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Markets:
Evidence from Canada**

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revised June 2013

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New Casinos and Local Labor Markets: Evidence from Canada

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Abstract

The local labor market effects of new casinos are examined by comparing the employment and earnings growth in areas with new casinos to the growth in areas with existing casinos and without casinos, exploiting numerous casino openings across multiple locations in Canada over several time periods. The opening of a new casino directly doubles the employment and earnings of the local gambling industry within five years, while this growth does not appear to continue beyond this period. Indirect positive spillovers are limited to the related local hospitality and entertainment industries. For every job created in the gambling industry, roughly one to two additional hospitality jobs are created. Increased gambling employment does not appear to increase employment in any other local industry.

Keywords: casinos, gambling, job multipliers, local economic development, local labor markets.

JEL Codes: J21, L83, R11.

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1 Introduction

New casinos have the potential to generate both positive and negative impacts on the local economy, including tangible benefits such as local economic development and increased tax revenues, and negative consequences like increased problem gambling, crime, bankruptcy, and traffic (Eadington, 1999). Because these benefits and costs are of public concern, governments closely regulate the supply of casinos and typically require some positive economic benefit to outweigh any negative costs when expanding access to legal gambling. One common justification for a new casino is that it will lead to new job creation and enhanced earnings in the local labor market, due to a casino-induced increase in local labor demand, which may occur only in the gambling industry or in other local industries as well.¹ While it has been claimed that new casinos can generate significant spillovers outside of gambling, there is little consistent evidence to support this claim. For these reasons, it is important to properly assess these local labor impacts, in order to quantify just how many jobs may be created, or perhaps even lost, both inside and outside of the gambling industry.

The identification of the impacts of a new casino on a local labor market can be difficult.² Proper identification must rely on both the location and the timing of new casinos, as well as an appropriate counterfactual addressing what would have happened if a new casino had not been built. Without proper identification, these impacts could be overstated or understated, such as where underdeveloped locations with relatively low employment and earnings are targeted for a new casino or when the timing of a new casino opening is more influenced by the conditions of the overall economy rather than by the conditions specific to the locality. Previous research examining these effects had focused on the United States (Rephann et al., 1997;

¹A casino opening can be interpreted as a type of local labor demand shock. This particular shock is unlikely to produce many of the general equilibrium effects described by Moretti (2011). Price adjustments will be kept to a minimum, as wage changes are likely to be concentrated within the gambling industry. Productivity spillovers will also be limited as casinos are entertainment venues that hire mostly unskilled workers.

²As stated by Eadington (1999), "... the methodology to distinguish fully between absolute measures of economic impacts and incremental impacts - in comparison to what would have taken place in the absence of casino authorization - is still in need of considerable refinement."

Evans and Topoleski, 2002; Garrett, 2004; Cotti, 2008), but this may not be an ideal setting, as casinos there tend to be clustered in either highly-agglomerated tourist destinations or in remote areas, and are likely to be privately operated, making it difficult to disentangle the impact of new casinos from other effects.

This paper analyzes the effects of new casino openings on local labor markets in Canada. Canadian casinos are distributed more uniformly across the country, are more likely to be located in populated areas, and are more likely to be government run than casinos in the United States, all of which enhance the identification of these impacts. In addition, the restricted-access data from the Canadian Census of Population contain detailed geographic and industry identifiers which allow for the precise definition of the local labor markets and the separation of the direct impacts in the gambling industry from the indirect impacts in non-gambling industries. Under the quasi-experimental identification strategy of this study, treatment areas with new casinos are paired to two unique comparison areas, areas with existing casinos and areas without casinos, which are used to fill in the counterfactual for the treatment areas.

All of the estimation techniques generalize over three five-year time periods, so that each estimate is interpreted as the average impact of a new casino within a locality, making it less susceptible to the influence of any single time period. First, the direct growth within the gambling industry is estimated separately for each of the three area types. Second, the indirect growth is measured for the related and other local industries, by estimating the differential growth in labor outcomes between the treatment areas and each of the comparison areas. A nearest-neighbor matching estimator is additionally used to further restrict the comparison sets. Third, the local job multipliers are estimated, which have not been previously used to address the impacts of new casinos in the literature. This is done while taking into account the endogeneity of the employment relationship between the gambling and non-gambling industries through instrumentation.

The results of this study confirm the existence of positive local labor market gains following the opening of a new casino. The local gambling industry experiences the direct impact, which is a doubling of its employment and earnings in areas with new

casinos, within one to five years following the casino opening. These effects were insignificant in areas with existing casinos, however, suggesting that the local effects of a new casino are short-lived. The indirect spillover effects were also positive and significant but mainly limited to differential employment growth in the closely related local industries of hospitality and entertainment, specifically accommodation, food, and beverage services and other amusement and recreation services. For every job created in the gambling industry due to a new casino, one to two additional jobs are created in the hospitality industry. Contrary to some previous findings in the literature, there are no significant employment or earnings effects in the other local industries of construction, retail trade, or all other services.

2 Context and Motivation

2.1 Previous Research

Much of the previous research on the impact of casinos has focused on the assessment of negative outcomes, like the social costs of personal bankruptcy (Barron et al., 2002; Daraban and Thies, 2011), crime (Grinols and Mustard, 2006; Reese, 2010), and other possible adverse outcomes, like alcohol-related traffic deaths (Cotti and Walker, 2010). On the other hand, research on positive outcomes has typically addressed overall local growth (Walker and Jackson, 1998, 2007) and increases in net public revenues (Siegel and Anders, 1999; Kearney, 2005). Only a handful of previous studies have examined the local labor market effects of casinos, despite the fact that new job creation is often mentioned in the public debates involving casino openings. This small but growing literature, all using data from the United States, offers a variety of identification strategies, each with a different source for potential bias, and thus presents mixed evidence regarding the impacts that casinos have on local labor markets.

One of the notable papers in the literature, Rephann et al. (1997), assessed the economic impact of new casinos opened from 1988 to 1994 using Regional Economic Information System data. The analysis matched the growth in employment and

earnings for sixty-eight U.S. counties where new casinos opened to sixty-eight non-casino counties, based on observable county characteristics. The largest differential employment growth due a new casino took place in the service industry, which included gambling operations, though positive growth differences were also found in construction, finance, insurance, and real estate, and retail trade. The differential earnings growth was found to be larger in magnitude than the differential employment growth. Unlike other research, this paper used a unbiased differential growth estimator like the one used in the current study. However, their results may reflect confounding negative local economic conditions in new casino counties before casinos were built or unobservable location-specific heterogeneity, and they did not distinguish between the direct and indirect impacts of casinos.

Evans and Topoleski (2002) analyzed the employment effects of new casinos in Native American tribes using data collected by the U.S. Bureau of Indian Affairs. The analysis compared labor outcomes in tribes which opened casinos to those that did not, pooling data from 1983 and every other year from 1989 to 1999. In the four years after a casino opened, the employment for tribes with casinos increased by twenty-six percent relative to tribes without casinos. Some of this employment effect took place outside of the tribes and these effects were greater and more significant for larger tribes, with the biggest gains occurring in rural areas. The estimation controlled for tribe and year fixed effects, as well as for county demographics. That said, aggregate employment was the only outcome variable used, and the results may not be generalizable as the impact of new casinos on tribal land may differ from the impacts identified in other settings.

