



SJ Research Services

Garth Brooks Regina Concert Economic Impact

August 2019

Table of Contents

List of Tables	2
Executive Summary.....	3
Introduction	3
Summary of Results	3
Introduction	4
Methodology.....	5
Results.....	5
Operations Impact	6
Tourist Spending Impact	7
Detailed Impacts by Industry	8
Government Fiscal Impacts.....	13
Disclaimer	14
References	15
Appendix A: Definitions and Model Description	17
Appendix B: Developing Community Level Input-Output Models.....	18
Appendix C: Mixed Endogenous–Exogenous Input-Output Impacts.....	21

List of Tables

Table 1: Summary of Provincial Impacts - Concert Operations and Tourist Spending (25% non-local)	3
Table 2: Summary of Provincial Impacts - Concert Operations and Tourist Spending (50% non-local)	4
Table 3: Summary of Regina Impacts - Concert Operations and Tourist Spending (25% non-local)	4
Table 4: Summary of Regina Impacts - Concert Operations and Tourist Spending (50% non-local)	4
Table 5: Concert Operation Impact – Province, Regina, Rest of Province (ROP).....	6
Table 6: Tourist Spend Impact (25% non-local) – Province, Regina, Rest of Province (ROP).....	7
Table 7: Tourist Spend Impact (50% non-local) – Province, Regina, Rest of Province (ROP).....	8
Table 8: Impacts by Industry – Province – Concert Operation	9
Table 9: Impacts by Industry – Province – Tourist Spend (25% non-local).....	9
Table 10: Impacts by Industry – Province – Tourist Spend (50% non-local).....	10
Table 11: Impacts by Industry – Regina – Concert Operations	11
Table 12: Impacts by Industry – Regina – Tourist Spend (25% Non-local)	12
Table 13: Impacts by Industry – Regina – Tourist Spend (50% non-local).....	12
Table 14: Summary of Provincial Impacts - Concert Operations and Tourist Spending (25% non-local)	14
Table 15: Summary of Provincial Impacts - Concert Operations and Tourist Spending (50% non-local)	14

Executive Summary

Introduction

Garth Brooks is the number one selling solo artist in U.S. history, a 12-time CMA-ACM Entertainer of the Year, with 6.4 million tickets sold on his last tour. Brooks' multi-year Stadium Tour was planned to stop at Regina's Mosaic Stadium only August 10, 2019. With the August 10 show selling out in 59 minutes, a second show was subsequently added on Friday August 9. It will be Brooks' first time headlining a show in Regina, and the first country concert ever at Mosaic Stadium. Attendance is expected to be 40,000 for both shows.

With an event of such magnitude on the horizon, Praxis undertook a detailed economic impact study of the likely effects on the Regina and provincial economies

Summary of Results

The concerts, through revenues and expenses incurred in operation as well as tourist spending, are expected to add between \$19.2M and \$21.8M in gross economic activity to the provincial economy, between \$13.0M and \$14.9M locally, \$7.3M and \$8.7M in provincial Gross Domestic Product (GDP), between \$4.6M and \$5.6M in local GDP, and support between 371 and 397 jobs provincially, and 334 and 354 jobs locally. Expected government revenues (Federal, Provincial and Municipal) from the events are between \$0.484M \$0.946M.

The overall results for each area identified above are summarized below and repeated in the Detailed Results section of this document which shows the results of spending in each area on the Regina and provincial economies.

Results below are the sum of direct, indirect, and induced impacts for both concert operations (wages, equipment rentals, material purchases, etc.) and tourist spending. All impacts are considered incremental to the Base Case (no concerts) scenario. Operation impacts include concerts operations, salaries, and purchases. Tourist spending includes non-local attendees spending on accommodation, food, and other purchases for 2 scenarios: once with 25% non-local attendees and another with 50% non-local attendees. Direct impact is the total initial expenditure or operating outlays. Indirect impact is the secondary impact that includes inter-industry transactions: purchases of inputs from supporting industries. Induced impact is the additional impact from changes in household spending as industries add labour in response to higher levels of demand for output. Gross Output measures total expenditures on local goods and services as well as payments to labour and business profits. GDP measures net economic activity within a prescribed geographic area. It represents the payments made to final factors of production: labour, unincorporated business profits, and other operating surplus (corporate profits, interest income, inventory valuation adjustments, and capital consumption allowances). Gross domestic product excludes the value of intermediate goods and services used in production. Labour income includes wages, salaries, and employer contributions to pensions and benefit packages.

Table 1: Summary of Provincial Impacts - Concert Operations and Tourist Spending (25% non-local)

Provincial Impacts: Concert Operations and Tourist Spending (25% non- local)	Gross Output (\$M)	Gross Domestic Product (\$M)	Employment (Positions)	Labour Income (\$M)
Operations	16.6	5.8	345	3.0
Tourist Spending	2.6	1.4	26	1.0

Provincial Impacts: Concert Operations and Tourist Spending (25% non- local)	Gross Output (\$M)	Gross Domestic Product (\$M)	Employment (Positions)	Labour Income (\$M)
Total Impact	19.2	7.3	371	4.0

Table 2: Summary of Provincial Impacts - Concert Operations and Tourist Spending (50% non-local)

Provincial Impacts: Concert Operations and Tourist Spending (50% non- local)	Gross Output (\$M)	Gross Domestic Product (\$M)	Employment (Positions)	Labour Income (\$M)
Operations	16.6	5.8	345	3.0
Tourist Spending	5.2	2.8	52	2.0
Total Impact	21.8	8.7	397	5.0

