expanded on that put forth by Putnam based on the method used by Statistics New Zealand. Other definitions will no doubt lead to different results. The results from this paper, however, suggest that such inquiries are worth making.

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