In another study, Garrett (2004) investigated the impact of casino openings in six mid-western U.S. counties that opened new casinos in the 1990s using trends of monthly household employment data from January 1986 to December 2001 and a comparison of payroll employment data for 1992, 1993, 1994, and 1997 to that of 2001. The trend analysis compared the actual employment trend in casino counties to what would have taken place absent the casinos, based on a uni-variate ARIMA forecasting model. Rural counties experienced the largest gains in employment relative to their forecasted employment trend. Analyzing employment growth before and

after a casino opening by industry, a new casino was associated with large increases in casino employment, as well as in construction, finance, and service employment. Some crowd out effects were reported, as manufacturing and retail trade employment decreased. While this study analyzed casino employment separately from other local sectors to isolate the direct and indirect effects, it only used data from six localities, did not investigate any earnings effects, and did not test for statistical significance.

Cotti (2008) examined payroll data from the Quarterly Census of Employment and Wages for all U.S. counties between 1990 and 1996, comparing outcomes in all counties with new casinos to all non-casino counties, controlling for county-level and quarterly fixed effects as well as other variables. Total county-level employment was found to increase by eight percent after a casino opened, relative to counties without a casino, with large positive employment and earnings per worker increases in the entertainment industry and modest positive earnings per worker increases in the hospitality industry, especially in the accommodations sub-sector.³ The largest effects occurred between one to three years after a casino opened and in the smallest population counties. Despite the rigorous analysis, this study did not separate the gambling sub-sector from the larger entertainment sector, and it may have used a potentially biased estimator and problematic county-level controls.

2.2 Casino Gambling in Canada

While most previous studies have focused on casinos and labor market evidence for the United States, casino gambling in Canada differs in several important ways. In the U.S., casinos tend to be located either in a few highly agglomerated, tourist destinations, such as Las Vegas or Atlantic City, or in remote locations, such as on Native American Tribal land or on river boats, making their results difficult to generalize.⁴ Canadian casinos, on the other hand, are neither concentrated in tourism-focused ar-

³Reese (2010) found that the number of hotel rooms increased in the third, fourth, and fifth year following the opening of riverboat casinos in Indiana counties from 1994 to 2004, which would support these employment increases for the accommodation sub-sector and is consistent with the findings of the current paper.

⁴Casino employment may also be spread across multiple U.S. counties, potentially leading to measurement problems when the unit of analysis is a county (Garrett, 2004).

cas like Las Vegas, nor located in remote areas. Instead, Canadian casinos are rather uniformly distributed across the country and are likely to be located near populated, urban areas, in mid-sized to large cities. Given that more urbanized areas are less likely to experience any tangible economic benefits from a new casino opening relative to rural areas (Eadington, 1995), the estimates generated for Canada may represent a lower bound for the local labor market impacts of new casinos.

Related to this difference in casino locations, tribal casinos have existed in the U.S. since the Indian Gaming Regulatory Act was passed in 1988, leading to a disproportionately high number of casinos on Native American land. First Nations casinos in Canada are a more recent and less prevalent phenomenon, where only a few casinos exist on tribal land, all opened after 2000. Tribal lands tend to be economically underdeveloped and have high existing unemployment, which could lead to an upward bias in the measurement of the labor market impacts of new casinos. The relative lack of tribal casinos in Canada reduces this potential bias.

Though the majority of U.S. casinos are privately operated, many Canadian casinos are either run by the government (Chang et al., 2010) or operate under a charitable gambling model (Campbell, 1994). Under a charitable gambling model, a local charitable organization applies for a license to operate a local casino for a specified amount of time and keeps a portion of the revenues generated at the casino in exchange for providing unskilled labor for the operation.⁵ This system assures that a portion of the revenues generated at a casino are returned directly to the community in the form of increased services by local charitable organizations, rather than distributed as monopoly profits to stockholders or casino owners. This may generate more positive local spillovers of a new casino in Canada, if the services provided by charitable organizations produce further benefits in the local labor market. Additionally, this difference could make the number and location of Canadian casinos less sensitive to aggregate or local economic conditions, as casinos are more likely to be viewed as a source of revenue for the greater community instead of private profit and may lessen any consumer aversion to gambling.

⁵Often, the revenues earned are enough to fund the operation of the charitable organization for one or more years.

3 Data Description and Definitions

3.1 Casino and Labor Market Data

The location and timing of casino openings across Canada were compiled from various sources, including the web pages of each provincial gambling regulatory agency. This data covers all of the casinos openings in Canada up to 2005 for the seven provinces containing casinos.⁶ Table 1 displays the number of new casinos opened by province and provides the number of Census divisions represented within each province, for every time period corresponding to the available Census data. Before 1991, there were seven existing casinos in Canada, all concentrated within two western provinces. This was followed by a boom in casino construction, with frequent casino openings across Canada. From 1991 to 1995, fourteen new casinos opened in thirteen Census divisions within six provinces. From 1996 to 2000, twenty-three more new casinos opened in twenty-one Census divisions, including one new province. And, twelve new casinos opened across five provinces from 2001 to 2005, with one province differing from those represented in the previous period.

The labor market data are constructed from four waves of the Canadian Census of Population (1991, 1996, 2001, and 2006) spanning fifteen years.⁷ Previous research used data over shorter time spans which may be vulnerable to unrelated labor market shocks occurring simultaneously with casino openings. These waves are used to estimate changes in the labor market outcomes over three five-year intercensal time periods (1991-1996, 1996-2001, and 2001-2006), which are then stacked to generate a single set of estimates for each estimation procedure. This generalization addresses potential timing endogeneity through an approach recommended by Imbens and Wooldridge (2009, pgs. 68-69), further diluting the influence from any single time

⁶The Northwest Territories and the territory of Nunavut, as well as the provinces of New Brunswick, Newfoundland and Labrador, and Prince Edward Island, are all omitted from the analysis for not containing a casino before 2005. Although the first Canadian casino opened in the Yukon Territory in 1972, this territory is also omitted due to a relatively small population and no within-territory geographical variation.

⁷Each Census wave contains responses for the previous calendar year.

Table 1: Number of New Casinos by Province, 1980-2005

Province	Number of New Casinos (in Census Divisions)			
	Prior to 1991	1991-1995	1996-2000	2001-2005
Alberta	5 (2)	4 (4)	7 (5)	1 (1)
British Columbia	2 (2)	3 (3)	3 (3)	6 (3)
Manitoba	-	2 (1)	-	2 (2)
Nova Scotia	-	2 (2)	-	-
Ontario	-	1 (1)	7 (7)	2 (2)
Quebec	-	2 (2)	1 (1)	-
Saskatchewan	-	-	5 (5)	1 (1)
Total	7 (4)	14 (13)	23 (21)	12 (9)

Notes: Authors' calculations using casino opening data compiled from various sources. Details on casino names, locations, and year of establishment are provided in Appendix Tables A1a through A1d.

period, as only the average effect of a new casino will be estimated.⁸

The individuals in this data are restricted to a sample of employed, prime age workers who report positive earnings.⁹ These individual-level records are then aggregated to their respective local labor markets using Census sample weights, in order to generate labor outcomes representative of each local working population. The local labor market outcomes analyzed in this study include total employment, total earnings, and earnings per worker (total earnings divided by total employment). Total earnings and earnings per worker are defined from gross wages and salaries before deductions, including bonuses and tips, and are converted to real 2005 dollars using the Canadian consumer price index.

