Economic Impact of Casinos on Home Prices
Literature Survey and Issue Analysis
NAR Research

Introduction and Summary

This paper summarizes the key issues associated with casino gambling, focusing primarily on the impacts of casinos on home values. In general, externalities of congestion and other social costs appear to have a negative impact on home values in the immediate area of a casino. The other impacts from the introduction of casino gambling to a community generally vary, depending on population, urban/rural location, and mix of patrons. The literature on the economic impacts of casinos is voluminous; there continues to be substantial disagreement on the measurement of costs, benefits, and impacts from gaming.

The impact of any specific casino proposal appears to be strongly driven by site-specific conditions. Accordingly this paper outlines a number of important issues for consideration in evaluating the impact of a casino on housing and the community. The paper has been prepared in conjunction with the REALTOR® Association of Pioneer Valley and makes reference to the proposed casino for Springfield, Massachusetts. The conclusions are preliminary given ongoing disagreements concerning costs and benefits but do outline important issues for consideration in analyzing the desirability of a casino proposal.

As is the case with other types of commercial or industrial properties, the siting of a casino produces externalities producing positive and negative impacts on residential property values.[1] Las Vegas is reported as a clear case of destination casinos—a situation where casinos have brought long-term prosperity to an area. Some other cases of casinos with a lesser degree of success as destination casinos are reported in the gambling literature. However, the impact of casinos on the surrounding communities in many cases has been evaluated as minimal or negative--particularly when infrastructure and social costs are considered.

- Casinos are likely to have negative impacts on nearby home values. Commercial properties—such as casinos, shopping centers, and infrastructure projects-- can produce both positive and negative externalities. The positive externalities such as enhanced amenities and benefits need to be evaluated in relation to the negative externalities such as increased congestion, traffic, noise, etc. The overall impacts are site specific, generally negative near the casino.
- A casino drawing most of its patrons from outside the local area can have positive impacts on government tax revenues and the local economy. The key issue is whether a casino is similar to a restaurant (attracting money from the surrounding area by serving local patrons) or a factory (bringing in money from outside the local area by exporting products—in this case gaming services as a destination casino).

[1] Positive externalities add value not obtained by the agent creating them; for example, a casino could create a vibrant commercial district in a formerly economically depressed area—but the value created would accrue to the other commercial establishments rather than the casino operator. Negative externalities remove value from an area; for example, anti-social behavior by casino patrons would create social costs borne by the community but not by the casino operators.

- In the case of Springfield Massachusetts a significantly level of sustained patronage as a destination casino appears unlikely given the saturation of gaming venues in the New England and New York region (e.g., Foxwoods, Mohegan Sun, Twin River Casinos, Newport Grand Jai Alai, casino cruise ships, race tracks, possible additional casinos in New Hampshire and Connecticut, and a variety of other gambling opportunities).
- Indian casinos in very rural areas are frequently cited as generating significant local economic benefits, largely due to the depressed nature of the local economy. This has not generally been the case for urban casinos.
- Distances between casinos appear to be important. Casinos that are close to each other tend to split the available business, reducing profitability. There are a significant number of casinos relatively close to Springfield.
- Casinos generate jobs, but many of the jobs created by the introduction of a casino are reported to be minimal wage/low paying opportunities, with a few experienced gaming professionals filling the management positions.
- Major social costs are frequently mentioned as associated with casinos—e.g., increased bankruptcies, crime, traffic, and congestion among others. These costs are frequently excluded from cost/benefit evaluations due to measurement problems. The inclusion of the social costs along with possibly other negative externalities reduces the net level of economic benefits from a casino or may even turn them negative.
- The impact on home values appears to be unambiguously negative. In the case of Springfield a casino would appear to have a significant negative externalities/nuisance value. The impact of negative externalities can be very significant, ranging in the neighborhood of 4 to 10 percent as outlined in the report and Appendix.

The gambling industry is substantial in size. According to Mallach[2] in 2008 casinos were operated by 233 Indian tribes in 28 states generating nearly $26 billion in gross gambling revenues, based on information from the National Indian Gaming Association. In addition, 445 commercial casinos and 44 “racinos” (racetrack-based casinos) in 20 different states generated another $39 billion in gambling revenues, according to information from the American Gaming Association 2009.

All gambling is local, and the gambling literature cites a wide variety of economic outcomes and impacts from gambling that appear to vary from jurisdiction to jurisdiction depending on local and site-specific conditions. However, in general the impact of casinos on residential home prices in the vicinity of a casino appears to be negative. The impact on home prices needs to be factored into the evaluation of the impact of the establishment of a casino along with the potential positive impacts—job creation, higher local incomes, and the potential negative impacts—such as social costs and possible increases in crime—in arriving at an overall evaluation of the economic impacts of a proposed casino.

We estimate that assessed home values will most likely be negatively impacted by $64 to $128 million from the introduction of a casino into Springfield, although there are many variables that could shift the price impact to be either more or less severe. In addition, pathological gambling could result in social costs of $8.4 million per year, possibly significantly

[2] Alan Mallach, “Economic and Social Impact of Introducing Casino Gambling: A Review and Assessment of the Literature,” *Discussion Paper*, Federal Reserve Bank of Philadelphia, March 2010.

higher. Additional foreclosures could produce costs of $5 million per year. Finally, there would probably be a negative impact on local retail businesses as local consumer expenditures were diverted to some degree to casino gaming, and a need for additional government expenditures to provide needed public services (police, fire, medical, etc.).

Economic Models—Useful for Measuring Impacts[3]

Economists use a variety of economic models in evaluating the economic impacts of casinos.

- Input-Output models can measure economic impacts on a regional or local basis—for example, the impact on incomes, employment, and the level of housing prices from the location of a casino.

- Multiple regression analyses are used to estimate the relationships between key variables, e.g., home prices, home characteristics, and site specific characteristics—such as the distance from a casino.   When appraising real estate, professionals typically use "comps" as references in determining value. The regression approach is a mathematical version of weighing the importance of the underlying factors determining value. In comparison to input-output analysis at the county or MSA level, multiple regression models permit a finer-grain measurement of economic impacts at the site-specific level. This is a key difference.

The differences between the two modeling approaches are important when considering the casino impact on home prices. For example, increased prosperity and rising incomes generated by the arrival of a casino in an area may result in higher home prices in a rural area. This is a phenomenon that can be captured through input-output models, which measure the way in which increased money flowing into a region subsequently expands the local economy. However, higher home prices in a county can occur even though home prices in a specific area near the casino are negatively impacted. This is the type of phenomenon which can be measured through multiple regression analysis based on the relationship between home prices, distance from the casino, and other relevant data.

