White Buffalo?

First Nation Casinos as an Economic Development Strategy in Saskatchewan

Philippe Cyrenne, Department of Economics, University of Winnipeg
Hugh Grant, Department of Economics, University of Winnipeg
Jacqueline Romanow, Department of Indigenous Studies, University of Winnipeg

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First Nation (FN) gaming facilities in Canada have evolved as a compromise between two distinct, but potentially compatible, interests: a) the province's policy objectives; and b) the FN's development goals. Several FNs have embraced gaming as an economic strategy, generating direct employment opportunities, indirect economic activity, and a source of income for unrelated projects. Provinces generally resisted the licensing of FN casinos on the grounds that they represent competition for government-operated gambling operations. In light of municipal resistance to provincially-run casinos (most recently in Vancouver, Surrey and Brandon); however, locating gambling facilities on FN reserves has assumed greater interest to provinces seeking to expand gambling revenue, especially in rural areas distant from government operations which are often located in large urban settings. Since 1996, therefore, FN casinos account for the majority of the growth in the industry. The downside of this apparent compromise is that by limiting facilities to smaller population centres, the restricted market limits the potential economic benefits. In this context, is casino gambling truly the "white buffalo" it has been touted to be by some policy makers and FN leaders alike; in other words, given the overriding jurisdictional control of gaming by the provinces, can gaming ever provide a self-directed way out of economic dependence for FNs in Canada?

There is a large literature on aboriginal gaming in North America. Research varies in its focus from cost-benefit analyses of the fiscal impact of a casino on a community to theoretical criticism of the place of gambling within societal structures of colonialism, capitalism and hegemony. Despite this interest, there has been neither a framework for assessing, nor an attempt to quantify, the social benefits and costs of aboriginal gaming in Canada. There is no consensus on whether or not gaming facilities and casinos on FN reserves make a net positive contribution to the communities in which they are situated, or whether or not they enhance the wellbeing of all provincial residents.

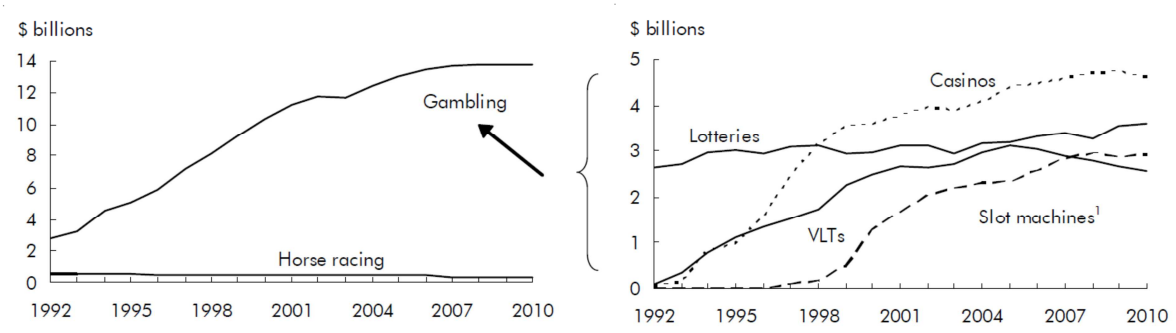
This paper seeks to redress one aspect of this deficiency in the literature. It is part of an ongoing project to develop a robust multiple accounts benefit-cost analysis of casino gaming in Canada. We do not consider here the much noted social and cultural impacts of gambling on matters such as FN sovereignty and problem gaming, and limit our attention to the economic impact of a casino on adjacent communities. We further restrict our analysis to the province of Saskatchewan where a clear approach to FN casinos has evolved. Using Canadian Census data at the census sub-division level, we examine the impact of the location of a casino on the average income and total population of adjacent communities. Our empirical results are tentative, but we find a very modest positive impact on both incomes and population in both FN and non-FN communities.

The paper is organized as follows. Section 1 provides an overview of the gaming industry in Canada, the place of FN casino gaming, and the evolution of FN casinos in Saskatchewan. Section 2 develops a model for assessing the effects of a casino at the community level, and Section 3 then applies this analysis to the Province of Saskatchewan. Section 4 concludes by considering factors that can enhance the net benefits from casino gaming accruing to FNs people.

1. FN Casinos in Canada

Until 1970, legalized gaming in Canada was restricted to pari-mutual wagering on horse races. With greater social acceptance of gaming, government lotteries were introduced in 1970, followed by government-licensed casinos and video-lottery terminals (VLTs) located in bars and other venues outside of casinos. Currently, gaming accounts for approximately 10% of leisure expenditure in Canada (Belanger, Williams & Arthur, 2013) and is a $14 billion industry (measured in terms of net revenue) with roughly one-third of all legalized gaming in Canada occurring in casinos (Marshall, 2011). Gambling has become an important source of revenue to provincial governments, with the proceeds directed either to charitable organizations or general government coffers.