The restricted-access version of the Canadian Census data contain detailed geographical descriptors which are used to establish the Census division as the local

⁸An alternative approach making use of information from the previous period in the current period would be limited to averaging over only two of the three available time periods, thereby increasing the influence of any one period over the generalized estimates.

⁹The earnings restriction is more inclusive than the employment restriction, but the two samples are not entirely overlapping, resulting in a somewhat smaller sample when the restrictions are jointly implemented.

labor market definition for this study. Census divisions are sub-provincial geographic areas containing one or more municipalities. In some provinces, Census divisions may correspond to counties. These localities may also contain one major town or city, although many do not contain a sizable urban area. Strict concordance in Census division boundaries is maintained by harmonizing any changes over the three intercensal periods at the smaller Census sub-division level using the cross-walk files provided by Statistics Canada.

Census divisions are better definitions of local labor markets for the purposes of this paper than the larger geographical areas identified in the public-use Census data, as the impact of a new casino is likely to be confined to a smaller area within its proximity. Canadian provinces, containing multiple Census divisions, would represent areas too large to reflect the local impacts of new casinos and would not provide enough geographical variation across Canada. On the other hand, smaller Census sub-divisions, which are also identified in the restricted-access Census data, may not contain enough workers to properly represent a local labor market, especially when the data are further disaggregated by industry. The results from an analysis at the Census sub-division level would also not likely qualify for public release under the Statistics Canada vetting process.

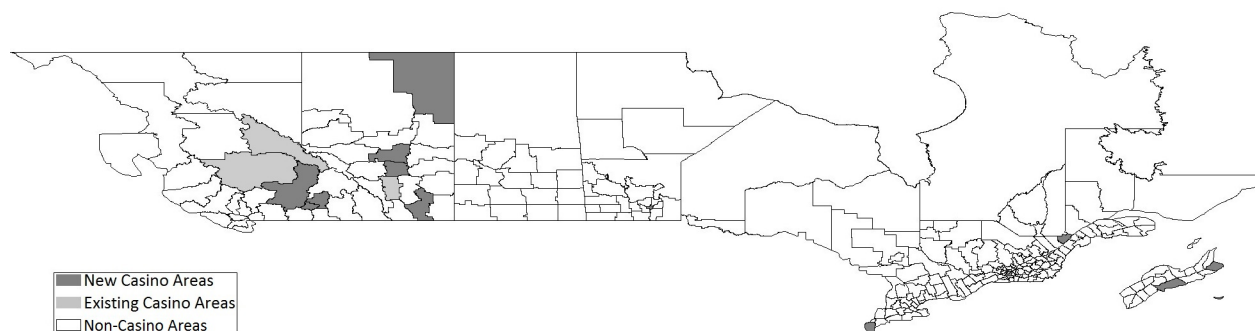
Detailed industry codes provided in the restricted-access Census data are used to identify the sector of employment for each worker in the sample. These codes help isolate the direct effects of a new casino in the gambling industry from any possible indirect spillover or crowd out effects of a new casino into other local industries. Most previous research did not distinguish between these direct and indirect effects due to a lack of disaggregated data. The local labor market outcomes are analyzed at the industry level using either the 3-digit Standard Industrial Classification (SIC) or the 4-digit North American Industry Classification System (NAICS) based on availability.¹⁰ Strict concordance is also kept for these industry classifications over time using cross-walk files which match the SIC and NAICS at the 3-4 digit level.

¹⁰Only the SIC is available for 1991 and 1996, both classifications are available in 2001, and only the NAICS is available for 2006.

3.2 Treatment and Comparison Groups

The particular quasi-experimental approach used in this paper has not been previously applied to measure the impact of casinos on local labor markets. Implementing this approach requires distinct treatment and comparison group definitions, with three area types used for this purpose: Census divisions where new casinos were built in a given intercensal time period, Census divisions with existing casinos that opened in a previous period, and Census divisions with no casino in any previous period. The first of these area types, Census divisions with new casinos, serves as the treatment group. The other two area types serve as two unique comparison groups, defining separate counterfactuals for what would have happened in the treatment areas had a new casino not been opened.¹¹ By definition, a Census division cannot represent both a treatment and comparison area within the same intercensal period.¹²

Figure 1a: Census Divisions with New and Existing Casinos, 1991-1995



Notes: Authors' calculations using casino opening data compiled from various sources. From 1991 to 1995, there were 14 new casinos built over 13 Census divisions and 7 existing casinos over 3 Census divisions. Details on the casino names, locations, and year of establishment are provided in Appendix Tables A1b for the new casinos and A1a for the existing casinos.

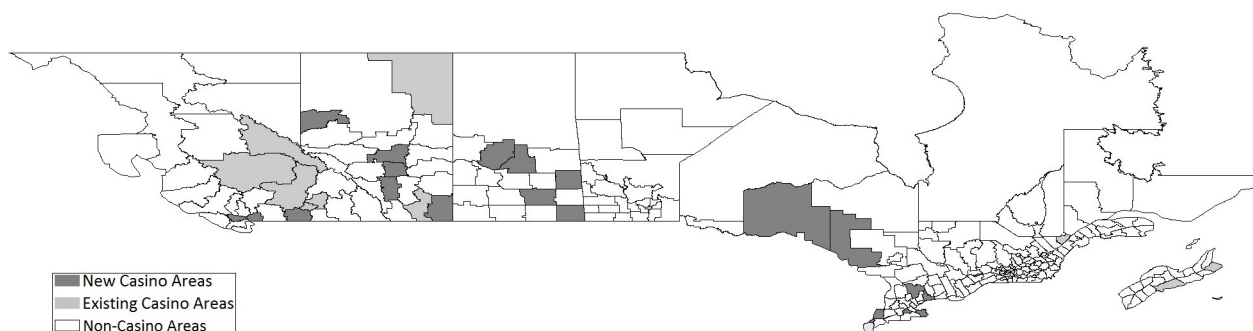
While most previous studies had either used non-casino areas alone or both ex-

¹¹An alternative counterfactual could be formed from areas with casinos that were planned but not opened. However, this set would only likely contain a handful of observations for Canada, which would not be enough for a representative comparison set.