Table 3: Summary of Regina Impacts - Concert Operations and Tourist Spending (25% non-local)

Regina Impacts: Concert Operations and Tourist Spending (25% non- local)	Gross Output (\$M)	Gross Domestic Product (\$M)	Employment (Positions)	Labour Income (\$M)
Operations	11.1	3.5	313	1.8
Tourist Spending	1.9	1.0	20	0.7
Total Impact	13.0	4.6	334	2.6

Table 4: Summary of Regina Impacts - Concert Operations and Tourist Spending (50% non-local)

Regina Impacts: Concert Operations and Tourist Spending (50% non-local)	Gross Output (\$M)	Gross Domestic Product (\$M)	Employment (Positions)	Labour Income (\$M)
Operations	11.1	3.5	313	1.8
Tourist Spending	3.9	2.0	41	1.5
Total Impact	14.9	5.6	354	3.3

Introduction

Garth Brooks is the number one selling solo artist in U.S. history, a 12-time CMA-ACM Entertainer of the Year, with 6.4 million tickets sold on his last tour. Brooks' multi-year Stadium Tour was planned to stop at Regina's Mosaic Stadium only August 10, 2019. With the August 10 show selling out in 59 minutes, a second show was subsequently added on Friday August 9. It will be Brooks' first time headlining a show

in Regina, and the first country concert ever at Mosaic Stadium. Attendance is expected to be 40,000 for both shows.

Methodology

To estimate the concerts' impact, separate economic models were employed for Saskatchewan and Regina using the latest provincial input-output tables available. An input-output table is a means of presenting a detailed analysis of the process of production and the use of goods and services (products) and the income generated in that production. The Saskatchewan model is rectangular in nature with 35 industries and 66 commodities and based on a standardized methodology (Statistics Canada's) and will yield results similar to Statistics Canada's inter-provincial model and the Conference Board of Canada's STEAM Model. Model description and definitions are available in Appendix A. Key to this analysis was the estimation of impacts at the regional level for the Regina region, corresponding to the Regina Census Metropolitan Area (CMA). The region includes: The City of Regina, the RMs of Edenwold, Lumsden, McKillop and Sherwood, and the Towns and Villages of Grand Coulee, Lumsden, Pilot Butte, Regina Beach, Southey, Strasbourg and White City. Regional level impacts were estimated by constructing a separate economic impact model for the region using regional employment by industry to estimate regional output, a community hierarchy model to assess regional trade flows and leakages, and re-balancing to ensure model cohesiveness. The Regina model is a square model with 25 industries. A more detailed discussion of the regional input-output models is available in Appendix B.

The concerts' operational impacts were calculated by creating a mixed endogenous–exogenous model. This approach allows modification of the input structure of the expanding industry to reflect the output and input structure of a new development or event. This approach is appropriate when the input structure of the event differs significantly from the input structure of the impacted industry. Under this approach, gross expenses or revenues are treated as industry gross output and expenses are assigned to either inter-industry purchases or final value-added (wages, amortization, and profits). Operations impacts include expenditures on utilities, equipment, printing, travel, etc. Operational spending impacts reflect all local spending with an estimated local non-local split. Incremental gross output was assigned to the Arts, Entertainment and Recreation industry (which includes professional sports, concerts, and sporting and entertainment venues). A detailed account of the mixed endogenous–exogenous model methodology is available in Appendix C.

In keeping with theory, for tourist impacts, impacts are confined to non-local visitors. Spending of non-local Saskatchewan visitors was also included as the event is of sufficient magnitude to either prompt incremental spending or maintain the spending in the province when it could have been spent elsewhere. The economic impact of visitor spending begins when a visitor spends any amount of money on any product or service in that area. The direct recipients of these expenditures use these dollars to earn income, pay wages, and pay taxes thus creating a direct impact on the local economy. The benefits to the local economy extend beyond the direct impact of these dollars. These expenditures create a chain effect where suppliers, their employees, and service industries, benefitting from additional dollars spent, all spend incremental income. Local resident spending at the event were captured in gate receipts.

Results

All impacts are considered incremental to the hypothetical Base Case (no concerts) scenario. All results are for the 2019 calendar year. Impacts are presented in terms of gross output, gross domestic product at basic prices, employment, labour income and government tax revenues by type. Provincial results are

available at the 35 Provincial industry level of detail but were aggregated to 25 industries to provide comparisons with Regina results. Gross Output measures total expenditures on local goods and services as well as payments to labour and business profits. Gross output is the total value of goods and services produced by an industry and includes intermediate inputs that are foreign and domestically-produced goods and services used by an industry in the production of its gross output. Gross domestic product measures net economic activity within a prescribed geographic area. It represents the payments made to final factors of production: labour, unincorporated business profits, and other operating surplus. Gross domestic product excludes the value of intermediate goods and services used in production. Operational and tourist spending employment results are measured in positions and includes a mix of both full and part-time positions. Labour income includes wages, salaries, and employer benefits. Impacts are presented for Regina, the province as a whole, and the rest of the province outside of Regina (ROP).

Operations Impact

Expected gate receipts of \$7.56M were used as incremental gross output and were assigned to the Arts, Entertainment and Recreation industry Sector. Estimated model inputs are based on a 2006 study of the Rolling Stones Bigger Bang Tour on Regina and Saskatchewan. This figure excludes receipts from sales of souvenirs, and venue food and beverage which are captured under tourist retail and accommodation and food spending.

