CASINOS AND FLORIDA:
Crime and Prison Costs

Casinos and Florida: Crime and Prison Costs

A report authored by Richard Herring and David Beggs, independent consultants specializing in analysis of matters related to Florida government.

Richard Herring was, for 25 years, an attorney for the Florida Legislature, where he specialized in fiscal and appropriations issues.

David Beggs has 20 years experience as a state economist, first as staff director for the Florida Senate Committee on Finance and Taxation and then with the Florida Department of Revenue.

Casinos and Florida: Crime and Prison Costs – SUMMARY

Based on a conservative estimate, crime increases following the introduction of casinos into Miami-Dade County will result in a $3 billion dollar impact, on just the state prison system over a 10-year period. This estimate assumes that only 3%-8% of new crime will result in arrest and sentencing.

This estimate does not attempt to put a dollar value on the costs for local police, prosecutors, or courts. Nor does it attempt to quantify the costs to the individuals who are the victims of crime.

The impact of crime is felt more by victims than by society as a whole. It is, however, extremely difficult to put a price tag on the impact of crime to its victims. The financial impact of crime on the community, state, and taxpayers can be estimated. Ultimately, individual and business taxpayers must pay for the direct effects of crime on the costs of community policing, prosecution, court resources, and imprisonment. Other indirect costs of increased crime also exist, such as negative impacts on property values, productivity, and availability of public resources for other community needs.

This estimate assumes that 2015-16 will be the first full year of casino operation in South Florida. It further assumes that casinos will be located only in Miami-Dade County. If it included Broward and Palm Beach Counties, the fiscal impact would more than double. It conservatively assumes that crime rates in Miami-Dade County are the same as the national crime rates used in our comparison study for the United States. (Just for Florida, we know that the crime rate in 2010 for serious crimes per 100,000 population was 5,506 for Miami-Dade County and 4,105 for the state as a whole.)

This fiscal estimate includes <u>only</u> the costs to the state of Florida for additional prison admissions following the introduction of casinos and omits crimes (such as murder) that did not show an increase in the first 5 years.

Estimated Increase in Number of Crimes in Miami-Dade County

	Larceny	Burglary	Auto Theft	Aggravated Assault	Robbery	Rape
2015-16			5,045		882	
2016-17			4,490		1,088	
2017-18			5,812	564	1,975	85
2018-19	3,652	1,826	4,594	1,198	1,484	171
2019-20 and after	17,717	9,378	7,820	2,857	1,876	289

Based on the ratios of persons sentenced in Florida to crimes reported in Florida (3% to 8.3% depending on the crime), we calculate the number of persons who will be sentenced to prison in each category of offense for each of the 10 years following the introduction of casinos. We include the average length of sentence in Florida for each crime and assume that 85% of that sentence will actually be served. We use the officially adopted Florida Criminal Justice Estimating Conference costs for prison operations and for the capital costs of new prison beds.

Cost to Florida Taxpayers from Increased Prison Admissions

	Annual Operating Costs	Non-recurring Construction Costs	Annual Appropriations Needed	Cumulative Costs to the Taxpayers
2015-16	$4,859,546	$14,550,575	$19,410,121	$19,410,121
2016-17	$9,924,211	$27,763,621	$37,687,832	$57,097,954
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2020-21	$87,863,776	$245,804,578	$333,668,353	$752,387,723
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2025-26	$124,939,601	$349,526,590	$474,466,190	$3,013,910,420

Sources used for all data are documented in the full report.

The most thorough peer-reviewed study of the impact of casinos on crime to date, in *The Review of Economics and Statistics* (Grinols and Mustard 2006), examined the nationwide relationship between casinos and crime for every year from 1977 to 1996 based on FBI Uniform Crime Reports and U.S. Census demographic data. This time period is important because, except for Nevada, every state with casinos in 1996 had legalized them during the period studies. Thus crime statistics were available before and after the introduction of casinos.

The study predicts that crime in the county will grow over time after the introduction of a casino. In 1996, 8% of crime could be attributed to casinos, costing each adult (non-gamblers and gamblers alike) $75 a year in 1996 dollars. Five years after a casino opens, the study showed property crime increasing by 8.6% and violent crime increasing by 12.6%. It also looked at crime in neighboring counties and found no decrease there, concluding that crime did not just move, but actually increased.

Specifically, aggravated assault, rape, and larceny begin to show increases in the 3rd year and continue to rise until the 5th year, when they stabilize at the new, higher rate. Robbery begins to show an immediate increase, while burglary does not increase until the 4th year. Auto thefts also show a gradual increase. Only murder rates seem to be unaffected.

Douglas M. Walker, Grinols and Mustard's most vocal academic critic, notes that this 2006 study "represents the most comprehensive study of the link between casinos and crime to date." (Walker 2010) Walker has also commented that the Grinols and Mustard analysis "is a noteworthy contribution to the gambling literature. The scope of their analysis is impressive." (Walker 2008)

We note that according to the U.S. Department of Labor's Bureau of Labor Statistics (BLS 2010), almost 5% of the employees at casino hotels in 2010 were in protective service occupations, primarily security guards.