Figures 1a and 1b: Gambling in Canada, by Type, 1992-2010



1. Refers to those found outside government-run casinos.

Source: Marshall (2011)

Pressure for FN involvement in the gaming industry followed a series of legal rulings in the United States favorable to tribes. The legal foundation for the US Indian gaming industry emerged out of the 1987 *California v. Cabazon Band of Mission Indians* case in which the US Supreme Court upheld historical jurisprudence on self-government rights, and the state's inability to interfere with tribal actions.[1] In the United States, tribes located on reservations are recognized as governments with sovereign power "akin to one of the states" (Taylor and Kalt, 2005, iv). Passage of the Indian Gaming Regulatory Act of 1988 legalized gaming operations on reservations in many states. By 2002, there were over 310 gaming operations (most "Las Vegas" style casinos with slot machines and/or table games) run by more than 200 of 556 federally-recognized tribes.

In light of the apparent success of tribal-operated casinos as an economic development vehicle, several FN organizations in Canada sought similar access to the gambling market. As early as 1981, the Shawanaga First Nation passed band resolutions that established lottery laws and a lottery authority, and in 1987 they opened a gaming house out of a newly developed recreation complex. Many other FNs in Ontario followed suit, including Eagle Lake First Nation (Belanger, 2006). The Canadian industry,

[1] *Cabazon* was the outcome of one of several tribes' concurrent pushes for economic development and assertion of sovereignty through gaming. Similarly, the *Seminole v. Butterworth* case in Florida was the results of state and federal governments having to come to terms with tribes claiming rights of nationhood (Spilde, 2004; Gonzales, 2004; Cattelino, 2005; Light and Rand, 2005; Taylor and Kalt, 2005; Conner and Taggart, 2013).

however, is subject to a much different legal and political framework. Due largely to the Criminal Code amendment of 1985, gaming falls under provincial jurisdiction; there is no federal gaming policy for FN reserves (Kelley, 2002). Furthermore, the Supreme Court of Canada in R v. Pamajewon (1996) enforced jurisprudential limitations upon FNs' sovereign decision-making power when it determined that Shawanaga and Eagle Lake First Nations did not possess the aboriginal right (as protected by the Constitution Section 35) to control and regulate on-reserve gaming on the basis that "gambling as a practice was not connected enough to the self-identity" of FNs prior to colonization (Belanger, 2006: 94; Belanger, 2011: 11). Because of this, FNs have been forced to negotiate with provincial governments to license and operate gaming facilities in their communities and to determine revenue-sharing arrangements (Azmier, 2001; Belanger, 2006).

As the legal gaming industry has grown, each province has taken its own approach to licensing arrangements with First Nations. There are three major areas of gaming on-reserve under provincial regulation: charitable gaming (bingo, lottery, pull tabs), VLTs, and casinos (Kelley, 2002). The five most western provinces have permitted a total of 18 FN casinos (Table 1).[2] British Columbia has no actual policy on FN gaming, but licensed the Casino of the Rockies in Cranbrook, owned by a group of FNs from around the country including Mnikaning First Nation and Samson Cree Nation in Alberta. The Alberta First Nations Gaming Policy (FNGP), created in 2001, adopts a "charitable gaming model" which allows FNs the opportunity to develop casino facilities on reserve land under the regulatory authority of the Alberta Gaming and Liquor Commission. This has resulted in five FN casinos. In Saskatchewan, six FN casinos have been built since 1996 under an agreement reached between the Province and the Federation of Saskatchewan Indian Nations (FSIN). In Manitoba, FNs are required to enter into gaming agreements with the province to establish self-licensing First Nations' Gaming Commissions, which are then designated as a licensing authority by both a provincial Order in Council and a resolution of the FN.

[2] Nova Scotia has FN-province VLT licensing agreements, as in the case of the Mi'kmaq in Nova Scotia (Belanger, 2006).Prince Edward Island and Newfoundland & Labrador do not have any FN reserves (Kelley, 2002).

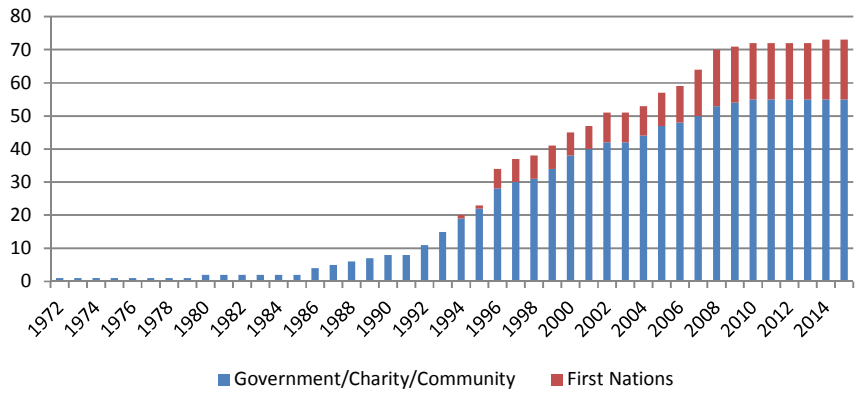
Three FN casinos now exist, the Aseneskak Casino at Opaskwayak Cree Nation, adjacent to the Pas, Southbeach Casino, located on the Brokenhead Ojibway FN, some 30 minutes from the City of Winnipeg and the newest, Sand Hills Casino, operated by Swan Lake First Nation near Carberry. In Ontario, three FN casinos have been licensed by provincial Orders-in-Council: Casino Rama (1996), a joint venture with the government of Ontario and Ontario FNs on the reserves of the Chippewas of Rama First Nation; Golden Eagle Charity Casino, Kenora (1994); and Great Blue Heron Charity Casino, Port Perry (1997).

