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Local Area Economic Dependencies: 2006

There has been significant and continued interest in understanding the extent, and nature, of economic dependence in and across British Columbia communities. Having available a profile of community economic dependence is the first step in planning for, and understanding the potential impacts of, change at the local area level.

BC Stats recently updated the Local Area Economic Dependencies report using data from the 2006 Census. The report examines the economic dependency of 63 local areas in the province on a suite of "driver" sectors such as forestry, mining, tourism, the public sector, etc. The study is intended to provide policy makers with a quantitative understanding of local economies, and aid in the estimation of the economic impacts related to changes in those economies[1].

Analytical Approach

The report uses an "economic base" methodology in its analysis. The fundamental premise is that the economy of a community can be represented by income flows that are classified as either "basic" or "non-basic", depending on the source of the income. Basic income is assumed to flow into a community from outside, and is comprised of 10

employment income sectors, and two non-employment income sectors.

Driving Sectors—Basic Employment Income
- Forestry and Associated Manufacturing
- Mining and Oil & Gas
- Fishing and Trapping
- Agriculture and Food & Beverage Manufacturing
- Tourism
- High technology
- Public Sector
- Construction
- Film Production and Sound Recording
- Other Employment Income

Driving Sectors—Basic Non-Employment Income
- Transfer payments
- Other Non-Employment Income

Non-basic income is employment income generated within the community—i.e., to a large extent generated by retail trade, local transportation, financial, and personal services.

Economic Dependence

The study examines economic dependence across 63 local areas in BC based on the type and nature of income flows, and their relative contribution to total community income. Of course, it is possible to roll-up the analysis to obtain a picture of the "typical" local area economic dependency. When we examine the

[1] Funding for this project was made possible through the Labour Market Information initiative under the Canada-British Columbia Labour Market Agreement (LMA), which is administered for BC by the Ministry of Advanced Education and Labour Market Development.

mean economic dependencies[2], it becomes apparent that, for the "typical" community in BC, the public sector, transfer payments, and other non-employment income are significant sources of income, accounting for 56% of total community incomes.

Mean Economic Dependencies (%): 2006

Data Source: BC Stats
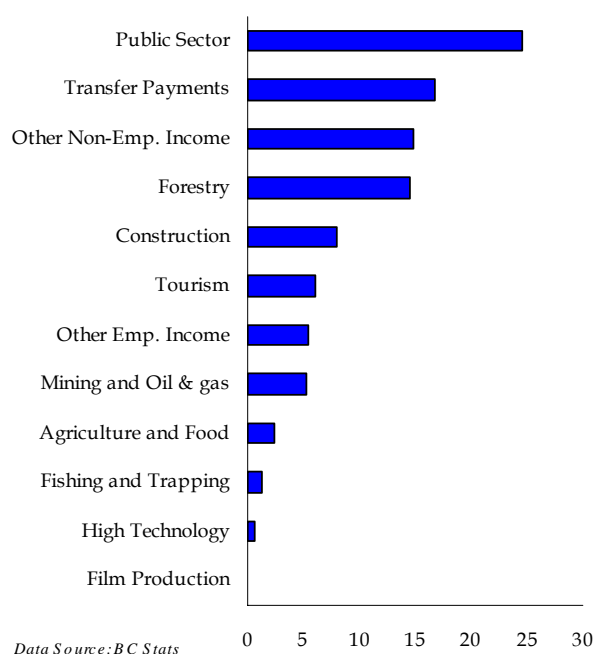
Communities that approximate the "typical" include Duncan, Ladysmith, Lillooet, and Cranbrook-Kimberly. There are also numerous atypical examples across the various sectors.

Non-Employment Income

Non-employment income (transfer payments and other non-employment income) consists of payments from government—e.g., CPP, OAP, social assistance, EI, etc.—and sources such as pensions, investment income, alimony and child support, etc. For the "typical" community in BC, non-employment income accounts for 31% of total income, providing a significant,

stable income flow to BC communities. Atypically dependent areas include retirement havens like Parksville-Qualicum (52%) and Oliver-Osoyoos (51%) where dependence on pension and investment income accounts for more than half of total income.