We do not, in this fiscal note, attempt to explain the various reasons that casinos may increase crime. Research for the National Institute of Justice does provide one possible reason. The researchers interviewed arrestees in Las Vegas and in Des Moines concerning the relationship between crime and gambling behavior. They concluded that the "percentage of problem of pathological gamblers among arrestees was three to five times higher than in the general population." They further found that "[n]early one-third of arrestees identified as pathological gamblers admitted having committed robbery in the previous year. Approximately 13 percent had assaulted someone for money. Pathological gamblers were much more likely to have sold drugs than other arrestees." (National Institute 2004)

Several studies on casinos and crime show that crime <u>rates</u> do not increase. They do so by adding tourists to the population so that population increases as crime increases. Thus, the <u>number</u> of crimes can increase without increasing the <u>rate</u> of crime. As an example, suppose a community with a population of 100,000 experiences 100 crimes in a year (with 10 offenders imprisoned). The following year, the population is calculated to be 150,000 and crimes increase to 150 (with 15 offenders imprisoned). That community has <u>not</u> experienced an increase in the rate of crime, but it still has to pay for the 5 additional offenders who are incarcerated. This approach may have meaning for some research, but it is not relevant to this fiscal analysis. We are concerned with the absolute increase in the number of crimes, as that will directly affect Florida's prison population.

See full report that folows for a full literature review.

Sources

BLS, "May 2010 National Industry-Specific Occupational Employment and Wage Estimates: NAICS 721120 - Casino Hotels," *Occupational Employment Statistics*, United States Department of Labor, Bureau of Labor Statistics.
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Grinols, Earl L. and David B. Mustard, "Casinos, Crime, and Community Costs," *The Review of Economics and Statistics*, vol. 88, no. 1, February 2006.

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Walker, Douglas M., "Casinos and Crime in the USA," in *Handbook on the Economics of Crime*, Bruce L. Benson and Paul R. Zimmerman ed., Edward Elgar Publishing, November 2010.

Walker, Douglas M., "Do Casinos Really Cause Crime?", *Econ Journal Watch*, vol. 5, no. 1, January 2008.

See full report that follows for a full list of sources.

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This estimate does not attempt to put a dollar value on the costs for local police, prosecutors, or courts. Nor does it attempt to quantify the costs to the individuals who are the victims of crime.

Introduction - Casinos and Crime

The impact of crime is felt more by victims than by society as a whole. It is, however, extremely difficult to put a price tag on the impact of crime to its victims. The financial impact of crime on the community, state, and taxpayers can be estimated. Ultimately, individual and business taxpayers must pay for the direct effects of crime on the costs of community policing, prosecution, court resources, and imprisonment. Other indirect costs of increased crime also exist, such as negative impacts on property values, productivity, and availability of public resources for other community needs.

The relationship of crime and casinos is hotly contested in the academic and research literature. We have reviewed all the major studies and articles, plus several dozen less cited pieces that specifically address that relationship. There is little debate that the introduction of a casino into a community is related to an increase in crime in that community. There is great debate about specifically which crimes increase, and by how much. A small study focusing only on Indian casinos, mostly in remote locations, will reach a different result than a study of casinos in urban areas that attract large numbers of tourists.

Crime statistics for areas with new casinos are skewed in the casinos favor by a number of factors:

1. Local law enforcement capacity is often improved. More police presence decreases crime <u>in that community</u>. In many states, gambling taxes paid by casinos are paid to local governments, either through direct taxation by the local government or by revenue sharing by the state of state casino taxes.

2. Crime resulting from casino gambling is often exported to the other cities or states where the gamblers live. Particularly for casinos that draw a lot of tourists and for casinos in rural, economically depressed areas, gamblers live outside the community in which the casino does business. The crime rate in the casino's community does not capture crimes that are committed in the hometowns of the gamblers following gambling losses.

3. Casinos have their own security services. Incidents, for which another business would have to call local law enforcement, can be handled within the casino. Such incidents never show up in crime reports even though they involve exactly the same behavior.

Approach - A Conservative Estimate

We rely heavily on a 2006 study, which even its biggest detractor has called the "most comprehensive" study of the impact of casinos on crime. Applying this 2006 study to South Florida results in a conservative estimate of the fiscal impact of casinos on crime in Florida for several reasons:
- It is a nationwide study, capturing both small rural casinos and large urban casinos. At the time, the mean population in the 3,533 casino counties was 145,330. Applying its results to heavily-urban South Florida will tend to skew the South Florida number low, below the real impact.
- It covers the 20-year period during which casino gambling in most states was legalized, so it uses actual data for the same communities without and with casinos. Because few areas experience the population growth that Florida's urban areas historically have, our fiscal estimate will be skewed low.

- The crime data are from the FBI and the population data are from the U.S. Census. This study relies on no samples or surveys. Because Florida has a higher rate of incarceration than most other states, using this nationwide data will skew the Florida estimate lower than it would otherwise be.
- This study analyzed county-level data for all counties, with and without casinos. And it compared crime in casino counties with crime in neighboring counties. Applying this to South Florida will skew our fiscal estimate down because counties in South Florida tend to blend with effectively one large urban population ignoring county lines. This is unlike many states where large counties will have a population center that is discrete from the population center in the next county.
- Internal to the study, the authors note several valid ways of analyzing the data. They emphasize the results of the methodology that best fits the variables and that adds control variables to reduce bias in the data. These things result in a lower estimate of the amount of crime in their most conservative model.

Each of these elements of the 2006 study contribute to making it the most comprehensive study to date. When we apply its results to a particular location - Miami-Dade County - the nationwide data will result in an underestimate of the crime increase we expect to see in Florida.

Model for estimating the fiscal impact of casinos on crime in South Florida

For purposes of this fiscal note, we assume that 2015-16 will be the first full year of casino operation in South Florida. We further assume that casinos will be located only in Miami-Dade County and limit our crime statistic calculations to that one county population. This is another way we make this a conservative estimate. Had we included Broward and Palm Beach Counties, the fiscal impact herein would more than double.