Expense information on the event was not available. Instead the industry average of expenses per dollar of gross output (gross revenue) was assigned to input-output model industries as incremental inputs. These include both the expenses for operating the shows, wages to staff, and net profits. It was assumed that the bulk of operational inputs were sourced locally and no inputs were of a highly specialized nature. Total direct employment was calculated by the economic model and totaled 300 short-term positions.

Table 5: Concert Operation Impact – Province, Regina, Rest of Province (ROP)

Concert Operation Impact	Province	Regina	ROP
Gross Output (\$M)			
Direct	7.6	7.6	0.0
Indirect	6.0	2.4	3.6
Induced	3.0	1.1	1.9
Total Gross Output	16.6	11.1	5.5
Gross Domestic Product (\$M)			
Direct	2.1	2.1	0.0
Indirect	1.9	0.8	1.2
Induced	1.8	0.7	1.2
Total Gross Domestic Product	5.8	3.5	2.3
Employment (Positions)			
Direct	300	300	0
Indirect	27	10	17
Induced	19	3	15
Total Employment	345	313	32

Concert Operation Impact	Province	Regina	ROP
Labour Income (\$M)			
Direct	1.2	1.2	0.0
Indirect	1.0	0.4	0.6
Induced	0.8	0.2	0.6
Total Labour Income	3.0	1.8	1.2

Tourist Spending Impact

Tourist spending includes non-local attendees spending on accommodation, food, and other purchases for 2 scenarios: once with 25% non-local attendees and another with 50% non-local attendees. This visitor profile corresponds with that experienced at Saskatchewan Roughriders games and other major concerts, notably The Rolling Stones and Sir Paul McCartney. Non local attendees were further split in half with 50% coming from within the Province (but outside of the Regina Region) and the remaining coming from Manitoba/Alberta. A 1-night stay was assumed. The 25% non-local scenario person yielded a 20,000 person night figure and the 50% non-local scenario yielded 40,000 person nights. It should be noted that person nights (and associated accommodation spending) also reflect “staying with family and friends” in the Travel Survey of Residents of Canada.

Spend by input-output category (Transport, Accommodation and Food, Entertainment, and Retail) and origin was obtained through the Statistics Canada Travel Survey Residents of Canada 2016/17. Total visitor spend was estimated at \$1.4M in the 25% scenario and \$2.8M in the 50% scenario.

Table 6: Tourist Spend Impact (25% non-local) – Province, Regina, Rest of Province (ROP)

Tourist Spend Impact (25% non-local)	Province	Regina	ROP
Gross Output (\$M)			
Direct	1.4	1.4	0.0
Indirect	0.5	0.3	0.2
Induced	0.7	0.3	0.4
Total Gross Output	2.6	1.9	0.6
Gross Domestic Product (\$M)			
Direct	0.7	0.7	0.0
Indirect	0.3	0.2	0.1
Induced	0.4	0.2	0.3
Total Gross Domestic Product	1.4	1.0	0.4
Employment (Positions)			
Direct	19	19	0
Indirect	3	1	2
Induced	4	1	4
Total Employment	26	20	6
Labour Income (\$M)			
Direct	0.5	0.5	0.0

Tourist Spend Impact (25% non-local)	Province	Regina	ROP
Indirect	0.2	0.1	0.1
Induced	0.3	0.1	0.2
Total Labour Income	1.0	0.7	0.3

Table 7: Tourist Spend Impact (50% non-local) – Province, Regina, Rest of Province (ROP)

Tourist Spend Impact (50% non-local)	Province	Regina	ROP
Gross Output (\$M)			
Direct	2.8	2.8	0.0
Indirect	1.0	0.5	0.4
Induced	1.4	0.5	0.8
Total Gross Output	5.2	3.9	1.3
Gross Domestic Product (\$M)			
Direct	1.4	1.4	0.0
Indirect	0.6	0.3	0.3
Induced	0.9	0.3	0.5
Total Gross Domestic Product	2.8	2.0	0.8
Employment (Positions)			
Direct	37	37	0
Indirect	6	2	4
Induced	9	2	7
Total Employment	52	41	11
Labour Income (\$M)			
Direct	1.0	1.0	0.0
Indirect	0.4	0.2	0.2
Induced	0.6	0.2	0.4
Total Labour Income	2.0	1.5	0.5

Detailed Impacts by Industry

Tables 8 to 13 provide total impacts (direct, indirect, and induced) of concert operations and tourist spending on the Provincial and Regina Region economies at the 25 industry level of detail. In the case of operations impact, direct impacts are limited to the Arts, Entertainment sector and indirect impacts are noted in industries supplying operating inputs. Induced impacts, reflecting incremental household spending, occur largely in retail and service industries. For tourist spending, the limited total and direct activity occurs within the Transportation, Retail, Arts, Entertainment and Recreation Accommodation and Food service industries and the industries providing operating inputs to these. Induced impacts, which represent the additional impacts of consumer spending of wages earned, is concentrated heavily within the retail trade and service industries. Note that columns may not add due to rounding errors.