¹²For example, if a Census division has a new casino built within a given time period, it is considered a treatment area regardless of whether it had an existing casino or not.

isting and non-casino areas together as a comparison set, none have separated these two area types for independent inference. This distinction is important, as the measurement of the impact of a casino opening upon a local labor market may be subject to selection bias (Grinols and Mustard, 2008a,b; Walker, 2008a,b). Comparing outcomes in areas with new casinos to areas with existing casinos avoids this selection issue, because both area types have selected to open a casino. However, this selection bias may still be present when comparing outcomes in areas with new casinos to areas with no casinos. This distinction also allows for the impact of a new casino to dissipate over time when comparing new casino areas to existing casino areas.

Figure 1b: Census Divisions with New and Existing Casinos, 1996-2000



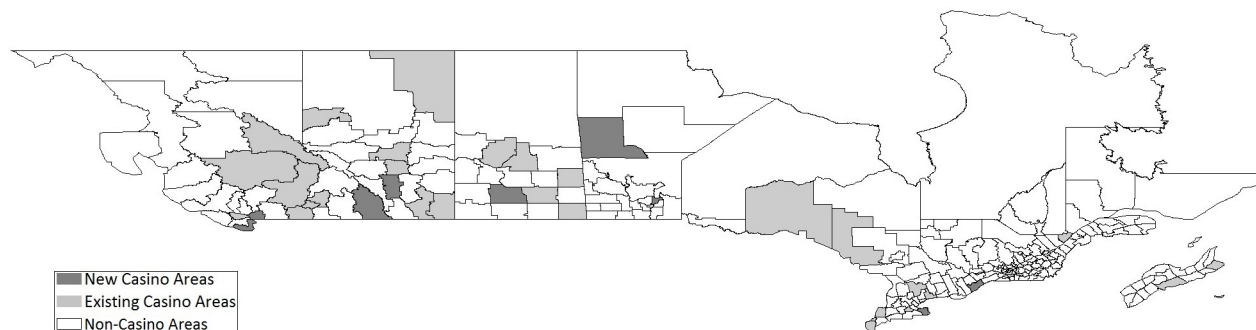
Notes: Authors' calculations using casino opening data compiled from various sources. From 1996 to 2000, there were 23 new casinos built over 21 Census divisions and 21 existing casinos over 13 Census divisions. Details on the casino names, locations, and year of establishment are provided in Appendix Tables A1c for the new casinos and A1a and A1b for the existing casinos.

The Census divisions in each of these groups are identified in Figure 1a for the 1991-1995 intercensal period, Figure 1b for the 1996-2000 period, and Figure 1c for the 2001-2005 period. Census divisions where a new casino was opened are shaded dark gray, Census divisions with an existing casino are in light gray, and the white Census divisions had no casino. New casino openings are distributed relatively uniformly across Canada during each of the three intercensal periods. The number of existing casino areas grows from the first period to the last and the number of non-casino areas diminishes.¹³ Because the indirect growth and local job multiplier

¹³There are also a few Census divisions with new casinos built in more than one intercensal

estimation rely on the representativeness of the comparison sets, the presence of fewer or more of these areas may affect the precision of those estimates.

Figure 1c: Census Divisions with New and Existing Casinos, 2001-2005



Notes: Authors' calculations using casino opening data compiled from various sources. From 2001 to 2005, there were 12 new casinos built over 9 Census divisions and 44 existing casinos over 31 Census divisions. Details on the casino names, locations, and year of establishment are provided in Appendix Tables A1d for the new casinos and A1a, A1b, and A1c for the existing casinos.

Table 2 contains the summary statistics for the average Census division within each area type. The average population in Census divisions with new casinos is only somewhat larger than those with existing casinos, with total employment and total earnings following a similar pattern across the area types. Earnings per worker is slightly higher in Census divisions with existing casinos than in Census divisions with new casinos, although this difference is small and may not be statistically significant. Existing casino areas represent the better comparison group for the outcomes in new casino areas, as both area types have casinos which mitigates any selectivity issue, and the population and labor market characteristics are quite similar between these two areas. However, the average population in new casino areas is much larger than in Census divisions which never had a casino. Interestingly, the opposite is true for new casino and non-casino counties in the U.S., as Wenz (2007) reported that U.S. counties with new casinos have much smaller populations than non-casino counties.

period, slightly reducing the number of existing casino areas over time.

Table 2: Generalized Local Means and Deviations by Area Type

	Generalized Local Means and Deviations	New Casino Areas	Existing Casino Areas	Non-Casino Areas
All Individuals:	total population	357,340 (501,812)	265,050 (386,674)	81,830 (202,707)
All Workers:	total employment	158,230 (224,497)	116,960 (168,482)	34,760 (89,710)
	total earnings (000s)	6,090,000 (9,180,000)	4,430,000 (6,410,000)	1,310,000 (3,820,000)
	earnings per worker	35,390 (5,005)	36,850 (6,058)	32,170 (5,207)
	n	86	94	1,345

Notes: Authors' calculations using data from the 1991, 1996, 2001, and 2006 Canadian Census. The observation numbers in this table are double the number for each area type due to the inclusion of both the pre and post year for each of the time periods.

4 Direct Labor Market Impacts

The direct impact of a new casino will only occur within the gambling industry, defined in this study as gambling operations (NAICS 7132), a sub-sector of the amusement and recreation industry. Gambling operations include any employment related to bingo parlors, card rooms, casinos (except casino hotels), gambling cruises, lottery operations, and lottery ticket vendors (except retail outlets). Excluded from this gambling definition are employment in casino hotels, which falls under the hospitality sector, and employment in the regulation of gambling, which includes gambling control boards and lottery control boards and falls under public administration.

The direct growth estimation for the gambling industry is separately estimated for areas with news casinos, areas with existing casinos, and areas without casinos, under the regression specification:

$$\ln(emp_{cpt}) = \alpha + \delta \cdot y_t + prov_p \cdot \eta + \varepsilon_{cpt} \quad (1)$$

where $\ln(emp_{cpt})$ is the natural log of the local labor market outcome of interest (total employment, total earnings, or earnings per worker), y is a binary indicator equal to one if it is the post year in a given time period and zero if it is the base year, $prov_p$ represents a vector of provincial fixed effects to capture the unobserved heterogeneity in provinces, like province-specific gambling regulation and provincial labor market characteristics, and ε_{cpt} is an error term which reflects other unobservable factors that may affect local labor market outcomes. The subscripts c and p refer to Census division and province, respectively, and t refers to one of the three five-year intercensal time periods. All of the estimation uses stacked local labor market data over all three time periods, which allows the parameter on the year indicator variable, δ , to reflect the average generalized growth rate for the local gambling industry.

Table 3: Generalized Local Direct Growth in Gambling Operations by Area Type

	Generalized Local Direct Growth	New Casino Areas	Existing Casino Areas	Non-Casino Areas
Gambling Operations:	total employment	0.977*** (0.290)	0.124 (0.175)	0.159* (0.087)
	total earnings	1.223*** (0.339)	0.305 (0.211)	0.312*** (0.121)
	earnings per worker	0.246*** (0.073)	0.181*** (0.055)	0.152*** (0.059)
	n	84	94	908

Notes: Authors' calculations using data from the 1991, 1996, 2001, and 2006 Canadian Census. All regressions control for provincial fixed effects (Ontario is the omitted province). Stars denote the statistical significance of the estimates (* for 10%, ** for 5%, and *** for 1%). Huber-White robust standard errors are in parentheses. The observation numbers in this table are double the number for each area type due to the inclusion of both the pre and post year for each of the time periods.