Further we assume that crime will not cross the urban boundary between Miami-Dade and Broward Counties, even though there is ample evidence that crime does not recognize artificial political boundaries in the South Florida urban area. Based on these conservative adjustments and assumptions, this fiscal note may reflect as little as one-half of the actual costs on crime after the introduction of casinos.

We further assume that the crime rates in Miami-Dade County are the same as the national crime rates used in our comparison study for the United States. Again, this makes our estimate conservative. Just for Florida, we know that the crime rate in 2010 for index (serious) crimes per 100,000 population was 5,506 for Miami-Dade County and 4,105 for the state as a whole. Had we applied this 30% difference, our estimated fiscal impact would grow proportionately. CQ Press annually publishes its "State Crime Rankings." for 2010, CQ ranks Florida as 25th (up from 46th in 2009. Nevada ranks last and New Hampshire and Vermont top the list (each remaining unchanged from 2009).

We use future year population projections published by Miami-Dade County for our 2015-16 to 2025-26 projections.

Miami-Dade County
Population Projection
Year Ending March 31

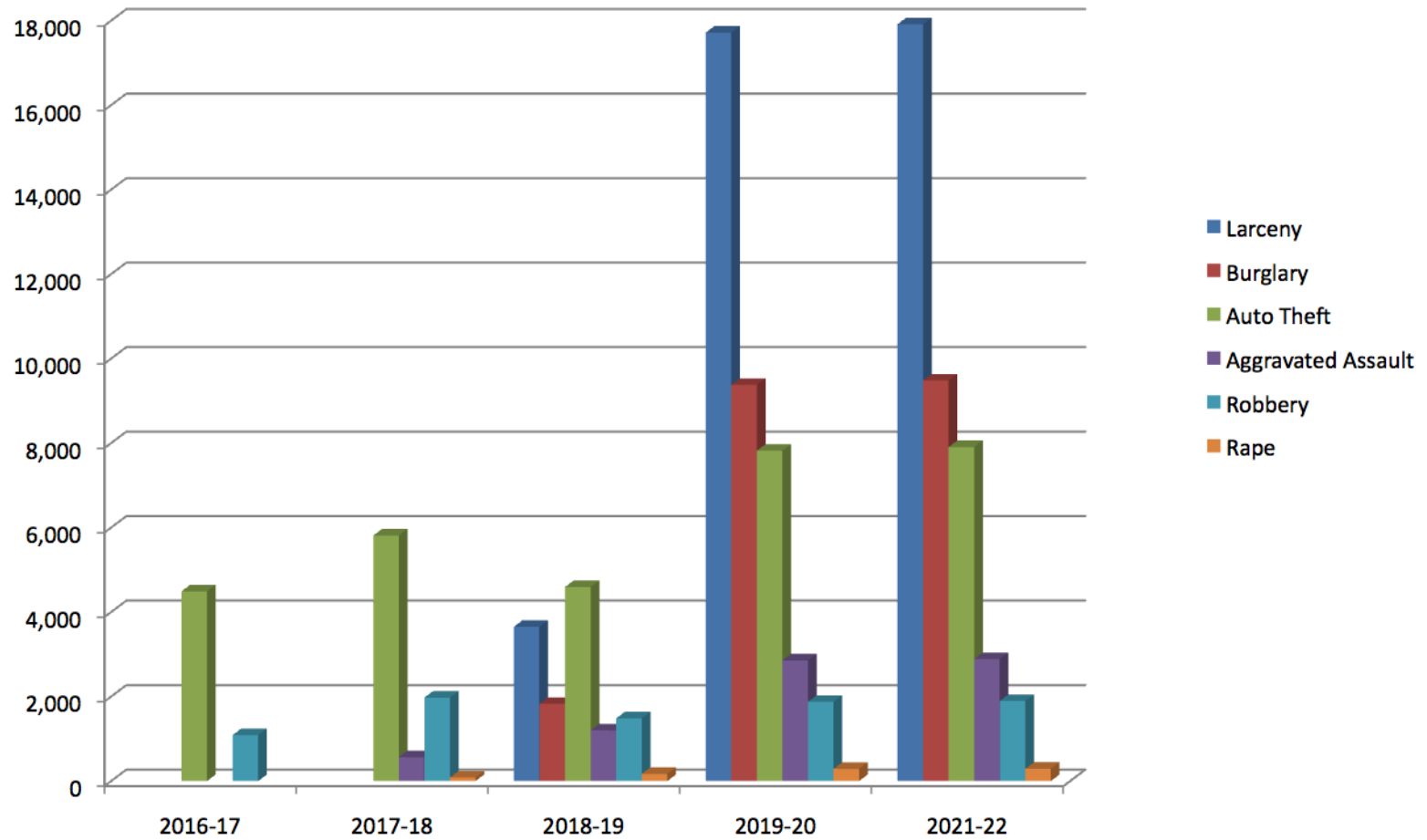| Year	Population
2016	2,756,788
2017	2,788,954
2018	2,821,119
2019	2,853,282
2020	2,885,439
2021	2,917,590
2022	2,949,731
2023	2,981,861
2024	3,013,979
2025	3,046,081

This fiscal estimate includes <u>only</u> the costs to the state of Florida for additional prison admissions following the introduction of casinos. The multi-step analysis is detailed.