Accordingly, in performing an analysis it is important to understand the structure of the underlying economic model and what is being measured—i.e., effects on a general economic area or impacts based on site-specific evaluations.

Economic studies are also heavily influenced by their underlying assumptions. For example, analyses at the county, state, or regional levels may yield different conclusions—simply a function of the area analyzed. In addition, analyses by type of activity can yield different conclusions: the impact of an Indian casino may be entirely different from that of a riverboat or commercial casino depending on location relative to population centers and other gambling options. The type of patron is important—whether local (recycling local money) or from outside the region (bringing in new money). Finally, the type of location may impact the conclusions: urban areas have economies that are very different from rural areas.

[3] Several types of models can be used to measure the impact of casino gambling on the local economy, based on the underlying relationships of the various parts of the economy.

The Impact of a Casino on Home Prices in the Vicinity of the Casino is Generally Negative.

Site-specific studies show the negative impact of casinos on home prices. The studies work with a variety of databases, using several types of approaches including input/output models and econometric analyses.

Henderson, Nevada: Clauretie *et. al.* analyzed the effects that the location of casinos has had on residential property values in Henderson, Nevada, a town located approximately ten miles from the Las Vegas "strip".[4] The town has a variety of gaming establishments of various sizes located close to residential areas, varying from taverns with a few slot machines to large casinos with live table games. The patrons of the suburban casinos are generally area residents rather than tourists. Many of the gaming facilities are located in close proximity to residential developments. The authors used home price transaction information to estimate the effect that casinos have had on residential home values.

- A price/distance regression analysis examined the impact on home values from the siting of a casino, allowing for variables such as distance from the casino, and physical and neighborhood characteristics.

The study found that casinos were a nuisance that negatively impacted nearby residential properties within one mile. In the case of large casinos, the value of each home fell by 4.6%.[5] In illustrating the impact of a casino, the authors estimated that with 400 residential properties located within a mile of a proposed casino with an average value of $200,000, a large casino would have a possible negative aggregate impact of $3.7 million, exclusive of any other costs or benefits typically cited in conjunction with the siting of a casino. They noted that the "lights, noise, and traffic that accompany casino operations" were a negative associated with casino operations. For a somewhat larger city, such as Springfield, the immediate negative impact would probably be larger.

Indian Casinos, Nationwide: Baxandall and Sacerdote[6] used a database covering 365 Indian casinos located in 156 different counties in 26 separate states to examine the county-level impacts of an Indian-owned casino. One problem with the study was that the level of analysis was at the county rather than the Census tract level, so they obtained mixed conclusions. Median home prices in counties with casinos were approximately 2 percent higher than those in non-casino counties. However, this effect appears to have been bifurcated by county size. Casinos appear to have brought increased prosperity to low-population, rural counties, resulting in home price increases—probably due to rising incomes in depressed areas. However, in comparisons

[4] Terrence M. Clauretie, Thomas M. Carroll, Nasser Daneshvary, "Rolling the Dice: Would Casinos Harm Illinois Home Values?" *Illinois Real Estate Letter*, Winter 1998, pages 7-9.

[5] Casino size (Small vs. Large) was defined by a 100 slot machine demarcation; for small casinos, home values fell by 3.27 percent.

[6] Phineas Baxandall, Bruce Sacderdote, "Betting on the Future: The Economic Impact of Legalized Gambling," Policy *Brief*, Rappaport Institute for Greater Boston, 2005.

among high-population/urban counties with and without casinos, the authors found no difference in home price changes. Recognizing the level of negative ambience around a casino, this would seem to imply a negative price impact of a casino on nearby properties.

Indiana Riverboat Casinos: Landers presented regression estimates of changes in housing values around Indiana's ten riverboat casinos.[7] The data used covered the time period 1990 to 2000, with comparisons focused on the differences between census tracts with and without casinos. He concluded that casinos had a negative impact on the annual growth rates in housing values during the 1990s in the range of .5 to 2.1 percent. Even under circumstances of an extremely tight housing supply, the negative price impacts of casinos were not eliminated.

Nationwide Analysis: Michael Wenz performed an econometric analysis of the net impact of casinos on residential property values, using data on 358 casinos operating in 28 states, excluding Nevada.[8] The study was subject to several limitations, which raise questions about the accuracy of the conclusions. First, the home price variable was based on respondents' estimates of how much the property would sell for if it were for sale; whether a homeowner can accurately estimate the market is debatable. Second, Wenz noted that there is substantial heterogeneity across casinos, markets and local economies, indicating that some of the estimates may have been due to market differences.

According to Wenz, there was a positive 2 percent effect on house values for homes in the area of a casino, and positive spillover effects to neighboring in-state regions. He noted that

> "A particularly important finding for policy makers is that the benefits associated with a casino depend inversely on population density. Casinos are more likely to create net benefits in areas where population density is low."

In the case of low density areas it appears based on the Wenz study that gambling has brought prosperity, rising incomes, and possibly higher home prices. Wenz has noted the inapplicability of the conclusion to urban areas. Accordingly, the Wenz study seems more relevant to the impacts on incomes in rural areas (gaming appears to have a positive impact where not a lot else is happening and day trippers are bringing some money) rather than the impact of gaming on home prices.

Foxwoods Resort Casino: Carsteensen *et.al*. reported that the Foxwoods Resort Casino has had a positive impact on property values. [9] The analysis of the impact of the Foxwoods Resort Casino in Connecticut on property values in adjacent towns (Ledyard, North Stonington, Preston) was determined by comparing the housing price trends in the towns with the trend in a broader geographic area (Hartford Labor Market Area--LMA). In comparing growth rates in home prices over the time period 1990-1999 for properties sold in the three towns adjacent to

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7 James. R. Landers, "Analyzing Local Housing Values to Assess the Economic Development Effects of Midwestern Casinos," *National Tax Association, Proceedings of the Annual Conference on Taxation, 2004.*

8 Michael Wenz, "The Impact of Casino Gambling on Housing Markets: A Hedonic Approach," *Journal of Gambling Business and Economics, 2007.*

9 Fred Carstensen, William Lott, Stan McMillen, Bobur Alimov, Na Li Dawson, Tapas Ray, *The Economic Impact of the Mashantucket Pequot Tribal Nation Operations on Connecticut,* Connecticut Center for Economic Analysis, November 2000.