According to Table 3, which summarizes the results from the nine separate regressions, the direct growth in the gambling industry is substantial for all of the local labor market outcomes in Census divisions with new casinos. This is as expected, given that the gambling industry is relatively small and casinos are relatively large operations. Total employment nearly doubled over a five-year period, experiencing

97.7% growth, total earnings more than doubled with 122.3% growth, and earnings per worker increased by 24.6%. These growth estimates for the new casino areas, most of which had no existing casinos, reflect the generalized increase in the local gambling industry attributable to the new casino.

In Census divisions with existing casinos, only earnings per worker increased over the sample period, by 18.8%, with statistically insignificant changes in total employment and total earnings. This insignificance suggests that the local labor market impacts of a new casino are a relatively short-term phenomenon that may not extend beyond the five-year period following the new casino opening. That said, non-casino Census divisions experienced small magnitude growth in all three of the local labor market outcomes. This suggests that there is some average secular growth in the gambling industry over the three periods of time which is not attributable to the presence of a new or existing casino and may instead reflect growth in other forms of gambling like bingo halls and video lottery terminals.

5 Indirect Labor Market Effects

5.1 Quasi-Experimental Identification

The variation in the location and timing of casino openings across Canada is exploited in this paper in order to properly identify the local labor market spillovers resulting from new casinos, with new casino areas forming the treatment group and existing casino and non-casino areas forming the comparison groups. This quasi-experimental approach has several fundamental differences with the previous studies that have used potentially biased estimators, complicating the interpretation of their results. These differences can be shown by defining the various conditional mean functions for these estimators.¹⁴

Suppose that the conditional mean function for a local labor market outcome, emp_{cy} , reflects variation across Census divisions, c , and over time, y . Assuming the additive separability of these geographical and temporal effects, the simplest

¹⁴The notation follows Angrist and Krueger (1999) and Imbens and Wooldridge (2009).

form of this condition mean function is the summation of these effects, given by $E[emp_{cy}] = \beta_c + \beta_y$, where β_c is a Census division specific effect common over all years and β_y is year specific effect common across all Census divisions. If Census divisions are further restricted to only those with new casinos, an exogenous shock to the local labor market resulting from a new casino being built, δ , can be added:

$$E[emp_{cy}|c = \text{new casino}] = \delta + \beta_c + \beta_y \quad (2)$$

where *new casino* means that a new casino was opened in these Census divisions.

In order to isolate the impact of the new casino, δ , a comparison can be made between the local labor market outcomes before and after a new casino opens within a Census division using a “pre versus post” estimator. By comparing the growth in the local labor market outcome variables within the same Census division over time, from the base year ($y - 1$) to the post year (y), the Census division specific effect, β_c , can be eliminated. However, this approach does not provide an unbiased estimate of δ , because the time specific effect, β_y , remains. Garrett (2004) used this approach by comparing outcomes before and after a casino opening in only those areas with new casinos.

Alternatively, a “treatment versus comparison” approach compares the local labor market outcomes in areas with a new casino to areas without new casinos within the same year following a casino opening, which eliminates the time specific effect, β_y . But this approach also does not generate an unbiased estimate of δ , as now the Census division specific effect, β_c , remains. A similar approach was used by Evans and Topoleski (2002) and Cotti (2008), although each attempted to address this bias by controlling for local area fixed effects (for Native American tribes and U.S. counties, respectively).

In order to eliminate both the Census division specific effect and the year specific effect and isolate only the impact of a new casino, the local labor market outcomes can be compared before and after the opening of the new casinos, in both the treatment areas (with new casinos) and comparison areas (without new casinos). This differencing of the growth in outcomes between the two area types results in the

“double difference” estimator:

$$E[\Delta_y emp_c | c = new\ casino] - E[\Delta_y emp_c | c = no\ new\ casino] = \delta \quad (3)$$

where $\Delta_y emp_c$ is the growth of the local labor market outcome between the base year, $(y - 1)$, and the post year, (y) , for each area type. This double differencing generates an unbiased estimate of the impact of a new casino, δ , and was previously used by Rephann et al. (1997). This approach assumes that the two areas would have the same growth in their local labor markets had a new casino not been opened.

5.2 Indirect Differential Growth Estimation

The indirect differential growth analysis examines local labor market outcomes in related and other local goods industries, between areas with and without a new casino. In general, these particular industries could experience either spillover or crowd out effects following the opening of a new casino. Related local goods industries are defined as the closely related hospitality industry, namely accommodation, food, and beverage services (NAICS 72), which includes employment related to casino hotels, and the entertainment industry, namely other amusement and recreation services, which excludes gambling operations (NAICS 713, not 7132).¹⁵ These industry groups are similar to those used by Cotti (2008), except for the important difference that the amusement and recreation definition used here excludes gambling operations which was analyzed separately under the direct growth estimation, with all of the industry definitions being mutually exclusive.

The other local industries used in this study are construction, retail trade, and all other services. While this is not an exhaustive list of all the local industries that could possibly be indirectly affected by the direct gains in gambling operations due

¹⁵The accommodation, food, and beverage services definition includes traveler accommodation, RV parks and recreational camps, rooming and boarding houses, full-service restaurants, limited-service eating places, special food services, and drinking places. The other amusement and recreation services definition excludes gambling and includes performing arts companies; spectator sports; promoters of performing arts, sports, and similar events; agents and managers for artists, athletes, entertainers, and other public figures; independent artists, writers, and performers; heritage institutions; amusement parks and arcades, and other amusement and recreation industries.

to a new casino, these industries are likely to experience these local spillover effects and have been used within the previous gambling literature, as well as in other non-gambling local labor market studies. Retail trade includes lottery ticket vendors, which are located in retail stores in Canada, and all other services includes business, education, health, social, and other services, while omitting gambling operations, accommodation, food, and beverage services, and other amusement and recreation services.

The differential growth estimation measures the difference in the local labor market outcomes, over time and between area types, using the conditional expectation in Equation (3) which forms the basis for the regression model:

$$\ln(emp_{cpt(y)}) - \ln(emp_{cpt(y-1)}) = \delta \cdot treat_{cpt} + prov_p \cdot \eta + \varepsilon_{cpt} \quad (4)$$

where the dependent variable, $\Delta \ln(emp_{cpt})$, is the growth in the natural log of the local labor market outcome of interest between years within a time period, and $treat_{cpt}$ is a binary indicator equal to one if the Census division is in the treatment group (i.e. a new casino area) or zero if it is in one of the comparison groups (i.e. an existing casino or non-casino area). The subscripts c and p refer to the Census divisions and provinces, t refers one of the five-year intercensal time periods, and (y) and $(y - 1)$ identify the post treatment and base years within each of the time periods. All of the indirect differential growth regressions are generalized over the three intercensal periods and control for provincial fixed effects, following the direct growth estimation.¹⁶

Equation (4) is estimated using ordinary least squares (OLS) and augmented with a nearest neighbor matching (NNM) approach to estimate the local average treatment effect of a new casino. While OLS uses all of the possible comparison observations, the NNM approach limits the selection of this group, using only four matched comparison observations per treatment observation as suggested by Abadie et al. (2004). All observation matching represents an exact match by time period,

¹⁶The generalization over multiple time periods and inclusion of provincial fixed effects, as well as the outcome differencing and use of multiple comparison areas, help to reduce or eliminate the potential influence of any omitted factors.

while matching by province is not exact if there are not enough comparison observations for four provincial matches to each treatment observation. Even without an exact match, the NNM estimator will better address bias resulting from cases where crowd out effects may exist between Census divisions with new casinos and those with existing casinos within the same province.