Table 1: First Nations Casinos in Canada, 2015

Venue	Location	Province	Year Est.
St. Eugene Golf Resort & Casino	Cranbrook	BC	2002
Casino Dene	Cold Lake FN	AB	2007
River Cree Resort and Casino	Enoch	AB	2006
Eagle River Casino & Travel Plaza	Whitecourt	AB	2008
Grey Eagle Casino	Tsuu T'ina FN	AB	2007
Stoney Nakoda Resort Casino	Kananaskis	AB	2008
Dakota Dunes Casino	near Saskatoon	SK	2007
Gold Eagle Casino	North Battleford	SK	1996
Northern Lights Casino	Prince Albert	SK	1996
Bear Claw Casino	Carlyle	SK	1996
Painted Hand Casino	Yorkton	SK	1996
Living Sky Casino	Swift Current	SK	2008
South Beach Casino	Grand Beach	MB	2005
Aseneskak Casino	The Pas	MB	2002
Sand Hills Casino	Cranberry	MB	2014
Casino Rama	Rama	ON	1996
Golden Eagle Charitable Casino	Kenora	ON	1994
Great Blue Heron Casino	Port Perry	ON	1997

Source: www.abgamblinginstitute.ualberta.ca/LibraryResources/ReferenceSources/CanadaCasinos.aspx

Figure 2:
Number of Casinos in Canada, 1972-2015



Policies also vary by province with respect to FN Casino revenue sharing agreements. Revenue sharing agreements determine how much of net profits are held by the operating FN and how they may be divested as well as how much (if any) is shared with other FNs and with the provincial lottery authority. In British Columbia, the two casinos situated on FN lands are entitled to 10% of net revenues, similar to any other city or town under the provincial gaming legislation. In Alberta, 30% of net revenue accrues to the FN operator; 30% goes to the general Alberta Lottery Fund; and 40% goes to the First Nation Development Fund (FNDF), a provincially-facilitated grant program through which FNs can seek support for economic, social and community development projects. Of the FNDF, 75% is split amongst the five gaming host nations and 25% is divided by population and by geographic region to the rest of the 40 non-gaming FNs (Alberta Gaming & Liquor Commission, 2001). In Saskatchewan, revenue is allocated between the First Nation Trust Fund, to be divided among FNs on a "fair and equitable basis" (50%), provincial Community Development Corporations (25%) and general provincial funds (25%). In Manitoba, all revenue accrues to FNs, but the distribution between the host and other FNs varies considerably according to each of the individual agreements governing each of the three casinos. Southbeach, for example, is owned by a Tribal Council which divides revenues between its member First Nations. In Ontario, all gaming profits generated in the province are shared equally among all FNs in the

province in accordance with a Gaming Revenue Sharing and Financial Agreement signed by the provincial government and the Chiefs of Ontario in February 2008.[3]

Table 2: Revenue Sharing from FN Casinos				
Province	**FN Operator**	**Other FNs**	**Government**	**FN Development Fund**
British Columbia	30%		70%	
Alberta	30% + 30%*	10%*	30%	(40%)*
Saskatchewan	0%	50%	25%	25%**
Manitoba	0-92.5%	7.5%-100%		
Ontario ***				

* Of the 40% in the FNDF, 75% goes to five host FNs and 25% to other FNs.
** Funds distributed by Community Development Corporations.
*** 1.7% of all gaming revenue in the province; see http://www.ofnlp2008.org/docs/6_OFN-LimitedPartnershipAgreement.pdf

Revenue sharing among FNs is a contentious issue. In the case of the Casino Rama in Mnjikaning, Ontario, there was a three-way struggle between the province, the Mnjikaning First Nation, and the Chiefs of Ontario over the distribution of funds (Manitowabi, 2007). In Manitoba, the twelve host FNs pressured the Association of Manitoba Chiefs to decrease the non-host nations' shares of casino profits in the case of OCN and Brokenhead. In Alberta, where the host nation retains a relatively large share of profits, it is argued that the policy has created significant disparities between casino-operating "have" FNs, and non-casino-operating "have not" ones. One corollary is that the province may take advantage of "economically impoverished FNs in their willingness to accept restrictive provincial policies in their zeal to access gambling revenues" (Belanger *et. al*., 2013: 13).[4]

The development of FN casinos has been pursued most vigorously in Saskatchewan. Creation of the industry coincided with the provincial government's search for increased revenue and pressure by