Foxwoods in comparison to growth rates in the Hartford LMA, the properties adjacent to Foxwoods experienced a sales price growth rate that averaged 0.57% annually, compared to a negative 1.16% annual growth rate for the Hartford LMA during the same time period. The use of area level rather than census tract level data shows the impact of a casino on incomes more than on housing prices.

Foxwoods is frequently cited as a major success story for the introduction of gaming operations in a rural area. It appears that as local employment and incomes increased, so did home values. However, the impact on home values prices was for the area; the analysis does not measure the impact on home prices based on location relative to the casino.[10] The Foxwoods luster has now dimmed. Slot machine play has been off 12 percent year over year, and the casino management warned of impending layoffs in March 2013. The focus has been on debt restructuring and reorganization. Foxwoods appears to have suffered from a slow economy, an increase in the number of available casinos, and financial problems.

Windsor, Ontario in the 1990s was an economically depressed area: a city of 200,000 people with population growth below the Canadian average and an unemployment rate 3 percent above average. Chadwick Jeffery examined home price behavior resulting from the announcement of the proposed development of a casino.[11] Prices fell for approximately one year near the proposed casino site after announcement of the proposed development, presumably people selling out and moving away due to potential location of the casino. This is illustrative of the potential negative impact on home values from a casino. Subsequently, prices began to rise a year after the determination of the casino site, apparently with a view towards commercialization of the properties.

Las Vegas: As a destination site, Las Vegas has been noted as a gambling success. Christopher Miller examined the impact of casinos on home prices in Las Vegas.[12] He concludes that home prices and incomes are correlated, with an upward trend. What he appears to have demonstrated is that gambling produces major advantages for the Las Vegas economy: There is a relationship between consumer payrolls and employment, home prices, home sales.

Detroit (Retail Property): Wiley and Walker [13] performed a regression analysis to analyze the effects of casinos on retail property values in the Detroit urban area. They reported that casinos had a significantly positive influence on retail property values. The effect was stronger within a 5-mile radius of the casinos, suggesting that casinos had a complementary, rather than substitution, effect on other businesses. Bringing a casino to Detroit brought some increase in spending power to a very depressed area. In some cases a casino facilitates growth in the retail sector, and in other cases pulls money out of retail and into the casino.

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[10] This may, however, be a moot point; as an urban area, there appear to have been few if any houses near the casino location.

[11] Chadwick P. Jeffery, *Urban Neighbourhood Impacts of Casinos: A case study of the permanent casino site in Windsor, Ontario,* University of Windsor, 1996.

[12] Christopher Alan Miller, "The Effects of gaming on residential real estate prices and sales: A case study of Las Vegas: 1990—2008", *University of Nevada Las Vegas, 2009.*

[13] Jonathan A. Wiley & Douglas M. Walker, "Casino Revenues and Retail Property Values: The Detroit Case," *Journal of Real Estate Finance,* March 2009.

Conclusions: In depressed rural areas a casino may help the economy by bringing in some money from day trippers. However, in general casinos appear to have a negative impact on home prices in the vicinity of the casino. The effect of casinos on commercial property is mixed: in two cases—Detroit and Windsor—were positive. However, there are references in the literature to decreased levels of retail spending from what it would otherwise have been when the casino patrons are predominantly local. In such cases, a casino could have a negative impact on local retail operations and property values.

Obviously, Las Vegas could be cited as a commercial property success. Other studies have suggested that the degree to which casinos have a favorable overall impact on commercial property is dependent on the patron mix. If a casino draws heavily from local areas, buying power may be siphoned from local establishments to the casino. However, if the bulk of patrons are from outside the local area, then additional buying power drawn to the region may flow over to other commercial businesses. Given the growth of casino locations, the probability of bringing dollars into the region on a consistent and extended basis seems to have declined. For example, Foxwoods—previously cited as a major success—has had financial difficulties.

Real Estate Values and Externalities—Looking at Underlying Economic Drivers

The conclusion that casinos are associated with negative impacts on residential property values is not unexpected. Commercial activities typically involve spill-over externalities that can impact the residential property values in the surrounding community. The spill-over effect depends on the types of externalities introduced: positive—enhanced amenities, higher incomes, etc.; or negative—increased congestion, crime, etc.

An understanding of property externalities can be useful in considering the potential impact of a proposed gaming establishment. Real estate appraisers routinely evaluate property values taking into account the positive and negative impacts of surrounding activities. A number of non-casino case studies outlining the impacts of various types of commercial endeavors on home prices are discussed in the Appendix. The conclusion from these examples (a few of a number of cases that can be found on-line through the Internet) is that commercial activities, generating traffic, noise, crowds, pollution, and other negative impacts in a neighborhood can potentially affect home values through the interplay of externalities. Positive externalities will increase home values; negative externalities will decrease home values. In some cases the results can be quite striking.

> The real estate literature is replete with papers reporting the influence of externalities on residential property values. Studies appearing in *The Appraisal Journal*, for example, observe positive price effects given a house's proximity to a golf course, or an ocean, and negative effects for proximity to freight rail lines, a cell phone tower, a ruptured oil pipeline, highway noise barriers, and the residence of a registered sex offender. [14]

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[14] James E. Larsen, Joseph W. Coleman, "Cemetery Proximity and Single-family House Price," *Appraisal Journal,* January 1, 2010.

Casinos would appear on balance to have the potential of a negative impact on property values in the immediate area of the casino—based on the externalities from traffic, noise, crime, lighting, etc. On a broader, area-wide basis, however, in rural areas faced with depressed economies casinos may bring increased prosperity, resulting in higher home prices, at least in areas not near the casino.

The gaming literature is filled with discussions of the economic benefits and costs associated with casinos. Tax revenues are frequently mentioned on the benefit side, but offsetting the benefit are infrastructure improvements and ongoing operation and maintenance expenses for city services as well as the substantial social costs incurred from gambling. Social costs are a major potential negative externality.

Some Case Studies: Casino Impacts

The literature on the economic impacts from a casino gives mixed conclusions:[15]

- The statewide impact of Indian casino development in Wisconsin was reported as substantial and positive before measurement and incorporation of social costs. As indicated by Mallach, social costs are difficult to measure; for the Wisconsin case he provided three estimates, and based on the medium estimate, the costs and benefits from gambling cancelled out.
- An Illinois study found that state's riverboat casinos had a negative economic impact.
- An Iowa study found positive net benefits to casinos.
- A Missouri study found net benefits to casinos, but did not factor in social costs.