Public Sector

The public sector includes all levels of government—federal, provincial and local. While public sector dependence for the "typical" community amounts to 25% of total income, there is a significant range of dependence on the sector—over 50% in Stewart and Central Coast, with lowest dependence at 13% for Fernie. Generally speaking, the public sector is an important, stabilizing income source for most areas in the province.

Extraction Sectors

When we consider the main extraction sectors – forestry; mining and oil & gas; and fishing and trapping—together, these accounted for 21% of total income for the average community. Extraction sector dependence in 2006 varied considerably in the province, from 50% in Fernie, Vanderhoof and Fort Nelson, to 2% for Victoria.

Tourism

Tourism comprises activity across several service industries (e.g., accommodation, food and beverage, transportation, retail) and is considered to be an exporting sector. In relation to other sectors (e.g., extraction) wages and salaries tend to be lower in the tourism sector, which tends to mask the number of dependent jobs. In 2006, average community income dependence was 6% from tourism, while Squamish showed the highest dependence at 27%, with Invermere at 16%. The lowest dependence on tourism, at 1%, was seen in Matsqui-Abbottsford.

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[2] It should be noted that these aggregate level dependencies are calculated as a simple average across the 63 local areas, which implicitly weights each area equally. An alternate approach would be to employ population–weighted mean dependencies.

The report also undertakes further analytical refinement of the income dependency information to aid understanding of actual and potential community dependence. Two of these enhancements include a measure of diversity, and a measure of forest sector vulnerability.

Economic Diversity

While a community with a single dominant industry may be relatively more affluent than a community with a number of smaller industries, conventional wisdom tells us that a diversified economic base may be more stable in volatile economic times. The economic dependencies developed in this study were used to examine the economic diversity of each of the local areas by creating a **Diversity Index** (DI). The diversity index ranges from 0 if the area was entirely dependent on one sector, to 100 if it was equally dependent on each of the 12 sectors.

Most Diversified		Least Diversified	
Invermere	79	Stewart	51
Ashcroft	77	Central Coast	52
Dawson Creek	76	Stikine	54
Bute Inlet	75	Quesnel	56
Peachland	75	Hazelton	57
Spallumcheen	75	Vanderhoof	59
Salmon Arm	75	Fernie	59
Revelstoke	75		

When applied to the 63 local areas, the diversity index ranged between 51 and 79, with a median value of 69—i.e., half the areas ranked above, and half below this value—implying that overall BC communities tend to be rather economically diverse.

Forest Sector Vulnerability

Forestry remains an important sector in BC, but a sector that has experienced significant transition over the last two decades, and one that continues to be subject to major fluctuations. Given that forestry remains an economic driver in many BC communities, the vulnerability of these communities—due to reliance on the forest sector—is an important issue. To examine this matter, BC Stats created the **Forest Vulnerability Index (FVI)**, which measures dependence on the forest sector in combination with the extent to which a community possesses a diversified economy. A community will be particularly vulnerable if its economic dependence on the forest sector is high, while its diversity is low. The FVI is normalized to range between 0 and 100, with 100 representing the most dependent area.

High FVI		Low FVI	
Quesnel	100	Victoria	0
Vanderhoof	86	Gulf Islands	2
Burns Lake	73	Kelowna	4
McBride-Valemont	56	Trail-Rossland	4
Port Hardy	51		
Smithers-Houston	50		

Within the province, some of the highest FVI's are found in the north central part of the province—specifically the communities of Quesnel, Vanderhoof, and Burns Lake—and on north Vancouver Island (e.g. Port Hardy). Not surprisingly, the lowest vulnerability to fluctuations in the forest sector is in Victoria and the Gulf Islands. The median FVI was 12, indicating that overall vulnerability to the forest sector is rather low.

Shifting Economic Dependencies

While the preceding information has focussed only on the most recent (i.e., 2006) information, it is also interesting to examine how economic dependencies have changed over time. To facilitate a comparison, mean dependencies were calculated for a consistent set of sectors[3].

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[3] High Technology, Construction and Film Production are included in 'Other Employment Income' to enable comparability across years.

The dependencies generally show stability over time, with the exception of forestry and non-employment income.