Table 4a: Generalized Local Indirect Growth in Related Local Goods Industries

Generalized Local Indirect Growth		New Casino and Non-Casino Areas		New Casino and Existing Casino Areas	
		OLS	NNM	OLS	NNM
Accom., Food, & Bev.:	total employment	0.048*** (0.017)	0.038** (0.017)	0.070*** (0.019)	0.045** (0.022)
	total earnings	0.044 (0.029)	0.012 (0.026)	0.061* (0.034)	-0.006 (0.033)
	earnings per worker	-0.004 (0.019)	-0.025 (0.016)	-0.009 (0.021)	-0.051** (0.021)
Other Amuse. & Rec.:	total employment	-0.018 (0.044)	0.009 (0.044)	0.082* (0.047)	0.100* (0.059)
	total earnings	-0.058 (0.070)	-0.037 (0.070)	0.055 (0.074)	0.037 (0.096)
	earnings per worker	-0.040 (0.041)	-0.047 (0.041)	-0.026 (0.042)	-0.063 (0.054)
n		714	714	90	90

Notes: Authors' calculations using data from the 1991, 1996, 2001, and 2006 Canadian Census. All regressions control for provincial fixed effects (Ontario is the omitted province). Stars denote the statistical significance of the estimates (* for 10%, ** for 5%, and *** for 1%). Huber-White robust standard errors are in parentheses.

From Table 4a, total employment in the related hospitality industry (accommodation, food, and beverage services) clearly exhibits positive spillovers from the gambling industry. This result holds regardless of the comparison area or estimation technique. According to the OLS results in the first and third columns, total employment in this industry grew by 4.8% more in new casino areas relative to non-casino areas and by 7.0% more in new casino areas relative to existing casino areas. Using

the matching estimator, the differential total employment effect was slightly lower, at 3.8% and 4.5%, respectively. The magnitude difference of this total employment effect between the two sets of comparison areas is further evidence that the labor market effects of a new casino may be short-lived, occurring within one to five years of its opening. While it is clear the employment effect of new casinos on the local hospitality industry is large and statistically significant, the earnings effects in this industry were only statistically significant under one specification for each earnings outcome, with positive growth in total earnings and negative growth in earnings per worker.

Table 4a also contains weak evidence that total employment in the other amusement and recreation services industry experienced growth after the opening of new casinos, at least when comparing new casino areas to existing casino areas. This total employment grew by 8.2% more in Census divisions with new casinos relative to those with existing casinos using OLS and by 10.0% more using the matching estimator. This suggests that the spillover effects in this related sector may only be felt in the short-term, as the employment growth associated with new casinos may not continue past five years after a casino opening. When comparing new casino areas to non-casino areas, no statistically significant growth differential in total employment was found. The differential growth in total earnings and earnings per worker were also found to be statistically insignificant using both estimation techniques.

Table 4b shows the results for the other local goods industries. The results suggest that no spillover effects are present in any of these industries, with the exception of a possible differential increase in earnings per worker in all other services. Overall, the magnitudes of the estimates were the smallest for the retail trade sector, but even the estimates for construction and all other services were not at all close in magnitude to those found in the related local industries in Table 4a. The insignificant differential growth in labor market outcomes in these other local industries emphasizes that the spillovers from gambling due to a new casino only occur in the closely related hospitality and entertainment industries.

Table 4b: Generalized Local Indirect Growth in Other Local Goods Industries

	Generalized Local Indirect Growth	New Casino and Non-Casino Areas		New Casino and Existing Casino Areas	
		OLS	NNM	OLS	NNM
		Construction:	total employment	0.036 (0.040)	0.012 (0.034)
	total earnings	0.025 (0.052)	-0.007 (0.043)	-0.027 (0.067)	-0.056 (0.062)
	earnings per worker	-0.010 (0.019)	-0.019 (0.019)	-0.023 (0.022)	-0.040 (0.027)
Retail Trade:	total employment	0.012 (0.016)	-0.018 (0.018)	0.013 (0.018)	-0.008 (0.019)
	total earnings	0.028 (0.024)	-0.009 (0.024)	0.011 (0.029)	-0.005 (0.028)
	earnings per worker	0.015 (0.014)	0.009 (0.014)	-0.001 (0.018)	0.003 (0.020)
All Other Services:	total employment	0.020 (0.016)	-0.019 (0.014)	0.020 (0.018)	-0.023 (0.015)
	total earnings	0.033 (0.023)	-0.006 (0.017)	0.020 (0.027)	-0.027 (0.020)
	earnings per worker	0.013 (0.010)	0.013* (0.007)	-0.000 (0.010)	-0.003 (0.008)
	n	714	714	90	90

Notes: Authors' calculations using data from the 1991, 1996, 2001, and 2006 Canadian Census. All regressions control for provincial fixed effects (Ontario is the omitted province). Stars denote the statistical significance of the estimates (* for 10%, ** for 5%, and *** for 1%). Huber-White robust standard errors are in parentheses.

6 Local Job Multiplier Estimation

While the indirect differential growth estimation offers one particular method for determining the spillover effects from the gambling industry to related and other local industries due to a new casino, these estimates may reflect more than just spillovers. Therefore, the paper additionally performs a local job multiplier analysis, which has not been previously applied to measure the impacts of new casinos, in order to better determine the magnitude of these spillovers. The job multiplier estimation complements the growth estimation by directly linking the magnitude of the direct employment effect in the gambling industry to the magnitude of the indirect employment effects in local non-gambling industries. This job-for-job estimation produces a coefficient which can be interpreted as the number of jobs created or destroyed in each of the local non-gambling industries as a result of one job created in the gambling industry. The multiplier approach of this paper additionally uses an instrumental variable procedure to address any potential endogeneity of these spillovers between industries.

The local job multiplier estimation for the gambling industry to the non-gambling industries is represented by the regression model:¹⁷

$$\Delta \ln(emp_{cpt}^{NG}) = \alpha + \gamma \cdot [\Delta \ln(emp_{cpt}^G) \cdot (emp_{cpt(y-1)}^G / emp_{cpt(y-1)}^{NG})] + \varepsilon_{cpt} \quad (5)$$

where emp_{cpt}^{NG} is total employment in a specific non-gambling sector, emp_{cpt}^G is total employment in the gambling sector, and $(emp_{cpt(y-1)}^G / emp_{cpt(y-1)}^{NG})$ is the ratio of gambling sector employment to the specific non-gambling sector employment in the base year.¹⁸ The subscripts c , p , t , and $(y - 1)$ refer to the Census division, province, time period, and base year, respectively. Similar to the growth estimation, this technique stacks the data over all three intercensal time periods in order to produce the generalized job multiplier effect of a new casino embodied in the coefficient, γ .