First, we use the results of the 2006 study, which estimated the increased number of crimes per 100,000 population in the county for various index crimes. The estimates are by year for the first 5 years following the introduction of casinos to the county. We omit crimes (such as murder) that did not show an increase in the first 5 years, and we omit years in which minor changes are noted (except for rape, due to its seriousness and the fact that it is often underreported).

Estimated Increase in Crimes per 100,000 Population

	Larceny	Burglary	Auto Theft	Aggravated Assault	Robbery	Rape
2015-16			183		32	
2016-17			161		39	
2017-18			206	20	70	3
2018-19	128	64	161	42	52	6
2019-20 and after	614	325	271	99	65	10

We apply those increased rates of index crimes to the 2010 adult population of Miami-Dade County (discussed above), to calculate estimates of the actual numbers of increased crimes expected to occur.

Estimated Increase in Number of Crimes in Miami-Dade County

	Larceny	Burglary	Auto Theft	Aggravated Assault	Robbery	Rape
2015-16			5,045		882	
2016-17			4,490		1,088	
2017-18			5,812	564	1,975	85
2018-19	3,652	1,826	4,594	1,198	1,484	171
2019-20	17,717	9,378	7,820	2,857	1,876	289
2021-22	17,914	9,482	7,907	2,888	1,896	292
2022-23	18,111	9,587	7,994	2,920	1,917	295
2023-24	18,309	9,691	8,081	2,952	1,938	298
2024-25	18,506	9,795	8,168	2,984	1,959	301
2025-26	18,703	9,900	8,255	3,016	1,980	305

Estimated Increase in Number of Crimes in Miami-Dade County
Beginning in the 2nd Year After Casinos Open

Next, we report the actual data on the number of crimes reported (2010) and the numbers of offenders sentenced (2010-11). This allows us to calculate a percentage. For example, we estimate that 2.3% of offenders who commit auto theft will go to prison, while 11.9% of offenders who commit rape will go to prison.

We also report the actual 2008-09 average sentence length for each category of crime. Because these are index crimes, we assume that all offenders sentenced will be incarcerated in a Florida prison and will serve 85% of their sentences. As an example, a person convicted of robbery, would have, on average, been sentenced to 8.2 years in 2008-09 and we assume he will serve 85% of that 8.2 year sentence, or 7 years. Note that by using average sentence lengths for 2008-09, we are again being sensitive to underestimating the impact on Florida's prison system of convictions for serious offenses.

FDLE "Crime in Florida" and DOC "Sanctions Imposed"

	Larceny	Burglary	Auto Theft	Aggravated Assault	Robbery	Rape
2010 Reported	458,179	169,000	41,433	64,960	26,074	5,369
2010-11 Sentenced	14,969	9,694	1,231	3,106	2,153	127
Percentage	3.3%	5.7%	3.0%	4.8%	8.3%	2.4%
Average sentence length, in years, 08-09	2.3	4.6	2.3	4.3	8.2	11.9
85% of sentence served	2.0	3.9	2.0	3.7	7.0	10.1

Based on the ratio of persons sentenced to crimes reported, we calculate the number of persons who will be sentenced to prison in each category of offense for each of the 10 years following the introduction of casinos.

Calculated Number of Offenders Sentenced to Prison

	Larceny	Burglary	Auto Theft	Aggravated Assault	Robbery	Rape	Total by Year
2015-16			150		73		223
2016-17			133		90		223
2017-18			173	27	163	2	365
2018-19	119	105	136	57	123	4	544
2019-20	579	538	232	137	155	7	1,647
2021-22	585	544	235	138	157	7	1,666
2022-23	592	550	237	140	158	7	1,684
2023-24	598	556	240	141	160	7	1,702
2024-25	605	562	243	143	162	7	1,721
2025-26	611	568	245	144	163	7	1,739

New inmates sentenced each year will serve varying terms, so we next calculate the number of additional inmates in the Florida prisons system by year, accounting for the average length of sentence in each category of offense. In other words, an inmate sentenced for an assault would on average receive a 4.3 year sentence. We calculated (above) that 85% of that sentence is 3.7 years, so that inmate would be included below as a "full" inmate in the first 3 years and as 7/10s during the 4th year.

Cumulative Number of New Inmates (reduced for releases)

	Larceny	Burglary	Auto Theft	Aggravated Assault	Robbery	Rape	Increased Prison Beds Needed	Cumulative Increase in Inmate Pop
2015-16			150		73		223	223
2016-17			283		163		223	446
2017-18			306	27	326	2	215	661
2018-19	119	105	309	84	448	6	411	1,072
2019-20	698	643	369	221	603	13	1,475	2,546
2020-21	1,164	1,187	467	351	760	20	1,402	3,948
2021-22	1,177	1,726	472	454	918	27	826	4,775
2022-23	1,190	2,134	478	514	1,005	34	580	5,355
2023-24	1,203	2,157	483	520	1,077	41	126	5,481
2024-25	1,216	2,181	488	526	1,078	48	55	5,536
2025-26	1,222	2,198	491	530	1,119	55	79	5,614

We considered that fact that many of the offenders sentenced will have served some time in county jail prior to transfer to a state prison. Some of the county jail time served may count toward completion of sentence for such inmates. This could have the effect of reducing state prison costs by a few months for some inmates in this estimate. However, this does not eliminate the cost to the taxpayers, it merely shifts them. Whatever "time served" comes out of state prison costs is merely added to county corrections costs. We note that county correctional facilities typically operate at a higher cost per day per person than state prisons, so any impact will actually increase this estimate.

Finally, we use the officially adopted Florida Criminal Justice Estimating Conference costs for prison operations and for the capital costs of new prison beds for 2015-16 and 2016-17. Because the Conference does not project costs beyond that, we use the lower figure for capital costs in subsequent years in a continuing attempt to underestimate the costs of crime from casinos.