Table 8: Impacts by Industry – Province – Concert Operation

Impacts By Industry – Province - Concert Operation	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Crop and Animal Production	0.1	0.0	0	0.0
Forestry and Logging	0.0	0.0	0	0.0
Fishing, Hunting and Trapping	0.0	0.0	0	0.0
Support Activities for Agriculture and forestry	0.0	0.0	0	0.0
Mining and Oil and Gas Extraction	0.1	0.1	0	0.0
Utilities	0.3	0.2	0	0.0
Construction	0.2	0.1	1	0.0
Manufacturing	0.2	0.1	0	0.0
Wholesale Trade	0.2	0.1	1	0.1
Retail Trade	1.5	0.9	21	0.7
Transportation and Warehousing	0.2	0.1	1	0.0
Information and Cultural Industries	0.2	0.1	1	0.0
Finance, Insurance, Real Estate and Rental and Leasing	1.8	1.2	4	0.2
Professional, Scientific and Technical Services	0.3	0.2	2	0.1
Administrative and Support, Waste Management and Remediation Services	0.2	0.1	2	0.1
Educational Services	0.0	0.0	0	0.0
Health Care and Social Assistance	0.1	0.1	1	0.0
Arts, Entertainment and Recreation	7.6	2.1	300	1.2
Accommodation and Food Services	0.2	0.1	3	0.1
Other Services (Except Public Administration) Operating, Office, Cafeteria and Laboratory Supplies	0.4	0.2	5	0.2
Travel, Entertainment, Advertising and Promotion	2.3	0.0	0	0.0
Transportation Margins	0.7	0.0	0	0.0
Non-Profit Institutions Serving Households	0.0	0.0	0	0.0
Government Sector	0.1	0.0	1	0.0
Total	16.6	5.8	345	3.0

Table 9: Impacts by Industry – Province – Tourist Spend (25% non-local)

Impacts By Industry – Province – Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Crop and Animal Production	0.0	0.0	0	0.0
Forestry and Logging	0.0	0.0	0	0.0
Fishing, Hunting and Trapping	0.0	0.0	0	0.0
Support Activities for Agriculture and forestry	0.0	0.0	0	0.0
Mining and Oil and Gas Extraction	0.0	0.0	0	0.0
Utilities	0.1	0.0	0	0.0
Construction	0.0	0.0	0	0.0
Manufacturing	0.1	0.0	0	0.0
Wholesale Trade	0.0	0.0	0	0.0

Impacts By Industry – Province – Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Retail Trade	0.3	0.2	4	0.1
Transportation and Warehousing	0.2	0.1	1	0.1
Information and Cultural Industries	0.0	0.0	0	0.0
Finance, Insurance, Real Estate and Rental and Leasing	0.4	0.2	1	0.2
Professional, Scientific and Technical Services	0.0	0.0	0	0.0
Administrative and Support, Waste Management and Remediation Services	0.0	0.0	0	0.0
Educational Services	0.0	0.0	0	0.0
Health Care and Social Assistance	0.0	0.0	0	0.0
Arts, Entertainment and Recreation	0.4	0.2	6	0.2
Accommodation and Food Services	0.8	0.4	12	0.3
Other Services (Except Public Administration)	0.0	0.0	0	0.0
Operating, Office, Cafeteria and Laboratory Supplies	0.0	0.0	0	0.0
Travel, Entertainment, Advertising and Promotion	0.0	0.0	0	0.0
Transportation Margins	0.0	0.0	0	0.0
Non-Profit Institutions Serving Households	0.0	0.0	0	0.0
Government Sector	0.1	0.0	0	0.0
Total	2.6	1.4	26	1.0

Table 10: Impacts by Industry – Province – Tourist Spend (50% non-local)

Impacts By Industry – Province – Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Crop and Animal Production	0.1	0.0	0	0.0
Forestry and Logging	0.0	0.0	0	0.0
Fishing, Hunting and Trapping	0.0	0.0	0	0.0
Support Activities for Agriculture and forestry	0.0	0.0	0	0.0
Mining and Oil and Gas Extraction	0.1	0.0	0	0.0
Utilities	0.1	0.1	0	0.0
Construction	0.1	0.0	0	0.0
Manufacturing	0.2	0.0	0	0.0
Wholesale Trade	0.1	0.0	0	0.0
Retail Trade	0.6	0.4	8	0.3
Transportation and Warehousing	0.4	0.2	2	0.1
Information and Cultural Industries	0.1	0.0	0	0.0
Finance, Insurance, Real Estate and Rental and Leasing	0.7	0.5	1	0.4
Professional, Scientific and Technical Services	0.1	0.0	0	0.0
Administrative and Support, Waste Management and Remediation Services	0.1	0.0	1	0.0
Educational Services	0.0	0.0	0	0.0
Health Care and Social Assistance	0.0	0.0	0	0.0
Arts, Entertainment and Recreation	0.9	0.4	11	0.3

Impacts By Industry – Province – Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Accommodation and Food Services	1.6	0.8	24	0.6
Other Services (Except Public Administration)	0.1	0.0	1	0.0
Operating, Office, Cafeteria and Laboratory Supplies	0.0	0.0	0	0.0
Travel, Entertainment, Advertising and Promotion	0.0	0.0	0	0.0
Transportation Margins	0.0	0.0	0	0.0
Non-Profit Institutions Serving Households	0.0	0.0	0	0.0
Government Sector	0.1	0.1	1	0.1
Total	5.2	2.8	52	2.0