Based on the analysis of 365 Indian casinos, Baxandall noted that jobs were growing 6.7 percent faster in counties with casinos than in non-casino counties; there was, however, no impact on unemployment rates. Although more jobs were created, additional people moved to the county, so overall the unemployment rate was unchanged. Similarly, there was a decline in per-capita spending as more people with low-income jobs were in the county. There was a limited positive effect on housing prices, with the effect concentrated in sparsely populated rural counties. Baxandall noted that casinos spur economic development but require additional government services.

Mallach notes that the costs and benefits associated with the establishment of a casino can cancel out, or even have a total negative impact. The measurement of social costs is very uncertain; for example, the cost of compulsive gambling is estimated at $560 to $52,000 per gambler. He noted that there is no accepted methodology for measuring social costs, which can include workforce absenteeism, corruption, adverse health issues, policing, welfare, and increases in crime. As Mallach indicates, it is impossible to generalize about the economic impacts of casinos: they can be positive or negative depending on local, specific conditions.[16]

[15] Mallach, *op.cit.* page 11

[16] Mallach, op.cit., page 14.

Garrett examined the impact of casino gaming on local employment.[17] In three of four cases, rural counties that adopted casino gaming experienced increases in household and payroll employment. Employment gains were much greater in rural counties that have adopted casino gaming as a major or predominant industry in comparison to non-casino counties.

A Casino's Economic Impact Depends on the Mix of Patrons.

The economic development dimension of a casino depends on the flow of payments from casino patrons to casinos, lodging, restaurants; and the flow of payments from these businesses to their employees and various suppliers. The regional cycling and recycling of purchasing power in a community can have a multiplier effect local income and employment—if the money comes from outside the community. Casinos with a significant portion of their patron base from outside the area are more likely to have a substantial positive economic impact on other businesses.[18] However, when the patron base is largely from the local area, the impact s on local businesses may be substantially less.

As indicated by Mallach, "The size of the local or regional effect depends most significantly on how many visitors the casino draws from outside the area, the reducing displacement of existing economic activity, and the number of jobs it generates within the area, thereby increasing the multiplier effect of the casino."[19] There may be significant social effects including pathological gambling, crime, and bankruptcy. "…however, there is no consensus in the literature on either the magnitude of these effects or the costs they impose on society and the economy."

- According to Mallach, fewer than 15 percent of the patrons in Atlantic City and Las Vegas are local area residents, and there is general agreement that these cities have benefitted economically from hosting gambling enterprises. [20]
- In contrast, local residents are over 80 percent of patrons for Illinois riverboat casinos, 75 percent for Missouri casinos, and 80 percent in the case of Detroit. The economic benefit has been reported as being much smaller.

As has been the case with Las Vegas, Foxwoods has to some extent become a destination casino. Seventy-three percent of visitors to Foxwoods were reported as being from other states—bringing in spending that was net new to the region, thereby stimulating the expansion of lodging restaurant, and other businesses. Foxwoods was reported as having created 13,000 additional jobs for the area.[21] An economic analysis indicated that the casino had a favorable impact on the local economy. In recent years, however, the handle from the slot machines at Foxwoods has decreased, probably due to economic conditions and increased gaming

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17 Thomas A. Garrett, Casino Gaming and Local Employment Trends, *Federal Reserve Bank of St. Louis Review*, 2004.

18 Adam Rose, "The Regional Economic Impacts of Casino Gambling: Assessment of the Literature and Establishment of a Research Agenda," National Gambling Impact Study Commission, 1998.

19 Mallach, *op.cit.*, page 5.

20 This conclusion appears to be less definitive in the case of Atlantic City, particularly if one journeys 10 blocks from the boardwalk.

21 Carstensen, *et. al.*, page 2.

competition. Foxwoods has announced layoffs from time to time, and has been facing increasing economic challenges and debt restructuring.

To the degree that a casino can attract outside money from a wide geographic area, the level of prosperity and tax revenue of the immediate jurisdiction will be enhanced. Casinos add jobs—although frequently minimum wage for local residents. In some cases casinos have positive impacts on surrounding commercial businesses; in other cases the impact is negative. Whether the government revenues obtained from a casino offset the direct costs of infrastructure improvements and community expenditures seems to be site specific.

A different viewpoint is provided by Hicks, who indicates that gambling casinos did not impact employment and income growth at the county level, although there was a significantly negative impact on retail trade.[22] New employment growth attributable to casinos was zero. However, within a county, there were adjustments in sectors. Most notably, there was a decline in retail trade. He noted that the effects presented were averages, with some counties seeing increases while others experienced decreases. The results were somewhat surprising and show that conclusions vary from study to study, based on assumptions, methodologies, local conditions, and the types and locations of casinos.

Rose indicates that economic theory and the preponderance of evidence indicate that the aggregate direct and indirect impacts of the construction, operation, and taxation of casinos are significantly positive.[23] Broader economic costs relating to increased use of government services and changes in property values are not insignificant, but according to Rose they do not come close to canceling out the more conventional output, income and employment gains.

> A sufficient number of properly done studies, as well as adjustments in the findings of some flawed studies, enable me to state the conclusion: <u>a new casino, of even limited attractiveness and placed in a market that is not already saturated, will yield positive economic benefits on net to its host economy.[24]</u> …This conclusion does not factor in the social costs of problem gambling or crime as well. In essence, however, several researchers have correctly noted that analyzing the impact of a new casino is not so much different than analyzing the impact of a new retail center or entertainment complex in a region, social cost considerations aside.

Contrary to Rose's statement, there is substantial disagreement on the impacts of casinos, particularly when one takes account of externalities and social costs. Put differently, Rose ignored the most important costs, so of course he reaches a positive conclusion.

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[22] Michael J. Hicks, "A Quasi Experimental Analysis of the Impact of Casino Gambling on Regional Economic Performance," *National Tax Association, Proceedings, 2003.*

[23] Adam Rose, "The Regional Economic Impacts of Casino Gambling: Assessment of the Literature and Establishment of a Research Agenda.", 1998. The Rose study is dated and is illustrative of much of the analysis on gambling—ignoring the social costs which are difficult to quantify but have been shown to be very high.

[24] Rose, *op.cit.*, Page iv.

The Social Costs Associated with Casinos are Frequently Reported as Substantial.