¹⁷This approach follows from other applications of local job multipliers, such as Black et al. (2005), Moretti (2010), and Marchand (2012).

¹⁸It is the combined independent variable which is a potential source of endogeneity.

Using OLS to estimate Equation (5) will result in a multiplier identified by any correlation between the jobs created or lost in the local gambling and non-gambling industries. This could reflect, for example, a general upturn in the business cycle creating jobs in both of these industries, regardless of whether a new casino was opened. In order to identify the job multiplier effect only attributable to the new casino, an instrumental variable (IV) estimator is used, with two different sets of instruments for the independent variable. The primary instrument is the treatment binary for Census divisions with new casinos, $treat_{cpt}$, as the highest growth in gambling employment attributable to a new casino will take place in new casino areas, with little to no growth taking place in areas with existing casinos or non-casino areas, as shown in Table 3. The secondary instrument is the natural log of total horse race gambling revenue generated in a province, $ln(hgr_{pt})$, which is used together with the primary instrument. Over the past few decades, horse race gambling has declined across North America due to a diminished general interest in the sport (Walker and Jackson, 2008). Provincial governments may attempt to replace these declining horse race gambling revenues with casino gambling revenues, which would then increase gambling employment related to the opening of new casinos, especially within the new casino areas.¹⁹

The local job multiplier estimates for the related local industries are shown in Table 5a. The OLS results in the first and fourth columns, which do not correct for endogeneity, suggest that a job created in the gambling industry does not create any additional jobs in the accommodation, food, and beverage industry, but does crowd out jobs in other amusement and recreation services. The results in the second, third, fifth, and sixth columns of Table 5a contain the job multiplier IV estimates which correct for the endogeneity in job creation. Under these specifications, the employment crowd out effects for other forms of entertainment are no longer statistically significant. More importantly, the multiplier estimates for the hospitality industry are now positive and statistically significant, indicating that for every job created

¹⁹The horse race gambling revenue data used in this study are from the National Accounts of Statistics Canada. Other forms of gambling profit and revenue from this data were also tested as potential instruments. Only horse gambling revenue fit the definition of a good instrument, although it is not as strong an instrument as the treatment binary.

Table 5a: Generalized Local Job Multipliers for Related Local Goods Industries

Generalized Local Job Multipliers	New Casino and Non-Casino Areas			New Casino and Existing Casino Areas		
	OLS	IV1	IV2	OLS	IV1	IV2
Accom., Food, & Bev.:	0.256 (0.248)	0.907* (0.548) [31.46]	1.378** (0.623) [20.11]	0.387 (0.251)	1.539* (0.847) [14.64]	2.317*** (0.819) [9.61]
Other Amuse. & Rec.:	-0.215* (0.122)	-0.184 (0.217) [24.02]	-0.265 (0.252) [15.80]	-0.252* (0.134)	0.198 (0.325) [13.03]	0.146 (0.289) [8.23]
n	431	431	431	88	88	88

Notes: Authors' calculations using data from the 1991, 1996, 2001, and 2006 Canadian Census. IV1 instruments the independent variable with the binary treatment indicator for a new casino area and IV2 additionally instruments with the natural log of horse race gambling revenue. Stars denote the statistical significance of the estimates (* for 10%, ** for 5%, and *** for 1%). Huber-White robust standard errors are in parentheses. First-stage F-statistics are in brackets. Comparison areas with zero employment in gambling operations are automatically dropped from the regressions.

in the gambling operations industry, an additional 0.9 to 2.3 jobs are created in the accommodation, food, and beverage industry. These significant results for the hospitality industry are consistent with the differential growth effects reported in Table 4a, as well as with the previous results of Cotti (2008) and Reese (2010).

The magnitude and statistical significance of the hospitality multiplier coefficients depend on whether only the primary instrument is used in the IV1 columns or both the primary and secondary instruments are used together in the IV2 columns. While the first-stage F-statistics suggest that the new casino indicator is a stronger instrument when used in isolation than together with horse race gambling revenues, this specification leads to slightly lower magnitudes and statistical significance for the multipliers. In addition, this magnitude and statistical significance also depend on the sets of areas used, as the estimates are slightly larger and of increased statistical

significance using the new and existing casino areas as compared to using the new casino and non-casino areas.²⁰

Table 5b: Generalized Local Job Multipliers for Other Local Goods Industries

Generalized Local Job Multipliers	New Casino and Non-Casino Areas			New Casino and Existing Casino Areas		
	OLS	IV1	IV2	OLS	IV1	IV2
Construction:	0.671** (0.284)	0.950 (0.930) [60.21]	0.050 (0.887) [34.55]	0.237 (0.266)	-1.402 (1.563) [8.81]	-1.185 (1.287) [5.98]
Retail Trade:	1.077*** (0.370)	-0.083 (0.956) [45.07]	0.258 (0.950) [26.54]	-0.173 (0.521)	0.142 (1.389) [9.18]	1.107 (1.296) [6.46]
All Other Services:	0.198 (0.855)	-2.237 (2.097) [45.95]	-1.515 (1.847) [28.66]	-0.776 (0.533)	-5.804 (3.662) [6.30]	-0.548 (2.318) [5.11]
n	431	431	431	88	88	88

Notes: Authors' calculations using data from the 1991, 1996, 2001, and 2006 Canadian Census. IV1 instruments the independent variable with the binary treatment indicator for a new casino area and IV2 additionally instruments with the natural log of horse race gambling revenue. Stars denote the statistical significance of the estimates (* for 10%, ** for 5%, and *** for 1%). Huber-White robust standard errors are in parentheses. First-stage F-statistics are in brackets. Comparison areas with zero employment in gambling operations are automatically dropped from the regressions.

Table 5b displays the job multiplier results for the other local goods industries. Like the previous results for the related local industries, the OLS estimates imply that there are statistically significant effects present for both the construction and retail trade industries, at least within the first area set. These OLS estimates imply that every job created in the gambling industry creates an additional 0.6 construction jobs and 1.0 retail trade job. However, these effects are not statistically significant

²⁰The smaller sample size in the new and existing casino set also leads to weaker instruments, as indicated by the relatively lower first-stage F-statistics.

once the job creation endogeneity is addressed, which is shown under all of the IV specifications. This suggests that the OLS procedure produces spurious results due to a bias from this endogeneity. Therefore, there is no additional job creation to be found due to a new casino for any of the other local goods industries.