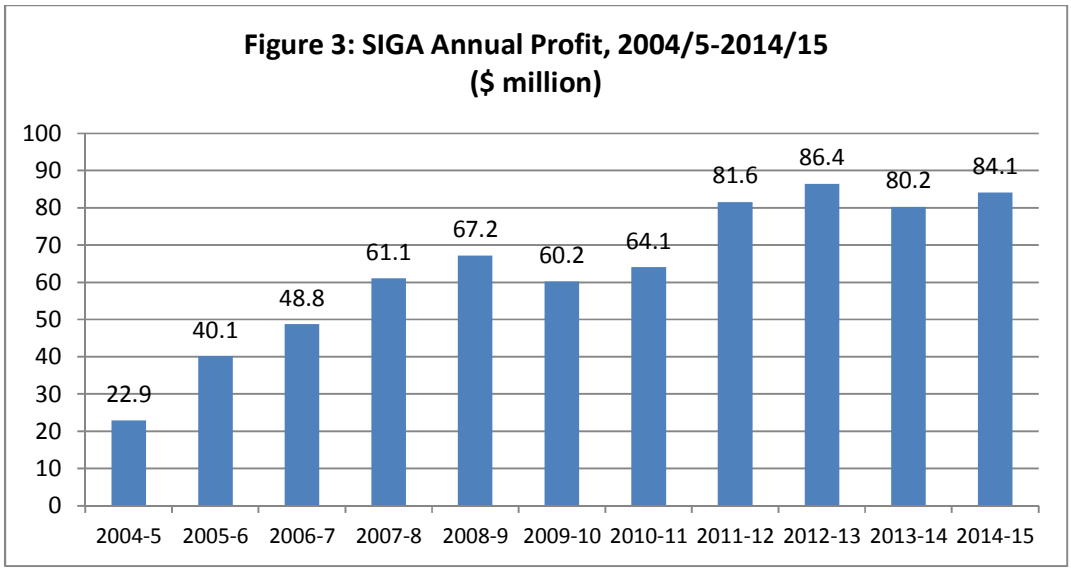
[3] Up until 2008, Ontario First Nations communities shared in the revenue of the native-owned Casino Rama, but that agreement was changed. Now instead, 132 Ontario reserves share 1.7 per cent of all Ontario gaming revenues, which equals roughly $119 million annually. http://www.thestar.com/news/queenspark/2013/07/01/ontario_first_nations_battling_olg_over_35_million.html

[4] More generally, Henriksson (2001) posited that due to their dependence on government cooperation to settle land claims cases, FNs may be less likely to challenge government when it comes to self-determination in casino operation.

FN to participate in the industry. When the unlicensed Bear Claw casino was opened in 1993 by the White Bear FN, it was promptly shut down by the Government; however, it forced the issue of aboriginal involvement in gaming to be confronted. A wide-ranging agreement was reached between the Province and the Federation of Saskatchewan Indian Nations (FSIN). Given the intention of reserving the larger population centres of Regina and Saskatoon for government-operated facilities, a revenue-sharing arrangement was reached with FSIN in the event that government casinos were opened in either city, and it was agreed to license FN casinos outside of Regina and Saskatoon. To this end, the Saskatchewan Indian Gaming Authority (SIGA) was created to develop, conduct, manage and operate on-reserve and off-reserve casinos. Four began operations in 1996 (in Carlyle, Yorkton, Prince Albert and North Battleford); a fifth was added in 2007 when the Government acquiesced and permitted a FN casino just south of Saskatoon; and a sixth at Swift Current in 2008. A seventh is planned for Lloydminister. The two government-operated casinos are in Regina (opened in 1996) and Moose Jaw (2002). The province recently declined to move forward on an agreement in principle (AIP) to sell the two government-run casinos to SIGA as well as to authorize FN-run Internet gaming.