In addition to direct costs and benefits associated with gambling there appear to be a number of social costs. However, most studies seem to ignore these costs, indicating that they are beyond the scope of the project. The costs are frequently references as substantial:

- According to Grinols, gambling fails a cost-benefit test; $3 of cost to $1 of benefits.[25] Public costs are substantial.
- According to the Rappaport Institute report, total crime in an area can be expected to increase when casinos open, but the increase is due to increased population, not to a casino-created crime wave.[26] Increased crime results in increased policing and other costs.
- Based on FBI statistics, for an average county with 100,000 population size, introduction of a casino implies 615 more larcenies, 325 more burglaries, 272 more auto thefts, 10 more rapes, 65 more robberies, and 100 more aggravated assaults. [27]
- As noted by Wheeler, *et. al.*, "Our results indicate a positive and significant relationship between gaming and crime rates….."; "…if gaming expenditure were zero in 2006, income-generating crime would fall by about 10%."[28]
- "…national park visitors have no effect on either property or violent crime."[29]
- Research also shows that proximity to casinos leads to increases in problem gambling. [30]
- Nichols *et. al.* performed a study of per capita bankruptcy rates in eight communities that had recently adopted casino gambling with a set of economically and demographically similar control jurisdictions.[31] The results reveal that bankruptcy rates increased in seven of the eight communities and decreased in one.

Application to Springfield, Massachusetts

In the case of Springfield, Massachusetts, the city is reported to collect $25 million a year in revenue. There will be additional benefits in terms of employment, property taxes, and possibly other retail services. Any analysis of the benefits needs to consider capital costs and ongoing operations and maintenance costs to be borne by the government, possible decreases in home values, and rising social costs in arriving at a net impact.

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25 Earl L. Grinols, "Gambling Economics, Summary Facts," November 2012.

26 Rapparort page 5

27 Earl L. Grinols and David B. Mustard,"Casinos, Crime, and Community Costs," *The Review of Economics and Statistics,* 88,1,February 2006, 28-45, as summarized by Professor Earl L. Grinols.

28 Wheeler, Sarah A., David K. Round, John K. Wilson, "The Relationship Between Crime and Electronic Gaming Expenditure: Evidence from Victoria, Australia," *Journal of Quantitative Criminology*, Springer Verlag, October 2010.

29 Grinols, Earl L. and David B. Mustard, "How Do Visitors Affect Crime?," Journal of *Quantitative Criminology,* 2011.

30 Baxandall, *op.cit.,* page 5.

31 Mark W. Nichols, B. Grant Stitt, David Giacopassi, "Casino Gambling and Bankruptcy in New U.S. Casino Jurisdictions," *Journal of Socio-Economics* 29 (2000) 247–261.

Estimates of the Impact

Home Values—Impact of a Casino: The various studies available suggest that a casino can have a negative impact on home prices of between -2 and -10 percent decline in value, with the most credible being a negative decline of 4.6 percent.

- Recognizing that the negative impact on home values decreases based on distance from a casino, we assume that only 50 percent of the total assessed value will be negatively impacted.
- For those homes negatively impacted, we assume that the impact will be in the range from -2.3 percent to -4.6 percent.
- The Assessed Value of homes in the Springfield/West Springfield/Palmer area in 2012 was approximately $5.5 Billion.

Area	Assessed Value
Springfield	$ 3,453,979,100
West Springfield	$ 1,484,837,700
Palmer	$ 614,020,300
Total	$ 5,552,837,100

- Based on the assumptions, the overall decline in total assessed value for homes in the Springfield area as the result of a casino is estimated to be between $64 million (lower bound) to $128 million (upper bound). This works out to a decline of $1650 to $3300 per home.

Home Sales: In 2012 home sales were 1234 units, for a total market value of $154 million.

	Sales	Price	Total Market Value
Springfield	926	$ 107,130	$ 99,202,380
West Springfield	210	$ 188,425	$ 39,569,250
Palmer	98	$ 157,430	$ 15,428,140
Total	1234		$ 154,199,770

- Under the same assumptions as above, the corresponding negative impact on the market value of sales would have ranged from -$1.7 million to -$3.5 million.
- Put differently, the overall price decline per home would have been in the range of $1,400 to $2,900 per home, based on the 2012 level of sales and prices.

Other Impacts: In addition to impacts on assessed home values there could also be impacts from social costs and short sale/ home foreclosures.

Social Costs—Gambling: Approximately 1.2 percent of U.S. adults are pathological gamblers. The figure doubles in a local community if a casino is located within 50 miles Based on the population size of 680,000 in the Springfield metropolitan statistical area, the number of people with a gambling problem could rise from roughly 7,000 to 14,000. Based on studies showing an average annual cost of $1200 per problem gambler in terms of welfare benefits, treatment, arrests, legal fees, and the like, the Springfield region should expect to absorb $8.4 million annually in costs related to increased gambling.

Foreclosures and Short Sales*:* Based on a Study by Nichols *et. al.*, the number of bankruptcies could rise by .88 per 1,000 households with the arrival of a casino.[32] For the Springfield area, that could mean an additional 250 bankruptcies, with possibly 125 or more homes in foreclosure on a yearly basis. Total losses in market value could be in the neighborhood of $5 million, although actual market conditions could cause this number to rise or fall depending on overall market trends.

Further in-depth study is required to assess fully the economic and social impact of a new casino in or near Springfield, Massachusetts. The research needs to take into consider all costs and benefits as well as the consideration of all casinos within reasonable driving distances in the New England region as well a consideration of any new potential casinos that may be opened in the future.

In looking at the impacts of casinos overall and considering all factors, there are a number of positives and negatives that need to be considered, as outlined below.

There can be benefits to a community from the location of a casino:

- Gambling operations generate substantial amounts of tax revenue; however, the revenues frequently go to the state rather than the local jurisdiction. In many cases the local jurisdictions pay most of the costs of infrastructure improvements.
- In economically depressed rural areas casinos have provided increased employment and income, with measurable impacts. In urban areas the various studies in general have found no measurable impacts on income and employment.

However, the benefits from a casino may be relatively limited.

- Jobs are created initially, but the ongoing service sector jobs in casino-related employment generally tend to be lower-paid jobs.
- Construction jobs are also created initially, but they are one-time new jobs. The number of restaurants and shows in the areas around casinos generally declines. For example, in Atlantic City, the number of restaurants located outside of the casinos fell by nearly half over a 20-year time span.