The following table assumes that the costs of housing an inmate in a Florida prison do not increase over a 9-year period. Operating costs include food, housing, supervision, medical care, etc. for the first 10 years after casinos open in Miami-Dade County.

Florida Department of Corrections Operating Costs

	Cumulative Increase in Inmate Population	Operating Cost per Inmate	Annual Operating Cost
2015-16	223	$21,818	$4,859,546
2016-17	446	$22,254	$9,924,211
2017-18	661	$22,254	$14,704,784
2018-19	1072	$22,254	$23,851,315
2019-20	2546	$22,254	$56,668,464
2020-21	3948	$22,254	$87,863,776
2021-22	4775	$22,254	$106,253,292
2022-23	5355	$22,254	$119,165,264
2023-24	5481	$22,254	$121,972,276
2024-25	5536	$22,254	$123,188,803
2025-26	5614	$22,254	$124,939,601

The following table assumes that the cost of constructing a new prison bed does not increase over a 9-year period. Capital costs include the costs of construction of new prison facilities for the 10 years after casinos open in Miami-Dade County.

Florida Department of Corrections Facilities (Capital) Costs

	Increased Prison Beds Needed	Capital Costs per Bed	Non-recurring Construction Costs
2015-16	223	$65,328	$14,550,575
2016-17	223	$62,257	$27,763,621
2017-18	215	$62,257	$41,137,581
2018-19	411	$62,257	$66,725,590
2019-20	1,475	$62,257	$158,533,682
2020-21	1,402	$62,257	$245,804,578
2021-22	826	$62,257	$297,250,435
2022-23	580	$62,257	$333,372,511
2023-24	126	$62,257	$341,225,306
2024-25	55	$62,257	$344,628,620
2025-26	79	$62,257	$349,526,590

Finally, we cumulate the costs above. The 4th column in the table shows the annual cost to Florida taxpayers to pay for prison admissions resulting from estimates of additional crime related to the legalization of casinos in Miami-Dade County. The last column shows the cumulative cost to the taxpayers over a 10-year period.
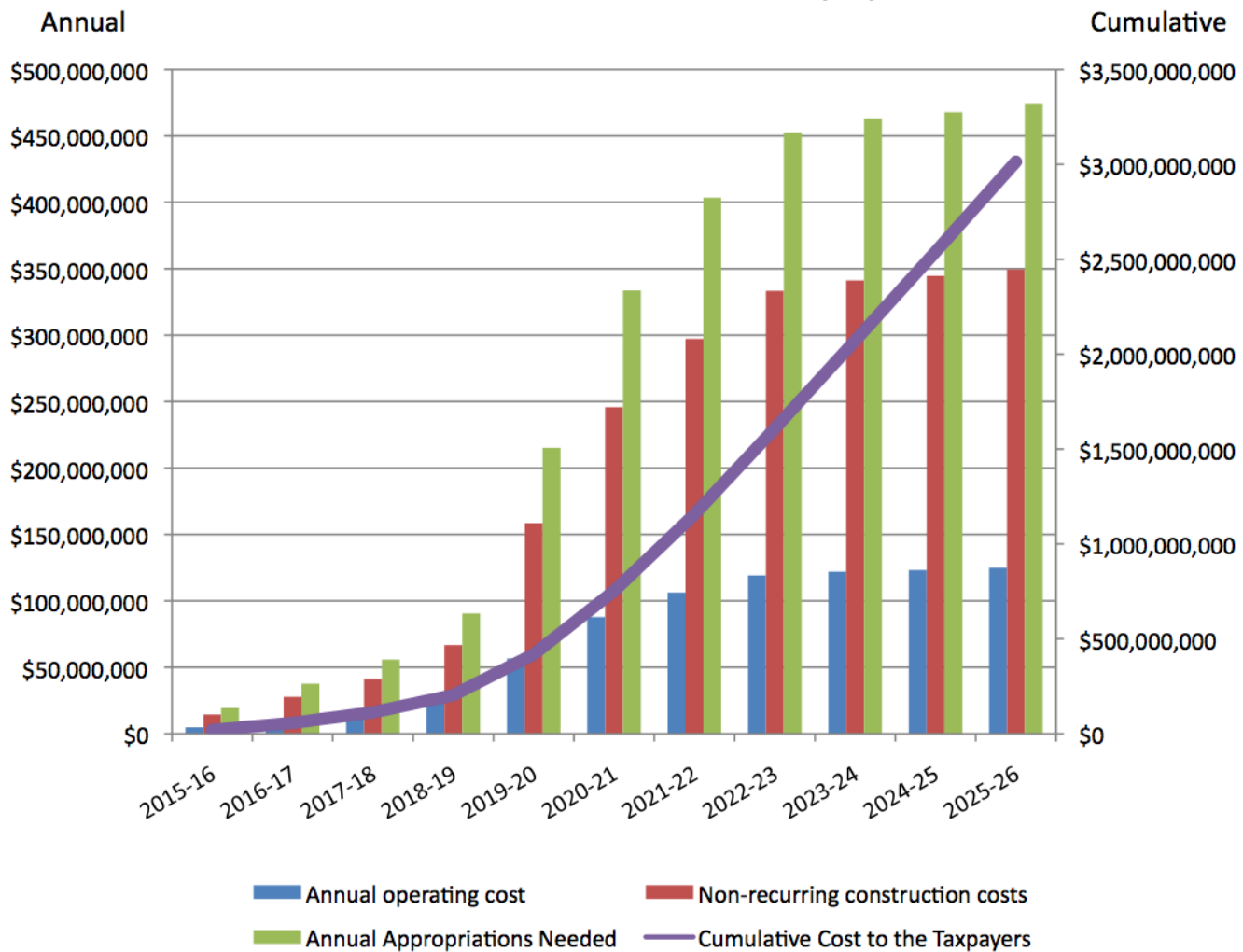
Cost to Florida Taxpayers from Increased Prison Admissions