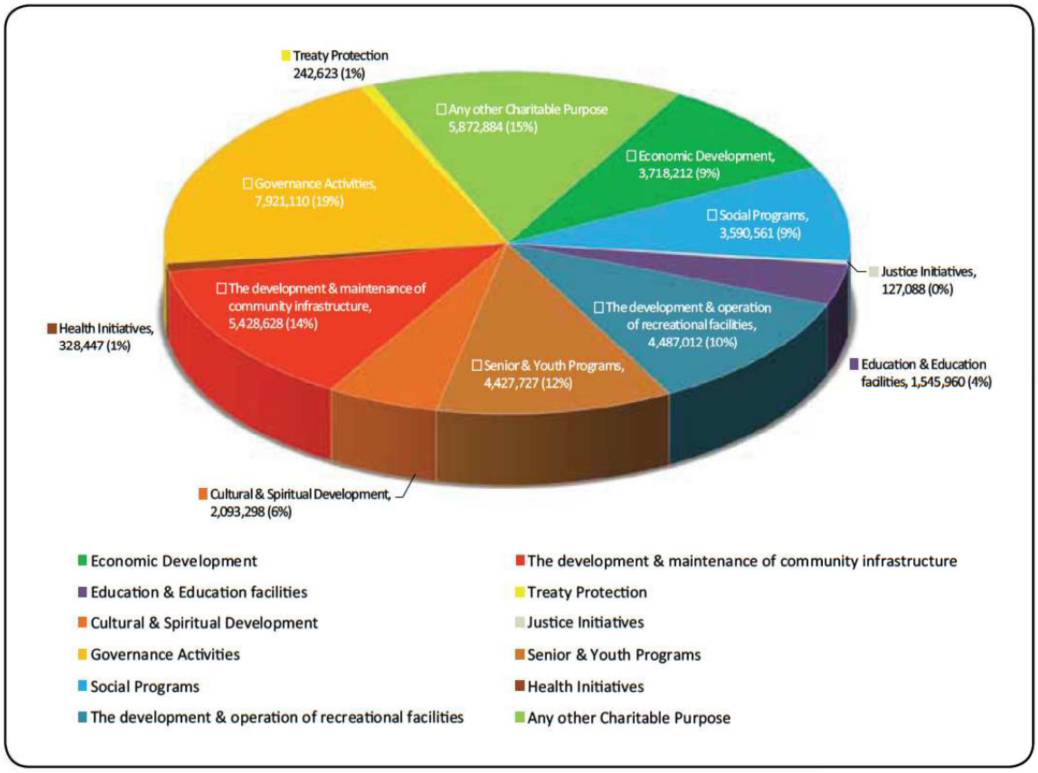
Net revenue from the FN casinos in Saskatchewan has increased steadily, reaching $86 million in 2008/9. The leveling off in SIGA's revenues since 2008/9 might reflect a nationwide trend towards market saturation in the gaming industry. With the rapid expansion in gambling venues, supply may have caught up with demand such that gambling is now a "mature market." In a province with eight casinos and a total population of roughly one million, this is a distinct possibility.

Half the profit, distributed through the First Nations Trust to FNs throughout the province, supports a range of social, cultural and health facilities, with a modest amount (9%) assigned to economic development (Figure 4). The distribution of funds allocated through local community development corporations (one-quarter of total casino profits) shows a similar bias towards social, cultural and health activities as opposed to economic development.



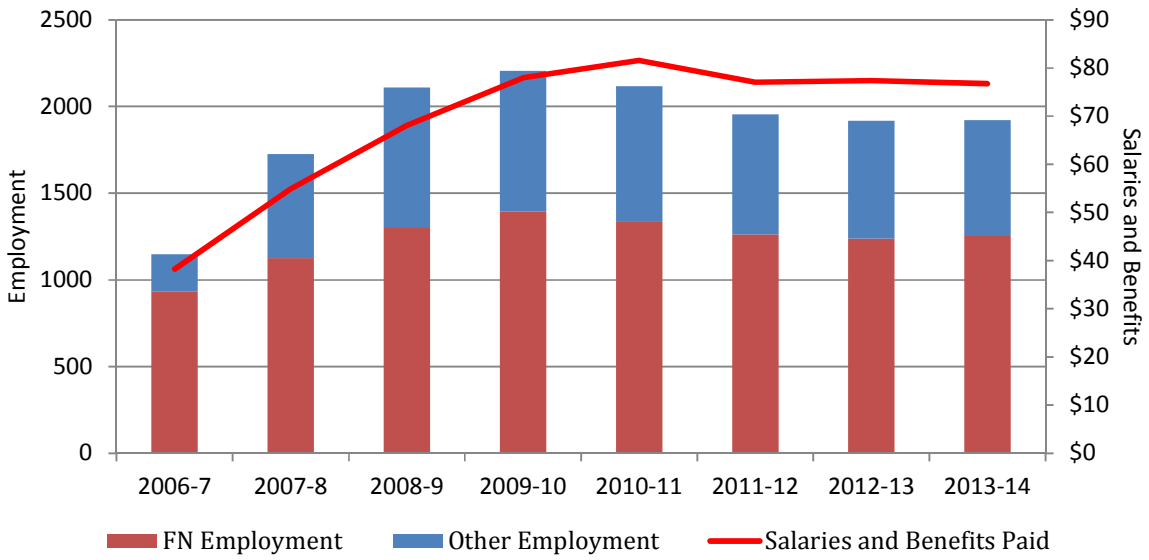
Source: SIGA (2015)

Figure 4: Distribution of Funds, Saskatchewan First Nations Trust



FN casinos in Saskatchewan have also had a significant impact on aboriginal employment. SIGA reports a total employment of over 2,000, with 65% of its staff being aboriginal (SIGA, 2013).

Figure 5: SIGA Direct Employment and Labour Income, 2006/7-2013/14



2. Modeling Net Economic Effects: Growth or Cannibalization?

In order to determine the *net* economic benefits from FN casinos, the observed gains--gaming revenues, increased employment, and spin-off businesses such as hotels, gas-bars and restaurants—must be balanced against the potential for "cannibalization," or a decrease in local spending on unrelated retail services. In other words, does the introduction of gambling opportunities displace spending on other consumer activities?