Table 11: Impacts by Industry – Regina – Concert Operations

Impacts By Industry – Regina – Concert Operations	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Crop and Animal Production	0.0	0.0	0	0.0
Forestry and Logging	0.0	0.0	0	0.0
Fishing, Hunting and Trapping	0.0	0.0	0	0.0
Support Activities for Agriculture and forestry	0.0	0.0	0	0.0
Mining and Oil and Gas Extraction	0.0	0.0	0	0.0
Utilities	0.2	0.1	0	0.0
Construction	0.1	0.0	0	0.0
Manufacturing	0.1	0.0	0	0.0
Wholesale Trade	0.1	0.1	0	0.0
Retail Trade	0.4	0.3	6	0.2
Transportation and Warehousing	0.1	0.0	0	0.0
Information and Cultural Industries	0.1	0.0	0	0.0
Finance, Insurance, Real Estate and Rental and Leasing	0.9	0.6	2	0.1
Professional, Scientific and Technical Services	0.1	0.1	1	0.0
Administrative and Support, Waste Management and Remediation Services	0.1	0.0	1	0.0
Educational Services	0.0	0.0	0	0.0
Health Care and Social Assistance	0.0	0.0	0	0.0
Arts, Entertainment and Recreation	7.6	2.1	300	1.2
Accommodation and Food Services	0.0	0.0	0	0.0
Other Services (Except Public Administration)	0.1	0.1	2	0.1
Operating, Office, Cafeteria and Laboratory Supplies	0.9	0.0	0	0.0
Travel, Entertainment, Advertising and Promotion	0.3	0.0	0	0.0
Transportation Margins	0.0	0.0	0	0.0
Non-Profit Institutions Serving Households	0.0	0.0	0	0.0
Government Sector	0.1	0.0	1	0.0
Total	11.1	3.5	313	1.8

Table 12: Impacts by Industry – Regina – Tourist Spend (25% Non-local)

Impacts By Industry – Regina – Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Crop and Animal Production	0.0	0.0	0	0.0
Forestry and Logging	0.0	0.0	0	0.0
Fishing, Hunting and Trapping	0.0	0.0	0	0.0
Support Activities for Agriculture and forestry	0.0	0.0	0	0.0
Mining and Oil and Gas Extraction	0.0	0.0	0	0.0
Utilities	0.0	0.0	0	0.0
Construction	0.0	0.0	0	0.0
Manufacturing	0.1	0.0	0	0.0
Wholesale Trade	0.0	0.0	0	0.0
Retail Trade	0.1	0.1	2	0.1
Transportation and Warehousing	0.2	0.1	1	0.0
Information and Cultural Industries	0.0	0.0	0	0.0
Finance, Insurance, Real Estate and Rental and Leasing	0.3	0.2	1	0.1
Professional, Scientific and Technical Services	0.0	0.0	0	0.0
Administrative and Support, Waste Management and Remediation Services	0.0	0.0	0	0.0
Educational Services	0.0	0.0	0	0.0
Health Care and Social Assistance	0.0	0.0	0	0.0
Arts, Entertainment and Recreation	0.4	0.2	5	0.2
Accommodation and Food Services	0.7	0.4	11	0.3
Other Services (Except Public Administration)	0.0	0.0	0	0.0
Operating, Office, Cafeteria and Laboratory Supplies	0.0	0.0	0	0.0
Travel, Entertainment, Advertising and Promotion	0.0	0.0	0	0.0
Transportation Margins	0.0	0.0	0	0.0
Non-Profit Institutions Serving Households	0.0	0.0	0	0.0
Government Sector	0.0	0.0	0	0.0
Total	1.9	1.0	20	0.7

Table 13: Impacts by Industry – Regina – Tourist Spend (50% non-local)

Impacts By Industry – Regina - Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Crop and Animal Production	0.0	0.0	0	0.0
Forestry and Logging	0.0	0.0	0	0.0
Fishing, Hunting and Trapping	0.0	0.0	0	0.0
Support Activities for Agriculture and forestry	0.0	0.0	0	0.0
Mining and Oil and Gas Extraction	0.0	0.0	0	0.0
Utilities	0.1	0.0	0	0.0
Construction	0.0	0.0	0	0.0
Manufacturing	0.1	0.0	0	0.0

Impacts By Industry – Regina - Tourist Spend	Gross Output Impact (\$M)	GDP at Basic Prices Impact (\$M)	Employment Impact (Positions)	Labour Income Impact (\$M)
Wholesale Trade	0.1	0.0	0	0.0
Retail Trade	0.2	0.1	3	0.1
Transportation and Warehousing	0.3	0.2	2	0.1
Information and Cultural Industries	0.0	0.0	0	0.0
Finance, Insurance, Real Estate and Rental and Leasing	0.5	0.3	1	0.3
Professional, Scientific and Technical Services	0.0	0.0	0	0.0
Administrative and Support, Waste Management and Remediation Services	0.0	0.0	0	0.0
Educational Services	0.0	0.0	0	0.0
Health Care and Social Assistance	0.0	0.0	0	0.0
Arts, Entertainment and Recreation	0.8	0.4	11	0.3
Accommodation and Food Services	1.4	0.7	22	0.5
Other Services (Except Public Administration)	0.0	0.0	0	0.0
Operating, Office, Cafeteria and Laboratory Supplies	0.0	0.0	0	0.0
Travel, Entertainment, Advertising and Promotion	0.0	0.0	0	0.0
Transportation Margins	0.0	0.0	0	0.0
Non-Profit Institutions Serving Households	0.0	0.0	0	0.0
Government Sector	0.0	0.0	0	0.0
Total	3.9	2.0	41	1.5

Government Fiscal Impacts

An expansion in economic activity is expected to generate incremental government revenues. The economic impact model's fiscal module is based on the latest provincial and federal budgets and estimates government revenues as follows:

- Provincial personal income tax is calculated by using the provincial personal income tax rate that would apply to average industry annual income. This is applied to model-generated labour income.
- Federal personal income tax is calculated by using the federal personal income tax rate that would apply to average industry annual income applied to model-generated labour income.
- Corporation income tax is calculated by applying the respective provincial and federal corporate tax rate to incremental corporate profits before taxes calculated by the model.
- Unincorporated business income taxes are calculated by applying the small business tax rate to incremental unincorporated business profits calculated by the model.
- Federal and Provincial sales taxes collected on goods are calculated using an estimated split of federal provincial taxes applied to model generated indirect taxes on products. All model generated indirect taxes on services are considered federal sales and excise tax revenues.
- Local/municipal government fiscal impacts are based on the stable ratio of Regina municipal revenues to regional GDP and the breakdown of Regina revenues by component part after removing government transfers.