Site specific attributes are extremely important in the operating success of a casino.

- The location of other competitive casinos is important: less competition with other casinos apparently results in greater patronage of a casino.
- The type of patron is important: Extended visit patrons tend to spend more money at a casino and in the area than do day-trippers. To the degree that a casino area becomes a destination rather than relying on local patrons the casino is likely to generate additional jobs and income for the region.

[32] Mark W. Nichols, B. Grant Stitt, David Giacopassi, "Casino Gambling and Bankruptcy in New United States Casino Jurisdictions," *Journal of Socio-Economics*, 29(2000), 247-261.

- The proclivity of potential patrons to venture outside the casino to patronize other businesses impacts the overall business level in the area; alternatively, if the majority of patrons are local, there may be a decline in patronage of other retail businesses.
- The degree to which the casino hires locally impacts the local benefits. Studies have noted that in many cases the employment of residents is for minimum wage jobs. The degree to which higher paid personnel reside in an area has an impact on the overall economy.

There can be substantial costs from the location of a casino:

- The social costs associated with gambling can be substantial, frequently referenced as crime, bankruptcy, and various forms of social degradation.
- There does not appear to be general agreement as to how social costs should be measured.
- Social costs frequently are not incorporated into the analysis on the grounds that they are difficult to analyze.
- Personal bankruptcy rates are higher in communities with nearby casinos. The rates are highest in areas where the casinos have been the longest.
- The literature is mixed on whether the crime rate rises with casinos, but the number of additional people visiting the area requires personnel additions to the public sector.

In general, a casino would be expected to impact housing values negatively—at least in areas near the casino:

- Negative externalities can affect home prices—for example, a garbage landfill, rock quarry, airport, or even country club can have negative impacts on home prices.
- Positive externalities—for example the siting of a Walmart or an increased transportation network can have positive externalities.
- The net effect of externalities determines the impact on home prices. In the case of casinos the impact has been shown to be negative for houses in the immediate area of the casino. However, the impact of the casino on home prices in a broader area may be positive given rising incomes in rural areas.

In applying the information in this report to a specific proposed casino site one would need to consider a variety of issues:

- Will the proposed casino be a destination venue, or will it rely on day-trippers or local patrons?
- Will the proposed casino be in competition with other nearby gaming opportunities?
- Will the proposed casino offer a significant number and diversity of job opportunities for local residents?
- What are the benefits in dollar terms (e.g., taxes, economic growth, impacts on real estate, etc.)?
- What are the costs in dollar terms (e.g., social costs, infrastructure costs, real estate impacts, etc.)?
- Will the costs offset the benefits?

Conclusions

In conclusion, a casino would appear to have a negative impact on assessed home values and sales prices in the Springfield area. There could also be additional negative impacts in terms of more foreclosures and higher social costs. Offsetting these negative factors would potentially be additional revenue from taxes, the creation of additional jobs, and possibly some other positive economic impacts. A detailed economic analysis of the proposed casino would need to consider all of the issues mentioned.

Appendix: Externalities and Impacts on Residential Home Values
Examples of Some Cases

The literature on the impact of externalities on residential home values is extensive. One would expect a Walmart with its associated traffic to have a negative impact on home values (Wrong!) and a golf course to have a positive impact (partly correct, partly wrong). The examples show to some degree the nature of externalities. It would appear that a casino, on balance, would negatively impact home values in the immediate area. However, this impact is likely to be very site specific, requiring an analysis in each case that takes into account urban/rural location, local/our-of-town patrons, degree of competition, and potentially various other factors.

Cemeteries (Mixed effects): In evaluating the potential impacts of cemeteries on property values, Larsen and Coleman discussed the tradeoffs between positive externalities (stable land use, open space) and negative externalities (negative ambience), using a regression analysis on data from 575 transactions of single-family houses in the vicinity of four cemeteries. Two cases found no price impacts. In a third case prices were 8.8 percent higher, and in a fourth case prices were 10.1 percent lower. [33]

Sports Stadium (negative effect): Dehring *et. al.* investigated the impact of a sports stadium on residential property values.[34] A series of announcements regarding a new publicly-subsidized stadium in nearby Arlington, Texas, had a negative effect on residential property values. Average property values declined approximately 1.5% relative to the surrounding area before stadium construction commenced.

Walmart (positive effect): A study from the National Bureau of Economic Research (NBER) found that a new Walmart store increased home prices by 2 to 3 percent for homes within .5 miles, and by 1-2 percent for homes between .5 mile and 1 mile.[35] The analysis was based on over one million housing transactions located near 159 Walmarts that opened between 2000 and 2006. The study concluded that the impact of accessibility to shopping and employment offset the negative externalities of possible increases in crime, noise, light pollution, traffic congestion, garbage accumulation and perceived visual aesthetics. Considering Walmart and other similar stores, Johnson et. al. found that[36]

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[33] James E. Larsen, Joseph W. Coleman, "Cemetery Proximity and Single-family House Price," *Appraisal Journal*, January 1, 2010.

[34] Carolyn A. Dehring, Craig A. Depken, and Michael R. Ward, "The Impact of Stadium Announcements on Residential Property Values: Evidence from a Natural Experiment in Dallas-Fort Worth," *Working Papers 0616*, International Association of Sports Economists & North American Association of Sports Economists, September 2006.

[35] Devin G. Pope, Jaren C. Pope, "When Walmart Comes to Town: Always Low Housing Prices? Always?," *NBER Working Paper No. 18111*, May 2012.

[36] Daniel K.N. Johnson, Kristina M. Lybecker, Nicole Gurley, Alex Stiller-Shulman, Stephen Fischer, "The NWIMBY (No WalMart In My Backyard): Big Box Stores and Residential Property Values," *Colorado College Working Paper 2009-09*, October 2009.

Proximity to one or more big box stores delays home sales and diminishes home property values in that area. Within some critical distance, however, the data indicate that the convenience of being close to a big box store may outweigh the negative effects on pricing at least for some homeowners.