7 Conclusion

The local labor market effects of new casinos are examined in this paper in order to answer whether the opening of a new casino generates greater employment and earnings within the locality. The paper contributes several improvements to the literature in the identification and measurement of these potential impacts. First, it is the only paper to comprehensively investigate these effects for Canada, which offers a more uniform distribution of casinos located within more populated areas relative to the United States. Second, it uses detailed geographical descriptors available in the restricted-access Census data to establish proper local labor markets, which then define the treatment areas (with new casinos) and two unique sets of comparison areas (with existing casinos and without casinos). Third, the detailed industry descriptors in this data allow for the targeting of the specific industries where these effects might take place, either directly in the local gambling industry or indirectly in local non-gambling industries. Fourth, all of the estimation techniques used in this paper are generalized over three consecutive five-year periods, diluting the influence of any particular period.

The direct labor market growth in the gambling industry shows that areas with new casinos experience large, positive employment and earnings growth within one to five years following the opening of a casino. However, this growth was insignificant for areas with existing casinos, suggesting that the local effects of new casinos do not extend beyond five years. The indirect differential growth for the related and other local industries is estimated between treatment areas with new casinos relative to the comparison areas with and without existing casinos, using a matching estimator for further refinement. These indirect growth effects were mainly confined to differential employment growth in the related local industries of accommodation,

food, and beverage services and other amusement and recreation services. Contrary to the previous evidence, no significant employment or earnings effects were found in construction, retail trade, or all other services.

In order to properly identify any spillover or crowd out effects, a local job multiplier analysis is performed which links the magnitude of the direct employment effect in the gambling industry to the magnitude of the indirect employment effects in local non-gambling industries. The results ignoring potential endogeneity suggest that there are negative crowd out effects for jobs in other amusement and recreation services, as well as positive spillover effects for jobs in construction and retail trade. However, once endogeneity is accounted for through the use of two different instrument sets, the only significant multipliers are found in the closely related accommodation, food, and beverage service industry. More specifically, for every job created in the gambling industry due to a new casino, one to two additional jobs are created in this hospitality industry, results which are robust to the choice of instrument and comparison set. No other local industry experiences job gains or losses related to the creation of casino gambling jobs.

Communities around the world continue to struggle with the question of how much casino gambling should be allowed or whether casino gambling should be available at all. Much of this debate focuses on the potential economic benefits that casinos can generate within a local economy, and whether these potential benefits can outweigh any of the potential social costs. Only through the proper measurement of these benefits can policy makers determine the right amount of casino gambling to allow. The evidence presented in this paper suggests that a skeptical approach be taken regarding the use of employment and earnings gains to justify the legalization or expansion of casino gambling within a locality. Any expectations of new jobs or earnings enhancement should be considered short-term and narrowly-focused within the gambling and hospitality industries. Broad employment and earnings gains in other local industries outside of gambling and hospitality should not be expected.

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Table A1a: Census Divisions with Existing Casinos, Prior to 1991

Casino Name	City / Town	CD No.	Province	Established
(Diamond Tooth Gertie's Gambling Casino)	(Dawson City)	(6001)	(YK)	(1972)
Cash Casino	Calgary	4806	AB	1980
Casino Edmonton	Edmonton	4811	AB	1986
Treasure Cove Casino & Hotel	Prince George	5953	BC	1986
Billy Barker Casino Hotel	Quesnel	5941	BC	1987
Stampede Casino	Calgary	4806	AB	1988
Elbow River Casino	Calgary	4806	AB	1989
Palace Casino	Edmonton	4811	AB	1990

Notes: Authors' compilation of casino openings in Canada from various sources.

Table A1b: Census Divisions with New Casinos, 1991-1995

Casino Name	City / Town	CD No.	Province	Established
Lake City Casino	Kamloops	5933	BC	1992
Lake City Casino	Kelowna	5935	BC	1992
Lake City Casino	Vernon	5937	BC	1992
Casino de Montréal	Montréal	2466	QC	1993
McPhillips Street Station Casino	Winnipeg	4611	MN	1993
Club Regent Casino	Winnipeg	4611	MN	1993
Casino Lethbridge	Lethbridge	4802	AB	1993
Casino de Charlevoix	La Malbaie	2415	QC	1994
Casino Windsor	Windsor	3537	ON	1994
Gold Dust Casino	St. Albert	4811	AB	1994
Boomtown Casino	Fort McMurray	4816	AB	1994
Casino Nova Scotia	Halifax	1209	NS	1995
Casino Nova Scotia	Sydney	1217	NS	1995
Cash Casino	Red Deer	4808	AB	1995

Notes: Authors' compilation of casino openings in Canada from various sources.

Table A1c: Census Divisions with New Casinos, 1996-2000

Casino Name	City / Town	CD No.	Province	Established
Casino du Lac-Leamy	Gatineau	2481	QC	1996
Casino Niagara	Niagara Falls	3526	ON	1996
Casino Rama	Rama	3543	ON	1996
Bear Claw Casino	Carlyle	4701	SK	1996
Casino Regina	Regina	4706	SK	1996
Painted Hand Casino	Yorkton	4709	SK	1996
Northern Lights Casino	Prince Albert	4715	SK	1996
Gold Eagle Casino	North Battleford	4716	SK	1996
Casino By Vanshaw	Medicine Hat	4801	AB	1996
Frank Sisson's Silver Dollar Casino	Calgary	4806	AB	1996
Baccarat Casino	Edmonton	4811	AB	1996
Great Blue Heron Charity Casino	Port Perry	3518	ON	1997
Casino Calgary	Calgary	4806	AB	1997
Jackpot Casino	Red Deer	4808	AB	1997
Great Canadian Casino Nanaimo	Nanaimo	5921	BC	1998
Brantford Charity Casino	Brantford	3529	ON	1999
Casino Sault St. Marie	Sault St. Marie	3557	ON	1999
Great Northern Casino	Grande Prairie	4819	AB	1999
Gateway Casino Burnaby	Burnaby	5915	BC	1999
Point Edward Charity Casino	Point Edward	3538	ON	2000
Thunder Bay Charity Casino	Thunder Bay	3558	ON	2000
Casino Yellowhead	Edmonton	4811	AB	2000
Lake City Casino Penticton	Penticton	5907	BC	2000

Notes: Authors' compilation of casino openings in Canada from various sources.

Table A1d: Census Divisions with New Casinos, 2001-2005

Casino Name	City / Town	CD No.	Province	Established
Boulevard Casino	Coquitlam	5915	BC	2001
Great Canadian Casino View Royal	Victoria	5917	BC	2001
Thousand Islands Charity Casino	Ganonoque	3507	ON	2002
Aseneskak Casino	The Pas	4621	MN	2002
Casino Moose Jaw	Moose Jaw	4707	SK	2002
Casino of the Rockies	Cranbrook	5901	BC	2002
Niagara Fallsview Casino Resort	Niagara Falls	3526	ON	2004
River Rock Casino Resort	Richmond	5915	BC	2004
South Beach Casino	Scanterbury	4613	MN	2005
Deerfoot Inn & Casino	Calgary	4806	AB	2005
Cascades Casino	Langley	5915	BC	2005
Edgewater Casino	Vancouver	5915	BC	2005

Notes: Authors' compilation of casino openings in Canada from various sources.

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