Table 14: Summary of Provincial Impacts - Concert Operations and Tourist Spending (25% non-local)

Government Revenue Impacts Operations and Tourist Spend	Personal Income Tax (PIT)	Corporate Income Tax	Taxes Unincorporated Business Profits	Sales and Excise Taxes	Total Revenue
Federal (\$M)	0.471	0.090	0.119	0.102	0.783
Provincial (\$M)	0.324	0.072	0.087	0.639	1.122
	Taxes	Fees and Charges	Government Transfers	Other*	Total Revenue
Municipal (\$M)	0.058	0.056	0.006	0.025	0.145

* Servicing Agreement Fees, Licenses Fees and Levies, interest and penalties, gas distribution, Interest on portfolio investments, Realized gains on portfolio investments, land sales, and Contribution of tangible capital assets.

Table 15: Summary of Provincial Impacts - Concert Operations and Tourist Spending (50% non-local)

Government Revenue Impacts Operations and Tourist Spend	Personal Income Tax (PIT)	Corporate Income Tax	Taxes Unincorporated Business Profits	Sales and Excise Taxes	Total Revenue
Federal (\$M)	0.175	0.019	0.029	0.033	0.255
Provincial (\$M)	0.083	0.016	0.021	0.025	0.145
	Taxes	Fees and Charges	Electrical Distribution	Other*	Total Revenue
Municipal (\$M)	0.033	0.032	0.004	0.015	0.083

* Servicing Agreement Fees, Licenses Fees and Levies, interest and penalties, gas distribution, Interest on portfolio investments, Realized gains on portfolio investments, land sales, and Contribution of tangible capital assets.

Estimated government revenues are for direct, indirect, and induced impacts and do not represent solely the project's taxes paid. Estimates are not adjusted for any changes to equalization entitlements.

Disclaimer

This study is a community service of Praxis and was not commissioned by an external party. It is independent of Garth Brooks and the Regina Exhibition Association Ltd. and is not in any way related to either corporation or persons associated with them.

References

- Johnson, Stephen, 2018. Economic Impact Assessment-TCU Place Saskatoon.
- Johnson, Stephen, 2018. Economic Impact of Mosaic Stadium on the local and provincial economies.
- Johnson, Stephen, 2018. Economic Impact of Evraz Place on the local and provincial economies.
- Johnson, Stephen, 2018. Economic Impact of the 2017 Canadian Dairy Expo on the Local, Provincial, and National Economies.
- Johnson, Stephen, 2018. Multi-Community Tourism Economic Impact Models Prepared for Tourism Saskatchewan. April 2018.
- Johnson, Stephen, 2018. Economic Impact of the Queen City Marathon on the Local and Provincial Economies.
- Johnson, Stephen, 2018. Economic Impact of the 2017 Agribition on the Local and Provincial Economies.
- Johnson, Stephen, 2017. Economic Impact Assessment: SaskTel Centre and TCU Place.
- Johnson, Stephen, 2016. Regina Hotel Association Destination Marketing Program Economic Impact Assessment.
- Johnson, Stephen, 2016. Economic Impact of the 2015 Canadian Western Agribition on the Provincial and Local Economies-Prepared for Canadian Western Agribition.
- Johnson, Stephen, 2014. Economic Impact of the 2014 North American Indigenous Games-Prepared for NAIG 2014.
- Johnson, Stephen, 2014. Economic Impact Assessment - SAASE Supported Fairs and Events -Prepared for Saskatchewan Association of Agricultural Societies and Exhibitions/McNair Business Development.
- Johnson, Stephen, 2013. Economic Impact Assessment – Destination Marketing Fund and Regina Convention Team-Prepared for Regina Hotel Association/McNair Business Development.
- Johnson, Stephen, 2012. Economic Impact of the 2012 Canadian Western Agribition on the Provincial and Local Economies. Prepared For Canadian Western Agribition.
- Johnson, Stephen, 2012. Economic Impact of the Regina Revitalization Initiative on the Local and Provincial Economies. Prepared for the City of Regina.
- Johnson, Stephen, 2012. Regina Hotel Association Destination Marketing Fund - Conferences and Conventions - Economic Impact Assessment-Prepared for the Regina Convention Team.
- Johnson, Stephen, 2011. Economic Impact of Evraz Place on the Local and Provincial Economies-Prepared for Evraz Place.

Johnson, Stephen, 2008. Economic Impact of Ipsco Place Phase 1 Revitalization on the Regina and Provincial Economies. Prepared for Ipsco Place.

Johnson, Stephen, 2007. Economic Impact of Ipsco Place on the Regina and Provincial Economies. Prepared for Ipsco Place.

Johnson, Stephen, 2006. Economic Impact of the 2005 Canadian Western Agribition on the Provincial and Local Economies-Prepared for Canadian Western Agribition.