Neighbors (negative impact): A neighborhood nuisance such as an overgrown yard or a curmudgeonly resident next door is reported as possibly negatively affecting home values by up to 10 percent.[37] Larsen *et. al.* also found a negative neighbor effect: houses located with .1 mile of a sex offender were reported as selling for 7.5 to 17.4 percent less on average, depending on distance from the offender, severity of the crime, and type of neighborhood notification.[38]

Airport (negative impact): A 1994 Booz-Allen & Hamilton report The *Effect of Airport Noise on Housing Values: A Summary Report*, prepared for the Federal Aviation Administration, described a methodology for evaluating the impact of noise on housing values by comparing market prices in similar neighborhoods that differ only in the level of airport-related noise.[39] In two paired moderately priced neighborhoods north of Los Angeles International Airport, the study found "an average 18.6 percent higher property value in the quiet neighborhood…"

Infrastructure Project (negative impact): Theebe examined the impact of large planned infrastructural projects such as expansion of main airports and construction of high-speed railways. He estimated the non-linear impact of traffic noise on property prices. The data set was extensive: over 100,000 sales transactions are studied, with many individual property characteristics, combined with noise levels for 2 million small 100 by 100 meter areas. He used spatial autocorrelation techniques and found that the impact of traffic noise in a rising market ranges to 12 percent, with an average of about 5 percent. The discount varies across sub-markets, and is a non-linear function of the noise level.[40]

Rail Transportation (positive impact): Roderick Diaz summarized 8 studies on the effects of rail transportation on home prices. The conclusion was that transportation projects caused a 3 to 10 percent increase in home prices.[41] The positive (accessibility) impacts outweighed the negative (traffic, noise, aesthetics) impacts.

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[37] "Neighbors Could Hurt Home Appraisal Values, *The Real Deal*, February 15, 2013 Hiten Samtani. http://therealdeal.com/blog/2013/02/15/neighbors-could-hurt-home-appraisal-values-experts-say/

[38] James E. Larsen, Kenneth J. Lowrey, Joseph W. Coleman, "The Effect of Proximity to a Registered Sex Offender's Residence on Single-family House Selection," *Appraisal Journal*, July 2003, Volume 71, Number 3.

[39] http://www.wyle.com/PDFs/archive/EffectsAirNoiseHV.pdf.

[40] Marcel A.J. Theebe, "Planes, Trains, and Automobiles: The Impact of Traffic Noise on House Prices," *Journal of Real Estate Finance and Economics, Vol. 28, No. 2*

[41] http://www.rtd- fastracks.com/media/uploads/nm/impacts_of_rail_transif_on_property_values.pdf, Roderick B. Diaz, Booz Allen & Hamilton, *Impacts of Rail Transit on Property Values.*

Colleges (positive impact): Vandergrift *et. al.* found at the municipal level that the presence of a college is associated with house prices that are about 11 percent higher.[42]

Golf Courses (mixed effects): Asabere *et. al.* concluded that there were positive and negative effects to being located near a golf course. The results showed that golf course frontage produced an average price premium of roughly 8% for homes. The measurement of negative impacts was also statistically significant, with the exact loss dependent on the distance involved. For example, a home one-tenth-mile distant from the golf course gate suffered a loss of about 3.7%.[43]

Shopping Center (mixed effects): The announcement of a proposed shopping center was reported to have had both negative and positive effects on the value of neighboring residential properties.[44] At distances closer than 1500 feet, diseconomies appeared to dominate. Beyond 1500 feet, economies appeared to dominate.

Office Building Near Residences (mixed effects): In the case of the construction of an 11 story, 289,000 sq. ft. building in Dallas, Texas, residential property values for nearby houses were discounted by as much as 15 percent.[45] However, properties within 2,500 meters increased overall in value by about 1 percent. There were both negative and positive externalities. Accessibility to employment and or expectations for future commercial development increase values.

Landfills (negative impacts): Nelson *et. al.* estimated the price impact effects of a Minnesota landfill on the value of nearby houses. At the landfill boundary, the impact was a negative 12 percent, declining to 6 percent at one mile from the landfill, with negligible impact beyond two miles.[46]

A different study showed that living close to a landfill was reported to reduce house prices by 2.6 percent.[47] Negative impacts from such nuisances as noise, smell, wind-blown litter, the additional traffic, flies, and vermin were reported to appear to endure over periods of

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42 http://policy.rutgers.edu/faculty/lahr/TownVsGown.pdf, "Town versus Gown: The Effect of a College on Housing Prices and the Tax Base," Donald Vandegrift a*Amanda Lockshiss, Michael Lahr November 2009.

43 Asabere, Paul K.; Huffman, Forrest E. "Negative and positive impacts of golf course proximity on home prices," Appraisal Journal, October 1, 1996.

44 Peter F. Colwell, Surinder S. Gujral, and Christopher Coley, "The Impact of a Shopping Center on the Value of Surrounding Properties," *Real Estate Issues*, Spring/Summer 1985 35-39.

45 Thomas G. Thibodeau, "Estimating the Effect of High-Rise Office Buildings on Residential Property Values," *Land Economics* Vol 66, No. 4, November 1990.

46 Arthur C. Nelson, John Genereux and Michelle Genereux, "Price Effects of Landfills on House Values," *Land Economics*, Vol. 68, No. 4 (Nov., 1992), pp. 359-365.

47 http://www.birmingham.ac.uk/news/latest/2012/12/28-dec-Living-close-to-a-rubbish-tip-reduces-house-prices-by-26,-research-shows.aspx, "The Valuation of Landfill Disamenities in Birmingham**,"** Yun Hama, David Maddison and Robert Elliotta

20 years after closure. The report concluded that proximity to a landfill site can also generate "stigma damages" not attributable to any physical nuisance.

Wind Turbines (mixed impacts): A study of the impacts of wind turbines found both negative and positive impacts on home prices. First, based on a Lawrence Berkeley National Laboratory study, there is no indication that wind turbines cause a persistent negative impact on property values in the area (5-mile radius) around a wind facility. [48] However, other studies in the same document, which summarized 5 studies, saw negative impacts. The overall conclusion—issue not yet resolved.

Bibliography

Asabere, Paul K. and Huffman, Forrest E. ,"Negative and positive impacts of golf course proximity on home prices," Appraisal Journal, October 1, 1996.

Baxandall, Phineas and Bruce Sacderdote, Betting on the Future: The Economic Impact of Legalized Gambling, Policy Brietf, Rappaport Institute for Greater Boston, 2005

Carstensen, Fred and William Lott, Stan McMillen, Bobur Alimov, Na Li Dawson, Tapas Ray, The Economic Impact of the Mashantucket Pequot Tribal Nation Operations on Connecticut, Connecticut Center for Economic Analysis, November 28,2000

Clauretie, Terrence M. and Thomas M. Carroll, Nasser Daneshvary, Rolling the Dice: Would Casinos Harm Illinois Home Values?, Illinois Real Estate Letter, Winter 1998, pages 7-9

Colwell, Peter F. and Surinder S. Gujral, and Christopher Coley, "The Impact of a Shopping Center on the Value of Surrounding Properties," *Real Estate Issues*, Spring/Summer 1985 35-39.