In a purely private market, firms compete for consumer dollars, and consumers, through their spending, determine which industries expand or contract. With a government-sanctioned industry, however, there is the additional consideration that it might "crowd out" other private industries. When gambling is designed to attract patrons from outside the host community (or keep local residents from visiting other gambling venues), it is a net gain and has no detrimental impact on the spending of local

residents on local businesses. In contrast, when gambling draws on purely local patrons, cannibalization may occur. For example, when the Government of Manitoba began licensing VLTs in rural areas of the province, there was concern expressed that it caused a reduction in local retail spending in two ways: money spent on gambling was not spent on other consumer activities and, the government's share of gaming profits was not recycled locally but flowed out of the community (Cyrenne, 1995). To the extent that patrons are drawn from the immediate area, therefore, the casino may act like a form of localized taxation that reduces the amount of income available for spending in local businesses.

In order to measure the net effects of a casino on surrounding communities, Evans and Topoleski (2002) provide a compelling methodology. They apply a difference-in-difference framework to US data that compares economic outcomes (before and after tribes open casinos) to outcomes over the same period for tribes that do not adopt or are prohibited from adopting gaming. Formally, the outcome of interest (such as employment) for county i in year t (E_{it}) can be estimated as follows:

$$E_{it} = \alpha X_{it} + \beta_1 YRS1_{it} + \beta_2 YRS2_{it} + \beta_2 YRS3+_{it} \ldots + \beta_n YRSN_{it} + C_i + Y_t + \varepsilon_{it}$$

where X_{it} are the region-specific demographic characteristics, C_i is a county's fixed effect, Y_t are year effects, and ε is a random error term. The variable YRS1, YRS2 and YRS3+ measure the time since the casino opened.

They found that four years after tribes open casinos, employment increases by 26%, and tribal population increases by about 12%, resulting in an increase in employment-to-population ratios of roughly 12%. The fraction of working-poor adults declined by 14%. Similarly, they were able to estimate both positive and negative spillovers in surrounding communities. In counties where an Indian-owned casino opens, the employment-population ratio increased by 1% of the median value. More surprising was the apparent increase in population health: four or more years after a casino opens, mortality fell by 22 per 100,000 in a county with a casino and an amount half that in counties near a casino. In

contrast, they found an increase in social costs: four years after a casino opens, bankruptcy rates, violent crime, and auto thefts and larceny are up 10% in counties with a casino.

A similar approach can be fruitfully applied to FN casinos in Saskatchewan. We constructed a data set using information at the level of Census subdivisions (CSDs), rather than counties, from the 1996, 2001, 2006 and 2011 Census, eliminating from the sample those CSDs in the extreme north of the province (Census Division 18). This leaves roughly 450 CSDs per Census year (some information is not recorded in some years), and a total of 1,774 observations.

Since our analysis is preliminary at this stage, we limit our consideration to two outcomes of interest: average Income ($AVGINC_{it}$) and population (POP_{it}) in the CSD. The first provides a measure of relative growth: did the casino lead to higher average higher incomes in the region. The second, provides a sense of the casino's impact on absolute growth: did it help to attract or retain population in the surrounding region. It is possible, for instance, that the presence of a casino does not increase average incomes but did stimulate greater economic activity in the region?

We then estimate the following equations:

$$AVGINC_{it} = \lambda X_i + \sigma_1 lnpop_{it} + \sigma_2 dcasino_{it} + \sigma_3 distance_{it} + \sigma_4 distancesq_{it} + \sigma_5 d2001 + \sigma_6 d2006 + \sigma_7 d2011 + \varepsilon_{it;}$$

and

$$POP_{it} = \mu X_i + ß_1 dcasino_{it} + ß_2 distance_{it} + ß_3 distancesq_{it} + ß_4 d2001 + ß_5 d2006 + ß_6 d2011 + \varepsilon_{it}$$

where; $AVGINC_{it}$; $lnpop_{it}$ is the log of population in the CSD; $dcasino_{it}$ is a dummy variable taking on the value of 1 if there is a casino in the CSD and 0 otherwise; $distance_{it}$ is the number of kilometres by road from the largest population centre in the CSD to the closest casino and $distancesq_{it}$ is the value of $distance_{it}$ squared; d2001, d2006 and d2011 are dummy variables for the appropriate Census year; and ε_i is a random error term.

To control for unobserved, time-independent fixed effects ($\mu X_i, \lambda X_i$) we estimate using both fixed effects and random effects models and consider the robustness of the results across different functional forms. That is, fixed effects estimation does not allow for the estimation of explanatory variables that do not change over time in a CSD, while random effects estimation treats these same explanatory variables as parameters to be estimated.