Mean Economic Dependencies (%): 1991–2006

Year	2006	2001	1996	1991
Forestry	15	18	21	18
Mining and Oil & gas	5	4	4	6
Fishing and Trapping	1	1	2	1
Agriculture and Food	2	3	3	3
Tourism	6	7	7	5
Public Sector	25	25	24	19
Other Emp. Income	14	12	12	15
Non-Emp. Income	31	30	26	33

Forest Sector

The forest sector has seen a steady and significant decline since 1996, which shouldn't really be a surprise. At the local area level, the most significant decline in forest dependency was seen in Hazelton, where the dependency fell from 39% in 1991 to 18% in 2006. Over the ten year period 1996 and 2006, forest sector dependence declined by 22 percentage points in Central Coast (from 26% to 4%) and Stewart (from 25% to 3%). At the other end of the spectrum, both Vanderhoof and Princeton showed a seven percentage point increase in forest sector dependence over the last 15 years.

Non-Employment Income

On average, dependence on non-employment income (transfer payment and other non-employment income) has increased since 1996. Non-employment income dependence may be significantly affected by downturns in employment income sectors, and also, as a long-term trend, by the aging population in BC – i.e., more retirees equals more pension and investment income streams. As expected, the change in dependence varies significantly across the 63 local areas. Hazelton showed the greatest change, with dependence more than doubling from 13% to 30%. Most of this increase is attributed to an increase in transfer payments.

As well as providing useful descriptive information about the various regions of the province in the form of income dependencies, diversity indices, and forest vulnerability indices, the study also presents employment multipliers that can be used to estimate the local impacts associated with change in the basic industries.

Using the Information

This release of the Community Economic Dependencies report proves quite timely. In the midst of economic upheaval, with governments at all levels seeking to stimulate the economy, the information in the report can prove useful on several fronts: The dependency information makes for a practical, analytically based filter to identify economically susceptible areas in the province to aid in targeting public expenditure; and the multiplier detail aids in assessing the potential impact of proposed or anticipated economic activity.

Detailed economic dependency information for each of the 63 local areas, along with mapped income source and forest vulnerability detail, are presented in the Appendix to this article.

The complete report, entitled *British Columbia Local Area Economic Dependencies: 2006*, is available by accessing the New Releases section of the BC Stats web site at thee following link: http://www.bcstats.gov.bc.ca.

APPENDIX

2006 Income Dependencies (%) — After-Tax Incomes

		Mining & Min Proc	Fish- ing	Agric & Food	Tourism	High Tech	Public Sector	Const	Film Prod	Other	Trans. Pay- ments	Other non-emp inc
	Forest											
VANCOUVER ISLAND/COAST												
1 Gulf Islands	2	0	1	3	7	3	18	10	1	5	17	33
2 Victoria	1	1	0	1	6	4	39	6	0	6	13	23
3 Sooke-Port Renfrew	4	1	1	0	8	2	35	12	0	5	13	19
4 Duncan	14	1	1	2	4	1	27	9	0	4	18	20
5 Lake Cowichan	23	0	0	1	4	0	20	11	0	3	22	15
6 Ladysmith	14	0	1	1	4	0	26	7	0	7	18	22
7 Nanaimo	8	1	1	1	3	1	28	8	0	8	19	21
8 Parksville-Qualicum	5	1	1	1	7	2	17	10	0	5	22	30
9 Alberni	21	0	3	2	9	0	22	5	0	3	18	16
10 Courtenay-Comox	9	2	2	3	6	0	30	7	0	3	18	21
11 Campbell River	23	5	2	2	7	0	21	6	0	3	17	14
12 Bute Inlet	5	0	12	2	10	0	20	7	0	5	16	22
13 Powell River	22	3	2	1	3	0	22	6	0	2	19	19
14 Alert Bay	13	0	9	1	5	4	32	4	0	2	19	11
15 Port Hardy	32	2	7	2	5	1	22	4	0	2	14	9
16 Central Coast	4	0	8	1	7	0	50	3	0	2	16	8
MAINLAND/SOUTHWEST (Excluding GVRD)												
17 Hope-Fraser Canyon	7	2	0	2	7	0	30	6	0	6	22	18
18 Chilliwack	5	1	0	6	3	1	28	11	0	9	18	16
19 Kent-Harrison	5	0	1	7	9	0	26	9	0	6	21	17
20 Matsqui-Abbottsford	6	1	0	11	1	1	25	11	0	13	17	13
21 Pitt Meadows-Maple Ridge	6	2	0	3	2	3	29	11	1	18	13	12
22 Mission	9	2	0	4	2	1	28	14	1	14	16	10
23 Sunshine Coast	14	2	1	1	3	2	20	10	1	4	18	22
24 Squamish	5	1	0	1	27	2	20	15	1	6	8	14
25 Lillooet	21	3	0	2	7	0	27	7	0	4	15	14
THOMPSON-OKANAGAN												
26 Princeton	26	5	0	2	3	0	17	6	0	4	22	15
27 Oliver-Osoyoos	4	2	0	10	6	0	16	7	0	5	27	24
28 Penticton	5	2	0	3	6	0	24	9	0	7	22	22
29 Ashcroft	11	10	0	8	6	0	23	7	0	6	18	12
30 Merritt	23	7	0	3	6	0	22	9	0	1	18	12
31 Kamloops	9	6	0	1	6	1	27	8	0	9	16	16
32 North Thompson	30	2	0	3	7	0	16	6	0	2	20	13
33 Peachland	5	3	0	3	5	2	19	14	0	9	18	21
34 Kelowna	4	2	0	3	7	2	23	12	0	9	17	20
35 Vernon	9	2	0	2	5	1	22	10	0	9	20	20
36 Spallumcheen	11	2	0	7	3	0	18	11	0	9	21	18
37 Salmon Arm	11	3	0	2	4	1	18	11	0	8	20	20
38 Golden	26	2	0	1	14	0	16	12	0	7	14	9
39 Revelstoke	18	2	0	1	9	0	21	9	0	14	14	12