Johnson, Stephen, 2006. Economic Impact of the Moose Jaw Communiplex on the Provincial & Local Economies-Prepared For the Moose Jaw Chamber of Commerce.

Johnson, Stephen, 2005. Economic Impact of the Lieutenant Governor's Celebration of the Arts on the Provincial Economy-Prepared for the 2005 Saskatchewan Centennial Committee.

Johnson, Stephen, 2003. Economic Impact of the 2003 Grey Cup on the Provincial Economy. Prepared For the 2003 Grey Cup Committee.

Johnson, Stephen, 2008. Impact Analysis of the RCMP Heritage Centre-Prepared for the RCMP Heritage Centre.

Johnson, Stephen, 2010. 2013 Juno Awards in Regina – Economic Impact Assessment. Prepared for Regina Regional Opportunities Commission.

Johnson, Stephen, 2006. Economic Impact of the 2006 Rolling Stones Bigger Bang Tour on the Regina Economy.

Miller, R. E., and P. Blair, 1985, Prentice Hall, Inc. Input-Output Analysis: Foundations and Extensions.

NYRR, New York City Sees Significant Economic Impact from TCS New York City Marathon
October 26, 2015

Olfert, M. Rose and Jack C. Stabler. 1994. Community Level Multipliers for Rural Development Initiatives, Growth and Change, 25: 467-486.

Stabler, Jack C. and M. Rose Olfert. 1992. Regina: Canadian Plains Research Center.
Restructuring Rural Saskatchewan: the Challenge of the 1990s.

Statistics Canada Industry Accounts Division / System of National Accounts, 2015. Saskatchewan 2012 Input-Output Tables.

Statistics Canada; Travel Survey of Canada 2016/17

Statistics Canada. Table 381-0009 - Inputs and outputs, by industry and commodity, L-level aggregation and North American Industry Classification System (NAICS), annual (dollars) (table), CANSIM (database).

Appendix A: Definitions and Model Description

Direct Impact: total project expenditure, usually construction or operating outlays.

Employment: measured in positions.

Final Demand: sum of personal expenditure, government purchases of goods and services, business and government investment, and net exports.

GDP at factor cost: measure of net economic activity within a prescribed geographic area. It represents the payments made to final factors of production: labour, unincorporated business profits, and other operating surplus (corporate profits, interest income, inventory valuation adjustments, and capital consumption allowances). GDP at factor cost excludes the value of intermediate goods and services used in production.

GDP at market prices: GDP at factor cost plus indirect taxes less subsidies.

Gross Output: total expenditures on local goods and services as well as payments to labour and business profits. Gross output includes double counting because it includes the value of inputs used in production rather than net value added alone.

Indirect Impact: the secondary impact that includes inter-industry transactions, purchases of inputs from supporting industries

Induced impact: the additional impact from changes in household spending as industries modify labour input requirements in response to altered levels of demand for output.

Industry outputs are calculated as $(I-D(I-\mu-\alpha-\beta)B)-1D((I-\mu-\alpha-\beta)e^*+(I-\mu-\beta)X_d+(I-\mu)X_r)=X$

Where:

I = an identity matrix of industry by industry dimension

D = a matrix of coefficients representing commodity output proportions

B = a matrix of coefficients representing commodity input proportions (technical coefficients) by industry

μ = a diagonal matrix whose elements represent the ratio of imports to use

α = a diagonal matrix whose elements represent the ratio of government production to use

β = a diagonal matrix whose elements represent the ratio of inventory withdrawals to use

e^* = final demand categories of consumption, government purchases of goods and services, business and government investment, and inventory additions.

X_d = final demand category of domestic exports

X_r = final demand category of re-exports.

Employment is calculated as a fixed number of positions per dollar of industry output.

Appendix B: Developing Community Level Input-Output Models

The latest available provincial input-output tables at the S-Level from Statistics Canada were used as the starting point. The table represents 25 industries and 18 components of final demand (based on the 2015 S-level aggregation, the latest available). The tables were converted into industry-by-industry space.

In a square input-output table, each industry in the table can be represented as a column. For example industry 1 can be represented as follows:

z11
z12
.
.
.
z125
w1
X1

z_{ij} = purchases by industry i of products from industry j . The transactions matrix consists of z_{11} to z_{2525} comprise the transactions matrix of 625 (25×25) elements.

W_1 = value added or gross domestic product component of industry 1's output which includes wages, salaries, supplementary labour income, unincorporated business profits, incorporate income profits, other income, and depreciation.

X_1 = industry 1's total output, which equals W_1 plus the sum of z_{11} to z_{25} .

To create sub-provincial models, four challenges must be overcome:

Allocation of provincial gross output by community/region

Estimation of technical coefficients by industry at a community/regional level

Estimation of components of gross domestic product by industry at a community/regional level

Allocation of provincial final demand output by community/region.

Census data on labour force by industry will be used to allocate gross output by industry for the region/community. Regional gross output for industry i is estimated:

$$X_{Ri} = \text{Labour Force}_{Ri} / \text{Labour Force}_{Ski} \times X_{Ski}$$

Where:

X_{Ri} = regional gross output for industry i

Labour Force_{Ri} = regional labour force for industry i

$\text{Labour Force}_{Ski}$ = provincial labour force for industry i

X_{Ski} = provincial gross output for industry i

To estimate items in each regional transaction matrix (z_{ij}) it will be assumed in all cases that the provincial input structure will apply to regional industries. The components of the regional transaction matrix are estimated:

$$zR_{ij} = zSK_{ij}/X_{Ski} \times X_{Ri}$$

Where:

zR_{ij} = an element of the regional transactions matrix.

zSK_{ij} = the corresponding element of the provincial transactions matrix.