The $lnpop_{it}$ variable is used to control for scale effects in the average income regressions: one would expect similarly-sized casinos in a large and small population area to have a relatively larger impact on the latter. Three different dummy variables are used to control for the presence of a casino in a CSD (1 if there is a casino in the CSD; 0 otherwise); dcasino_g (1 if there is a government casino in the CSD; 0 otherwise); and dcasino_fn (1 if there is a FN casino in the CSD; 0 otherwise). We also introduce dummy variables specific to each FN casino to consider whether the economic benefits differ for each. We use a quadratic form to estimate the impact of distance to allow for the possibility of non-linearity. Finally, the dummy variables for Census years control for changes over time unrelated to the casino. Because five of the seven casinos in operation opened in the same year (1996), and our data set only begins in 1996, we do not have sufficient information to test for the effect of the introduction of these seven casinos.[5]

If a casino has a net economic benefit on the CSD in which it is located, we expect to find positive estimated coefficients on the dummy variables $dcasino_{it}$, $dcasino\_g_{it}$ and $dcasino\_fn_{it}$. If a casino has a net economic benefit on nearby CSDs, we expected to find a negative estimated coefficient on $distance_{it}$. The estimated coefficient on the dummy variables for Census year are expected to be positive, reflecting absolute growth over time.

3. Estimation Results

[5] To do this would require having data on the CSDs from previous census years. This is one direction in which we plan to expand our research. With this increased data, we will be in a better position to test the robustness of the Evans and Topoleski (2002) results for Canada.

Table 3 summarizes the data used. Average income in a CSD is expressed in 2014 dollars and has a mean value of $36,685. The mean population in CSDs is quite small (1,918) with the notable exceptions of Regina and Saskatoon. Distance to the nearest casino is the number of kilometres by road, and we truncate the number at a maximum of 300. Regarding the dummy variables, the mean values indicate the fraction of CSDs that have either a government casino (d_casino_g), First Nations casino (d_casino_fn) or a casino of any type (d_casino). For example only 1% (.010) of all the CSDs in our sample have a First Nations casino.

Table 3: Descriptive Statistics

Variable	Definition	Min	Max	Mean
average_income	average income, 2014 $	$5,721	$67,632	$36,685
Population	count	250	218,315	1,918
Distance	kilometres by road	0	300	172
d_casino_g	dummy	0	1	0.003
d_casino_fn	dummy	0	1	0.010
d_casino	dummy	0	1	0.014
d_1996	dummy	0	1	0.289
d_2001	dummy	0	1	0.291
d_2006	dummy	0	1	0.275
d_2011	dummy	0	1	0.145

Table 4 reports the estimated impact of a casino on average income in a CSD. The results in Equation (1), using ordinary least squares, are reported for illustration purposes only, since they do not control for the possibility of time-independent heterogeneity among CSDs. Equation (2) uses a fixed effects model, which assumes that the CSD-specific characteristics are correlated with the independent variables, and Equation (3) is based on a random effects model where it is assumed there in no correlation between CSD-specific characteristics and the independent variables.

Table 4: Regression Results, Average Income

	Estimated Coefficients (standard errors in parentheses)		
	(1)	(2)	(3)
	OLS	F.E.	R.E.
lnpop0	0.07106***	0.06298	0.07266***
	(0.01142)	(0.03653)	(0.01370)
dcasinocsd	-0.01076	-0.06561	-0.04895
	(0.16229)	(0.15320)	(0.11272)
dcasinogov	-0.18072	-0.01469	-0.02702
	(0.14022)	(0.18283)	(0.12679)
dcasinofn	-0.1406	0.01459	-0.05786
	(0.17772)	(0.18277)	(0.11600)
distance	-0.00123	-0.00143**	-0.00125**
	(0.00087)	(0.00049)	(0.00045)
distancesq	0.000001	0.00001*	0.00000*
	(0.00000)	(0.00000)	(0.00000)
d_2001	0.11843	0.23149**	0.19055**
	(0.14598)	(0.07203)	(0.06680)
d_2006	0.282	0.39958***	0.35842***
	(0.14635)	(0.07195)	(0.06679)
d_2011	0.64677***	0.69844***	0.66395***
	(0.14532)	(0.07230)	(0.06721)
_constant	9.48636***	9.42839***	9.39291***
	(0.13342)	(0.24531)	(0.10472)
N	1,774	1,774	1,774
r2	0.37007	0.71242	
r2_a	0.36686	0.58513	
F	261.46912	338.28709	

* p<0.05, ** p<0.01, *** p<0.001

The estimation results across the different models imply that the presence of a casino has little impact on the average income in a CSD given the present size of our data set.[6] The dummy variables for the presence of a casino in a CSD are negative but statistically insignificant. In contrast, the negative coefficient on the distance variable suggests that the average income in a CSD falls as the distance from a casino increases. Although statistically significant at the 95% level, the magnitude of the coefficient implies a very weak relationship. In general, we find no strong evidence that the presence of a casino has a measurable impact on the average incomes of the host CSD or adjacent CSDs.