	Annual Operating Cost	Non-recurring Construction Costs	Annual Appropriations Needed	Cumulative Cost to the Taxpayers
2015-16	$4,859,546	$14,550,575	$19,410,121	$19,410,121
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2025-26	$124,939,601	$349,526,590	$474,466,190	$3,013,910,420

Sources used for the data contained in the fiscal impact calculations:

- Florida Department of Law Enforcement "Crime in Florida: January - December 2010."
- Florida Department of Corrections, "Florida's Criminal Punishment Code: A Comparative Assessment (FY 2010-2011)."
- Florida Department of Corrections, "2009-2010 Agency Statistics."
- Florida Legislature, Office of Economic and Demographic Research, "County Profiles."
- Florida Legislature, Office of Economic and Demographic Research, "Sentence Length by Offense Type: Prison Admissions."
- Florida Legislature, Office of Economic and Demographic Research, "Capital and Operating Costs for the Department of Corrections for Use in Fiscal Impacts by the Criminal Justice Estimating Conference: 2011 Session," adopted at March 2, 2011 Criminal Justice Impact Conference.
- "Population Projections, Miami-Dade County, 2006 to 2030" http://www.miamidade.gov/planzone/Library/research/PopProj2006-2030.pdf

Cost to State of Florida Taxpayers

Literature Review

The penultimate peer-reviewed study of the impact of casinos on crime, in *The Review of Economics and Statistics* (Grinols and Mustard 2006),[i] examined the nationwide relationship between casinos and crime for every year from 1977 to 1996 (based on FBI Uniform Crime Reports and U.S. Census demographic data). This time period is important because, except for Nevada, every state with casinos in 1996 had legalized them during the period studies. Thus crime statistics were available before and after the introduction of casinos.

The study predicts that crime in the immediate area (county) will grow over time after the introduction of a casino. In 1996, 8% of crime could be attributed to casinos, costing each adult (non-gamblers and gamblers alike) $75 a year in 1996 dollars. Five years after a casino opens, the study showed property crime increasing by 8.6% and violent crime increasing by 12.6%. It also looked at crime in neighboring counties and found no decrease there, concluding that crime did not just move, but actually increased.

Specifically, aggravated assault, rape, and larceny begin to show increases in the 3rd year and continue to rise until the 5th year, when they stabilize at the new, higher rate. Robbery begins to show an immediate increase, while burglary does not increase until the 4th year. Auto thefts also show a gradual increase. Only murder rates seem to be unaffected.

The study concluded that during the time just before and just after a casino opening, the rates of certain crime may drop slightly. We would expect this in South Florida because during casino construction there will be a brief period of improved construction labor employment. After the casinos open, there will be in-migration of people looking for casino work and (according to research literature discussed in another report) the unemployment rate will climb back to at least the pre-casino rate.

Douglas M. Walker, Grinols and Mustard's most vocal academic critic, notes that this 2006 study "represents the most comprehensive study of the link between casinos and crime to date." (Walker 2010) Walker has also commented that the Grinols and Mustard analysis "is a noteworthy contribution to the gambling literature. The scope of their analysis is impressive." (Walker 2008)

We note that according to the U.S. Department of Labor's Bureau of Labor Statistics (BLS 2010), almost 5% of the employees at casino hotels in 2010 were in protective service occupations, primarily security guards.

As has been pointed out, the fact that law enforcement agencies do not keep detailed records on whether crimes are gambling-related, or on the costs of incarceration, courts and prosecutors, elevated insurance rates, preventive measures, etc., gambling related crime is often ignored by legislators and can be only estimated by researchers (Henriksson and Lipsey, 1999).

A chapter in *Handbook on the Economics of Crime* addresses "Casinos and Crime in the USA." There, Walker points out that:

> Aside from the simple fact that casinos are likely to attract a large number of potential targets for criminals, and that these people will often be carrying large sums of cash, often drinking alcohol, and are outside of their familiar surroundings, a large source of casino-related crime may be due to 'pathological gamblers'.

Each of the topics mentioned is consistent with the proposition that crime increases when casinos are introduced.

We do not, in this fiscal note, attempt to explain the various reasons that casinos may increase crime. Research for the National Institute of Justice does provide one possible reason. The researchers interviewed arrestees in Las Vegas and in Des Moines concerning the relationship between crime and gambling behavior. They concluded that the "percentage of problem of pathological gamblers among arrestees was three to five times higher than in the general population." They further found that "[n]early one-third of arrestees identified as pathological gamblers admitted having committed robbery in the previous year. Approximately 13 percent had assaulted someone for money. Pathological gamblers were much more likely to have sold drugs than other arrestees." (National Institute 2004)

A 2009 study in *International Gambling Studies* (Clark and Walker 2009), took a narrow approach of analyzing self-reported nationwide data from 6,145 young adults and found statistically significant crime effects for gambling involving cards, horse racing and sports betting (with less impact for lotto and casinos). The study notes that it is consistent with the gambling literature generally in finding that higher gambling losses increase the propensity to crime.