Dehring, Carolyn A. and Craig A. Depken, and Michael R. Ward, "The Impact of Stadium Announcements on Residential Property Values: Evidence from a Natural Experiment in Dallas-Fort Worth," *Working Papers 0616*, International Association of Sports Economists & North American Association of Sports Economists, September 2006.

Diaz, Roderick B., Booz Allen & Hamilton, "Impacts of Rail Transit on Property Values", *http://www.rtd-fastracks.com/media/uploads/nm/impacts_of_rail_transif_on_property_values.pdf*

"FINDINGS ON THE IMPACT OF WIND TURBINES ON RESIDENTIAL PROPERTY VALUES: A Reference Guide as of 201," West Virginia Division of Energy and Wind

[48] FINDINGS ON THE IMPACT OF WIND TURBINES ON RESIDENTIAL PROPERTY VALUES: A Reference Guide as of 2011 West Virginia Division of Energy and Wind Powering America, April 2011, (Revised September 2011) http://muwww-new.marshall.edu/cber/research/WTGs_Property_Impacts_Summary_FINAL.pdf.

Powering America, April 2011, (Revised September 2011), http://muwww-new.marshall.edu/cber/research/WTGs_Property_Impacts_Summary_FINAL.pdf.

Garrett, Thomas A., "Casino Gaming and local Employment Trends," FRB *St. Louis Review*, January/February 2004

Grinols, Earl L., "Gambling Economics, Summary Facts," November 2012.

Grinols, Earl L. and David B. Mustard, " Casinos, Crime, and Community Costs," *The Review of Economics and Statistics*, 88,1,February 2006, 28-45.

Grinols, Earl L. and David B. Mustard, "How Do Visitors Affect Crime?" *Journal of Quantitative Criminology*, 2011.

Hama, Yun and David Maddison and Robert Elliotta ,http://www.birmingham.ac.uk/news/latest/2012/12/28-dec-Living-close-to-a-rubbish-tip-reduces-house-prices-by-26,-research-shows.aspx, "The Valuation of Landfill Disamenities in Birmingham**"**

Hicks, Michael J. , "A Quasi Experimental Analysis of the Impact of Casino Gambling on Regional Economic Performance," *National Tax Association, Proceedings, 2003.*

Jeffery, Chadwick P., *Urban Neighbourhood Impacts of Casinos: A case study of the permanent casino site in Windsor, Ontario*, University of Windsor, 1996.

Johnson, Daniel K.N., and Kristina M. Lybecker, Nicole Gurley, Alex Stiller-Shulman, Stephen Fischer, "The NWIMBY (No WalMart In My Backyard): Big Box Stores and Residential Property Values," *Colorado College Working Paper 2009-09*, October 2009.

Landers, James R., "Analyzing Local Housing Values to Assess the Economic Development Effects of Midwestern Casinos," *National Tax Association, Proceedings, 2004.*

Larsen, James E. and Kenneth J. Lowrey, Joseph W. Coleman, "The Effect of Proximity to a Registered Sex Offender's Residence on Single-family House Selection," *Appraisal Journal,* July 2003, Volume 71, Number 3.

Larsen, James E. and Joseph W. Coleman, "Cemetery Proximity and Single-family House Price," *Appraisal Journal,* January 1, 2010.

Mallach, Alan, "Economic and Social Impact of Introducing Casino Gambling: A Review and Assessment of the Literature," *FRB Philadelphia, Discussion Paper,* March 2 010.

Miller, Christopher Alan, "The Effects of gaming on residential real estate prices and sales: A case study of Las Vegas: 1990—2008", University *of Nevada Las Vegas, 2009.*

Nichols, Mark W. and B. Grant Stitt, David Giacopassi, "Casino Gambling and Bankruptcy in New U.S. Casino Jurisdictions, *Journal of Socio-Economics* 29 (2000) 247–261.

Pope, Devin G. and Jaren C. Pope, “When Walmart Comes to Town: Always Low Housing Prices? Always? ” *NBER Working Paper No. 18111*, May 2012.

Rose, Adam , “The Regional Economic Impacts of Casino Gambling: Assessment of the Literature and Establishment of a Research Agenda,” *National Gambling Impact Study Commission*, 1998.

“Neighbors Could Hurt Home Appraisal Values, *The Real Deal*, February 15, 2013, Hiten Samtani, http://therealdeal.com/blog/2013/02/15/neighbors-could-hurt-home-appraisal-values-experts-say/

Nelson, Arthur C. and John Genereux, Michelle Genereux, “Price Effects of Landfills on House Values,” Land *Economics*, Vol. 68, No. 4 (Nov., 1992), pp. 359-365.

Marcel A.J. Theebe, “Planes, Trains, and Automobiles: The Impact of Traffic Noise on House Prices,” *Journal of Real Estate Finance and Economics, Vol. 28, No. 2*

Thibodeau, Thomas G., “Estimating the Effect of High-Rise Office Buildings on Residential Property Values,” *Land Economics* Vol. 66, No. 4, November 1990.

Vandegrift , Donald and Amanda Lockshiss, Michael Lahr, “Town versus Gown: The Effect of a College on Housing Prices and the Tax Base,” November 2009. http://policy.rutgers.edu/faculty/lahr/TownVsGown.pdf,

Wenz, Michael, “The Impact of Casino Gambling on Housing Markets: A Hedonic Approach,” *Journal of Gambling Business and Economics*, 2007.

Wheeler, Sarah A. and David K. Round, John K. Wilson, “The Relationship Between Crime and Electronic Gaming Expenditure: Evidence from Victoria, Australia,” *Journal of Quantitative Criminology*, Springer Verlag, October 2010.

Williams Robert J. and Jürgen Rehm, Rhys M.G. Stevens, M.L.I.S., “THE SOCIAL AND ECONOMIC IMPACTS OF GAMBLING: FINAL REPORT,” Canadian Consortium for Gambling Research, NOVEMBER 3, 2011

Wiley , and Jonathan A. & Douglas M. Walker, “Casino Revenues and Retail Property Values: The Detroit Case,” *Journal of Real Estate Finance*, March 2009.