In contrast, the estimated impact of a casino on a CSD's population suggest a stronger, positive relationship (Table 5). Interpreting Equation (3), the random effects model, the presence of a casino has a statistically-significant impact on the host CSD. Since the coefficients on the dummy variables are additive, the results imply that FN casinos have a large and positive impact on population (0.4438 + 0.2777) while the impact of a government casinos in Regina and Moose Jaw had little impact on total population. The differential impact of FN versus government-casinos is not surprising in that FN casinos are located in smaller population centres and, therefore, can be expected to have a larger relative impact. The estimated coefficient on the distance variable is also statistically significant and again implies that CSDs located near a casino experienced higher population growth.

Our results are obviously preliminary, but permit some speculation on the economic impact of FN casinos in Saskatchewan on adjacent CSDs. It is plausible that the presence of a casino has a noticeable impact on *absolute* economic growth (measured in total population) but little or no impact on *relative* economic growth (measured in average incomes). With respect to absolute growth, the casino creates additional net economic activity, implying that the direct effects outweigh any degree of cannibalization. This is tangibly observed in either retaining or attracting more residents in the CSD than

[6] In general, the significance of the casino variables are strongly influenced by the size of the sample. A larger sample may in fact lower the standard errors associated with estimate of the casino effect, potentially revealing the true relationship between the presence of casinos and average income in a CSD.

would otherwise be the case. Where relative economic growth is concerned, the lack of a significant impact on local average incomes is not surprising for two reasons: a) only a small portion of casino profits are retained (or returned) to the host or adjacent CSDs; and b) the employment created tends to be at the lower end of the wage distribution.

We find these results to be sufficiently encouraging to extend the analysis to consider a greater number of dependent variables (including labour market outcomes) and to expand the data set to include Manitoba and Alberta. Capturing provinces with different revenue-sharing regimes will enable us to consider the relative impact of casino revenue distribution agreements on host and non-host FN communities.

Table 5: Regression Results, Population

	Estimated Coefficients (standard errors in parentheses)		
	(1)	**(2)**	**(3)**
	OLS	**F.E.**	**R.E.**
dcasinocsd	3.1107***	0.1144	0.4428***
	(0.4583)	(0.1195)	(0.1187)
dcasinogov	1.1794	-0.1401	-0.4754***
	(0.7268)	(0.1427)	(0.1386)
dcasinofn	0.0000**	0.0582	0.2777*
	(0.5121)	(0.1427)	(0.1373)
distance	-0.0098**	-0.0026***	-0.0028***
	(0.0035)	(0.0004)	(0.0004)
distancesq	0.0000**	0.0000***	0.0000***
	(0.0000)	(0.0000)	(0.0000)
d_2001	0.7693*	0.1355*	0.1594**
	(0.3851)	(0.0561)	(0.059)
d_2006	0.7466	0.0845	0.1087
	(0.3849)	(0.0561)	(0.059)
d_2011	0.8416*	0.0688	0.0922
	(0.3851)	(0.0564)	(0.0593)
_constant	6.1781***	6.5009***	6.4434***
	(0.2665)	(0.048)	(0.0589)
N	1,774	1,774	1,774
r2	0.2313	0.1991	
r2_a	0.2279	-0.1544	
F	20.3749	38.2292	

* p<0.05, ** p<0.01, *** p<0.001

4. Conclusions

Due to the unwillingness of the provinces to hand over or even share jurisdiction over First Nations gaming, FN casinos in Canada are no economic panacea. They do, however, have the potential to contribute to the economic development of FN communities and to nearby non-FN communities. There are also significant challenges to a viable economic development strategy. From a strictly economic perspective, location and scale of operations, profit distribution, control over the managerial function, employment policy and efforts to enhance local capacity to capture a greater share of the indirect or spinoff activities will all have a notable effect on profitability.

If Saskatchewan's experience is representative, the prospect of market saturation and the government-FN compromise of licensing FN casinos in smaller centres will strictly limit the potential economic benefits. Belanger, Williams & Arthur (2013) suggests that a minimum requirement of a 40,000 population base within a 50-kilometre drive is necessary in order to sustain a profitable casino. A smaller population base also implies that casino patrons are drawn more heavily from the local population and this makes the prospect of cannibalization more likely. The distribution of profits between the host FN, other FNs, government and development funds has a direct effect on the location of economic benefits. Although profit sharing may benefit many, actual returns to each stakeholder may be too small to generate a significant long term impact. Other issues can have important impacts on net benefits as well. The experience in Manitoba, for example, whereby the South Beach Casino saw the lion's share of net revenue accrue to the outside management company, emphasizes the need for local control over the facility operations. An effective employment equity policy and a complementary strategy for ensuring that associated spending is captured by community businesses enhances the local economic impact.

Finally, the economic net benefits must be weighed against the social costs and benefits, many of which are, by their nature, difficult to quantify. Gaming is anything but a morally neutral subject, from

concerns with problem gambling to broader issues of FN sovereignty and a potential erosion of the integrity of long-held indigenous values. An extensive benefit-cost analysis does not promise a simple answer to how monetary and non-monetary considerations are to be weighed, but it does provide a basis for how communities may reach their own decision about the merits of engaging in casino ventures for the purposes of economic development.

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