The same methodology is used for estimating the components of GDP.

$$WR_i = WS_{ki}/X_{Ski} \times X_{Ri}$$

Where:

WR_i = regional value added or gross domestic product component of industry i 's output

WS_{ki} = provincial value added or gross domestic product component of industry i 's output

The components of final demand are estimated as follows. Personal expenditures are based on a per capita allocation of provincial spending.

$$PER_i = PES_{ki}/Pop_{Sk} \times Pop_R$$

Where:

PER_i = Regional personal expenditure on industry i 's output

PES_{ki} = Provincial personal expenditure on industry i 's output

Pop_{Sk} = Provincial population

Pop_R = Regional population

Gross capital formation (GFCF) or investment by industry is estimated applying the regional share industry to total provincial gross capital formation for each industry. The same approach is used to estimate exports (X_d), imports (M), and inventory changes by industry (VPC)

$$GFCFR_i = X_{Ri}/X_{Ski} \times GFCFS_{ki}$$

$$XdR_i = X_{Ri}/X_{Ski} \times XdS_{ki}$$

$$MR_i = X_{Ri}/X_{Ski} \times MS_{ki}$$

$$VPCR_i = X_{Ri}/X_{Ski} \times VPCS_{ki}$$

Where:

$GFCFR_i$ = Regional investment spending on industry i 's output.

$GFCFS_{ki}$ = Provincial investment spending on industry i 's output

XdR_i = Regional exports of industry i 's output

XdS_{ki} = Provincial exports of industry i 's output

MR_i = Regional imports of industry i 's output

MS_{ki} = Provincial imports of industry i 's output

$VPCR_i$ = Regional inventory changes of industry i 's output

$VPCS_{ki}$ = Provincial inventory changes of industry i 's output

Regional public administration employment is used to allocate provincial government current expenditures by region.

$$GCER_i = PAER/PAES_k \times GCES_k$$

Where:

GCER_i = Regional government current expenditures on industry i's output

PAER = Regional public administration labour force

PAES_k = Provincial public administration labour force

GCES_k = Provincial government current expenditures on industry i's output

It is also necessary to adjust for leakages for intra-provincial imported factors of production.

These are estimated residually: If the sum of the use (both Final Demand and Inter-industry sales) of industry i's output is less than X_i then, intra-provincial exports are used to balance. Similarly, if use is greater than X_i intra-provincial imports are used the balance.

Intra-provincial exports/imports and exports due to out-shopping are estimated by calculating the marginal propensity to out-shop (the ratio of major community per capita retail sales to provincial per capita retail sales and multiplying by PE. Imports and exports are adjusted by this amount.

The estimation of intra-provincial imports into a region/community and incorporation of intra-provincial imports into the region/community model's leakages will constrain local multipliers to values not exceeding provincial level multipliers.

Developing Community/Regional Impact Models

Industry outputs in response to a shock in final demand are calculated as $(I - (I - \mu - \alpha - \beta)A)^{-1}((I - \mu - \alpha - \beta)e^* + (I - \mu - \beta)X_d + (I - \mu)X_r) = X$

Where:

I = an identity matrix of industry by industry dimension

A = a matrix of technical coefficients representing inter-industry purchases (z_{ij}) divided by own industry gross output X_i.

μ = a diagonal matrix whose elements represent the ratio of imports to use

α = a diagonal matrix whose elements represent the ratio of government production to use

β = a diagonal matrix whose elements represent the ratio of inventory withdrawals to use

e* = final demand categories of consumption, government purchases of goods and services, business and government investment, and inventory additions.

X_d = final demand category of domestic exports

X_r = final demand category of re-exports.

Employment is calculated as a fixed number of positions per dollar of industry output.

GDP components are calculated based on a fixed ratio of W_i to industry output.

Appendix C: Mixed Endogenous–Exogenous Input-Output Impacts

In a 3 industry x 3 industry input-output model with industry 3 exogenized, endogenous industry output and final demand XM

$$\begin{pmatrix} X1 \\ X2 \\ YL3 \end{pmatrix}$$

is calculated as follows:

$$XM = M^{-1} YM$$

Where M=

$$\begin{pmatrix} (1-a_{L11}) & -a_{L12} & 0 \\ -a_{L21} & (1-a_{L22}) & 0 \\ -a_{L31} & -a_{L32} & -1 \end{pmatrix}$$

$$AL = (D(I - \mu - \alpha - \beta)B)$$

YM=

$$\begin{pmatrix} YL1 + a_{L13}X3 \\ 3 \\ YL2 + a_{L23}X3 \\ 3 \\ -(1-a_{L33})X3 \end{pmatrix}$$

$$YL = D((I - \mu - \alpha - \beta)e^* + (I - \mu - \beta)Xd + (I - \mu)Xr)$$

Where:

I = an identity matrix of industry by industry dimension

D = a matrix of coefficients representing commodity output proportions

B = a matrix of coefficients representing commodity input proportions (technical coefficients) by industry

μ = a diagonal matrix whose elements represent the ratio of imports to use

α = a diagonal matrix whose elements represent the ratio of government production to use

β = a diagonal matrix whose elements represent the ratio of inventory withdrawals to use

e^* = final demand categories of consumption, government purchases of goods and services, business and government investment, and inventory additions.

X_d = final demand category of domestic exports

X_r = final demand category of re-exports.