2006 Income Dependencies (%) — After-Tax Incomes, Cont.

	Forest	Mining & Min Proc	Fish-ing	Agric. & Food	Tourism	High Tech	Public Sector	Const	Film Prod	Other	Trans. Pay-ments	Other non-emp inc
KOOTENAY												
40 Fernie	6	44	0	0	8	0	13	6	0	2	11	9
41 Cranbrook-Kimberley	12	6	0	1	7	0	26	9	0	7	17	16
42 Invermere	13	12	0	2	16	0	16	13	0	3	11	13
43 Castlegar-Arrow Lakes	23	4	0	1	5	1	22	9	0	4	17	14
44 Nelson	9	2	0	1	7	4	28	10	0	5	18	17
45 Creston	8	5	0	7	4	0	19	6	0	1	26	24
46 Grand Forks-Greenwood	23	2	0	4	3	0	17	7	0	4	24	18
47 Trail-Rossland	4	19	0	0	4	1	24	6	0	6	17	18
CARIBOO												
48 Williams Lake	27	5	0	2	4	0	22	7	0	3	16	12
49 Quesnel	45	2	0	2	3	0	18	4	0	2	15	10
50 Prince George	28	2	0	1	4	1	28	7	0	7	12	10
51 McBride-Valemount	33	0	0	1	11	0	21	5	0	3	16	11
NORTH COAST												
52 Queen Charlotte Island	14	0	7	1	11	1	31	4	0	2	18	12
53 Prince Rupert	5	1	16	1	8	0	32	3	0	8	18	9
54 Kitimat-Terrace	14	22	1	0	4	0	26	5	0	3	14	10
55 Hazelton	18	3	1	1	2	0	40	2	0	2	25	5
56 Stewart	3	8	4	0	7	0	52	7	0	3	12	3
NECHAKO												
57 Smithers-Houston	31	9	0	2	5	0	23	5	0	2	13	9
58 Burns Lake	37	3	0	3	3	0	26	3	0	2	14	9
59 Vanderhoof	42	8	0	3	3	0	20	3	0	1	12	7
60 Stikine	4	11	1	0	7	1	48	15	0	4	6	2
NORTHEAST												
61 Dawson Creek	12	20	0	3	5	0	21	10	0	8	12	8
62 Fort St. John	6	37	0	3	5	0	14	11	0	8	8	7
63 Fort Nelson	27	23	0	0	8	0	17	4	0	11	5	4

Dominant Basic Income Sources

Prepared by BC STATS
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Forest Sector Vulnerability

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