A study of Reno Nevada (Barthe and Stitt 2007) divided the city into 3 areas - one containing the major casinos, a second area adjacent to the first, and a third area outside the second. They found crime rates of 103.5 per 1000 people in the casino area, 19.4 in the second area, and 14.2 in the third.

The authors of one study (Stitt, Nichols, and Giacopassi 2003) matched 6 communities with casinos to 6 similar communities without casinos. They found no overall trend related to increased crimes. However, their 6 casino communities were small, with an average population of about 300,000 for the entire county. They also estimated community populations by adding the number of actual residents to an estimate of the number of tourists who visited. The estimate of the number of tourists is complicated, involving total tourist spending divided by an estimate of the average spent per trip (with data for missing years interpolated), which was then converted to monthly figures using a weighted average. This process of adding tourists to the population means that the <u>number</u> of crimes can increase without increasing the <u>rate</u> of crime.

As an example, suppose a community with a population of 100,000 experiences 100 crimes in a year (with 10 offenders imprisoned). The following year, the population is calculated to be 150,000 and crimes increase to 150 (with 15 offenders imprisoned). That community has <u>not</u> experienced an increase in the rate of crime, but it still has to pay for the 5 additional offenders who are incarcerated. This approach may have meaning for some research, but it is not relevant to this fiscal analysis. We are concerned with the absolute increase in the number of crimes, as that will directly affect Florida's prison population.

A recent study (Reese 2010) attempted to control for the additional tourist population by including the number of new hotel rooms near Indiana riverboat casinos, as well as turnstile count. Specifically, this study tests "whether or not finding that casinos cause rising crime rates after a lag of a few years could actually be finding that casinos cause hotel rooms with a lag and new hotel rooms cause a contemporaneous increase in crime rates." With these adjustments, the author finds "very limited support for the proposition that the casinos themselves increase local crime rates." This study, again, manages to reduce crime <u>rate</u> down by adjusting population up.

If crime is, in fact, a function of tourism, then massive tourism unrelated to casinos should produce telling crime statistics. In 1994 the largest single tourist attraction in the U.S. was the Mall of America in Bloomington Minnesota. It had 38 million visitors, compared to 30.3 million visitors to Las Vegas. There were 436 visitors to the Mall of the Americas for every resident in Bloomington. Given the rationale of some writers, Bloomington should surely have had one of the very highest crime rates in the U.S. "Even adding visitors to residents in the denominator to calculate diluted crime rates, the crime rate per 100,000 visitors-plus-residents was . . . 11.9 for Bloomington. Bloomington received 7.7 million more visitors than Las Vegas, but had a diluted crime rate less than 1/15 of Las Vegas's." (Grinols and Mustard 2006)

 "[T]o the extent that communities with casinos actually invested more resources into law enforcement after the casino opened, then it is entirely possible that casino impacts on crime are understated rather than overstated." (Morse and Goss 2007)

An issue brief on casinos in Alabama (Alabama Policy Institute 2004) reported that 33% of problem and pathological gamblers have been arrested, compared to only 4.5% of non-gamblers. It further reported that 21% of pathological gamblers and 10% of problem gamblers have been imprisoned, compared to less that 1% of non-gamblers. (Citing National Opinion Research Center 1999)

In a 2002 study of Indian casinos using data from 1985 through 1998 (Evans and Topoleski 2002), the authors use FBI's Uniform Crime Report data on Index crimes. They show that beginning four years after casinos open there is a 10% increase in violent crime, auto theft, and larceny. They find that beginning 4 years after a casino opened property crimes increased by 174 per 100,000 people in counties with casinos. For the same period, they find an increase in violent crime that represents 9% of the median value of violent crime in the year a casino opens.

The authors note some of the concerns raised in the literature about the causes for the relationship of casinos and crime:

One concern is that casinos increase problem gambling and gamblers turn to property crime to feed their habit. Another concern suggests that crime increases because the casino attracts people with a greater propensity to commit a crime. Another theory suggests that criminal activity increases after a casino opens simply because more people are clustered in a small area, and criminals go there because of the opportunities to commit crime. Finally, it is also possible that the clustering of people with cash on hand has increased expected returns to crime.

In another study of Indian casinos (Taylor, Krepps, and Wang 2000), researchers found that mega-casinos are in "a class unto themselves" when measuring community impact. They isolated the three largest casinos located near major metropolitan areas – Connecticut's Foxwoods and Mohegan Sun facilities, the Twin Cities' Shakopee Mdewakanton Sioux casinos, and St. Croix Chippewa casinos. The presence of these mega-casinos, unlike other Indian casinos, was correlated with increases in crime. Comparing to non-Indian casinos, they found that the opening of a new commercial casino corresponded with a 21% increase in motor vehicle thefts and a 27% increase in robberies.

The authors of a study on Wisconsin counties (Gazel, Rickman, and Thompson 2001) found that crime rates increase when there is a casino in the county. The largest effects were related to fraud, forgery, embezzlement and possessing stolen property. Adjacent counties, without casinos, experienced a "spillover" effect and also had higher crime rates.

When researchers at the University of Alberta looked at crime in Canada after the introduction of video lottery terminals, they found that the crime rates of robbery and prostitution increased while the rate of shoplifting decreased. We would expect a Canadian study to produce very different results from one in the U.S. because a substantial amount of gambling in Canada is directly controlled by or operated by the government. (Humphreys and Lee 2010)

In one of the older studies that touched on the relation between casinos and crime (Buck et al. 1991), the authors evaluated the impact of casinos on jobs and income on a city center (Atlantic City) and how that impact fell off with distance from the city center. They found that crime had increased at a greater rate since the introduction of casinos. Specifically, they concluded that "The cost of crime resulting from casinos, as reflected in unrealized assessed real estate valuation, appears to be on average $5.2M per square mile in 1986 (current prices in the South Jersey area. For an average community in the area it would amount in 1986 to a total of approximately $105M."

The importance of estimating the impact of casinos on the state as a whole is important as local communities may simply export costs to state taxpayers generally. Some research suggests that "communities may be less concerned about crimes at casinos because the casinos pay for security and residents are not threatened in their streets or homes." Based on data from the Connecticut State Police and the FBI, researchers reported that in Ledyard, Connecticut the "total number of crimes increased 632 percent from 214 in 1991 to 1353 in 1998." However, in 1998 only 364 crimes took place outside the casino. (Baxandall and Sacerdote 2005)

Research by the Connecticut Legislature studied the effects of Foxwoods and Mohegan Sun on crime at the town level. (O'Connell 2002) They found that in the state as a whole the number of FBI index crimes (murder, rape, robbery, burglary, arson, larceny, aggravated assault, and motor vehicle theft) fell 42% from 1983 to 2000. However, limited to just the 5 towns surrounding the Foxwoods and Mohegan Sun casinos, crime increased 2.3% over the same period. Index crimes rose 16% in the 5 years after Foxwoods opened and 21% in the 5 years after Mohegan Sun opened. The largest increases were reported for larceny and aggravated assault. The increases centered in Ledyard and Montville, the locations of Foxwoods and Mohegan Sun, respectively. The number of crimes reported in the towns, when segregated from the casino premises remained relatively constant.

A 2000 GAO study addressed the rate of crime in Atlantic City before and after casinos began operating in 1978. (GAO 2000) The GAO table of crime rates, both with tourists and other visitors and with only the resident population is reproduced. The volume of crime is striking. Based just on the resident population, crime quickly increased by 100% to 300%. This is the volume of crime that has to be handled by the local police, the state court system, and the state prison system. Only by adding in the large numbers of tourists and nonresident workers, can the data be made to show a more conservative increase in the rate of crime of 0% to 50%.

Total Crimes per 10,000 Population

Year	United States	New Jersey	Atlantic City (based on the population adjusted to include visitors and nonresident workers)	Atlantic City (based on unadjusted population
1977	507.76	511.39	695.89	1,006.00
1978	514.03	520.72	768.66	1,336.00
1979	556.55	582.06	798.62	1,678.00
1980	595	640.13	1079.29	3,109.37
1981	585.82	617.98	922.29	3,132.91
1982	560.36	567.61	986.85	3,863.68
1983	517.5	516.34	947.99	4,168.01
1984	503.13	485.55	763.01	3,537.48
1985	520.71	509.44	857.61	4,203.70
1986	548.04	524.13	850.56	4,179.05
1987	555	526.15	749.9	3,963.67
1988	566.42	529.53	833.44	4,593.15
1989	574.1	526.94	794.57	4,323.13
1990	582.03	544.72	800.75	4,107.04
1991	589.78	543.13	808.8	4,047.54
1992	566.02	506.44	721.22	3,597.11
1993	548.44	480.08	641.31	3,144.05
1994	537.35	466.09	509.63	2,555.94
1995	527.59	470.37	538.08	2,902.93
1996	508.66	433.29	525.89	2,874.49
1997	493	405.7	526.49	2,776.26

(GAO 2000)

Note that while the crime rates above decrease in the late 1990s, crime rates in the U.S. generally were in decline. Atlantic City crime rates remained above the national and state averages throughout the period shown.

The GAO study shows similar charts, with similar patterns for property crime, prostitution, and drug arrests.

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We here note the on-going debate between Grinols and Walker, whose work is cited herein, over the correct way to evaluate the crime data. After a thorough of all the published articles authored by both professors, we simply find Grinols work to be more thorough and persuasive. Much of Dr. Walker's published work, criticizing both Grinols and others, merely lists what he perceives as methodological flaws in work critical of casino gambling, often repeating caveats contained in the original researcher's work. S*ee, e.g.*, Walker 2004.

We do not in any way demean Walker's credentials as an economist. But we do believe some of his arguments, while relevant in an academic economics discussion, do not add value in a public policy debate. For example, he repeatedly stresses how crime rates (crime to population ratios) should include tourists. For purposes of estimating state prison effects, this approach merely hides the ball. To be intellectually honest, one would have to add the additional tourist population <u>and</u> subtract all the local residents who travel out of the community for business or entertainment (presumably reasons for tourism). No research has ever attempted to add this second step. We believe it is far more reasonable to omit <u>both</u> the tourists added to the community <u>and</u> the residents traveling outside the community.

We further note that we are fully aware that Grinols work has been criticized because he is a Christian, but we can find no bias in his economic analyses, only the most detailed economic studies that have been produced. *See e.g.*, Monahan 2007.)

In 2004, Grinols wrote:
> I have studied the economic implications of casinos for twelve years. In that time I have had to think carefully about the issues and determine fully my own views in light of the data and my research. I have received income from neither the gambling industry nor from its opponents. I do not accept honoraria for my testimony or public addresses, and my research has not been directly or indirectly funded or paid for by progambling or antigambling organizations or individuals. . . This is one advantage of a research university as the provider of public services. . . .

From: Earl L. Grinols, *Gambling in America: Costs and benefits*. Cambridge, UK: Cambridge University Press, 2004.