



**THE ECONOMIC IMPACT
OF DOWNHILL SKIING
AT ALBERTA'S
ROCKY MOUNTAIN SKI RESORTS**

February 2000

**Presented to:
Alberta Economic Development**

Executive Summary

Parks Canada is in the process of imposing guidelines for ski area development and operations in the National Parks. Alberta Economic Development is interested in understanding the economic contribution that Alberta's Rocky Mountain ski resorts provide to the provincial and national economy. PricewaterhouseCoopers LLP and Econometric Research Ltd. were retained to estimate the economic benefits associated with downhill skiing at Alberta's Rocky Mountain Ski Resorts.

Data for the ski hill operations inputs were supplied by the Alberta Rocky Mountain Ski Resorts. Data for the off-site visitor expenditure inputs were gathered from reliable sources such as Alberta Economic Development, Ski Banff/Lake Louise, Alberta's Rocky Mountain Ski Resorts, Statistics Canada, Tourism Whistler and the Calgary Convention and Visitors Bureau.

The Economic Impact of Downhill Skiing at Alberta's Rocky Mountain Ski Resorts in Alberta's National Parks on Alberta

- Initial expenditures of **\$329 million** associated with off-site visitor spending and ski hill operations in National Parks, resulted in a **province-wide economic impact (value added) of \$351 million in 1999.**
- Approximately **9,200 person years of employment were sustained province-wide** attributable to the total impact of downhill skiing in the National Parks.
- **Over \$133 million (1999) in taxation revenues** accrued to all three levels of government combined. The Federal share accounted for \$71 million. The Provincial share was \$44 million. The local government share was \$18 million.
- **Imports, or leakages, in 1999 amounted to \$92 million.** Imports from other provinces totalled \$56 million and from other countries \$35 million.

The Economic Impact of Downhill Skiing at Alberta's Rocky Mountain Ski Resorts on Alberta

- Initial **expenditures of \$372 million** associated with off-site visitor spending and ski hill operations at Alberta Rocky Mountain Ski Resorts generated a **province-wide economic impact (value added) of \$399 million in 1999**.
- Approximately **10,400 person years of employment province-wide in 1999** were sustained by expenditures of skiing at Alberta Rocky Mountain Ski Resorts.
- A total of **\$152 million was the 1999 taxation impact** to all three levels of government from the impacts of skiing at Alberta's Rocky Mountain Ski Resorts. The lions share of this total accrued to the Federal government with \$81 million. The Provincial government realized \$51 million. The local share was \$20 million.
- **Alberta-wide imports in 1999 totalled \$104 million**, with \$64 million coming from other provinces and \$40 million from other countries.

The Economic Impact of Downhill Skiing at Alberta's Rocky Mountain Ski Resorts on Canada

- Initial **expenditures of \$372 million** associated with off-site visitor spending and ski hill operations at Alberta Rocky Mountain Ski Resorts generated a **Canada-wide economic impact (value added) of \$468 million in 1999**.
- Approximately **12,300 person years of employment Canada-wide** were sustained by the expenditures of skiing at Alberta Rocky Mountain Ski Resorts.
- A total of **\$178 million was the 1999 taxation impact** to all three levels of government from the impacts of skiing at Alberta's Rocky Mountain Ski Resorts. The largest share of this total accrued to the Federal government with \$94 million, and the Provinces realizing a combined \$59 million. The local government share was \$24 million.

- **Imports in 1999 totalled \$47 million Canada-wide**, with this amount coming from other countries.

1. Introduction

We understand that Parks Canada's policy relating to the Alberta National Parks is currently under review. Parks Canada is in the process of imposing guidelines for ski area development and operations in the National Parks. Alberta Economic Development is interested in understanding the economic contribution that Alberta's Rocky Mountain ski resorts, located both inside and outside the National Parks, provide to the provincial and national economy.

Consequently, PricewaterhouseCoopers LLP and Econometric Research Limited were retained in January 2000 by Alberta Economic Development to estimate and summarize the economic benefits associated with downhill skiing at Alberta's Rocky Mountain Ski Resorts in 1999. The resorts included in our evaluations are:

- Ski Resorts in National Parks
 - Lake Louise Ski Area;
 - Sunshine Village Ski Area;
 - Marmot Basin; and,
 - Mount Norquay.

- Ski Resorts Not in National Parks
 - Fortress Mountain; and
 - Nakiska.

Following this brief introduction is a discussion of the downhill skiing industry in Alberta. Section 3 outlines our methodology, including a discussion of the role of economic impact analyses, our approach, key assumptions and study limitations. A summary of the economic impacts (i.e., benefits) of downhill skiing at Alberta's Rocky Mountain Ski Resorts can be found in Section 4. This includes the economic impacts from: downhill skiing at Alberta's Rocky Mountain Ski Resorts in Alberta's National Parks on Alberta; downhill skiing at Alberta's Rocky Mountain Ski Resorts on Alberta; and, downhill skiing at Alberta's Rocky Mountain Ski Resorts on Canada.



The final section of the report presents our conclusions. Information and data used as inputs, as well as detailed economic impact tables are presented in appendices.

2. The Downhill Ski Industry in Alberta

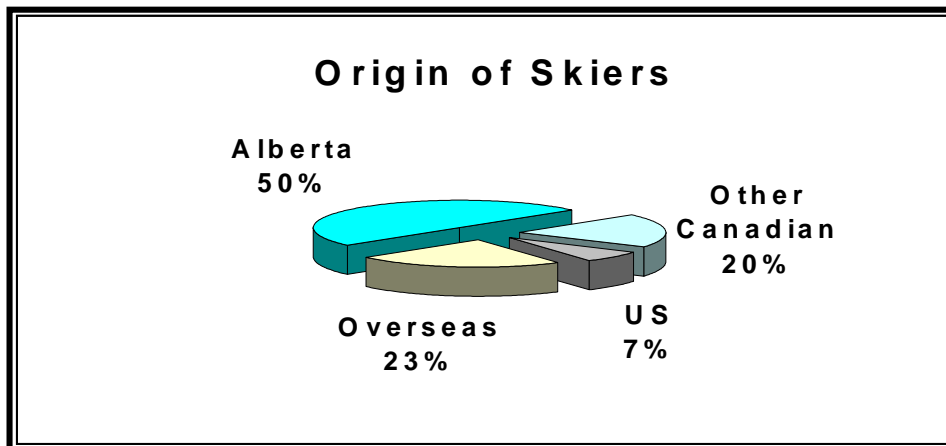
The Rocky Mountains provide Alberta with a significant natural advantage in the ski industry, an advantage that provides an economic benefit for the province and for the nation. The Rockies and their attractions, including ski resorts, have gained world-wide recognition for their beauty, high quality ski environment and numerous recreational opportunities. People from all over the world ski and stay in the Rocky Mountains, providing economic benefits to businesses, communities, as well as employment opportunities.

Resident and Non-Resident Skiers

The Rocky Mountain resorts attract both Albertans and non-Albertan skiers. Resident skiers are defined as those skiers who reside in Alberta. Non-resident skiers are skiers who do not reside in Alberta but in other parts of Canada, the United States or overseas.

Information from Ski Banff/Lake Louise, the four National Park ski areas and other Alberta ski resorts suggests that half the skiers at Alberta Rocky Mountain resorts are resident Albertans, while the remaining half are divided amongst other Canadians, Americans and overseas visitors. **Approximately 1.66 million skiers visited the Alberta Rocky Mountain Ski Resorts during the 1998/99 season.** Their origins can be broken down according to the following chart.

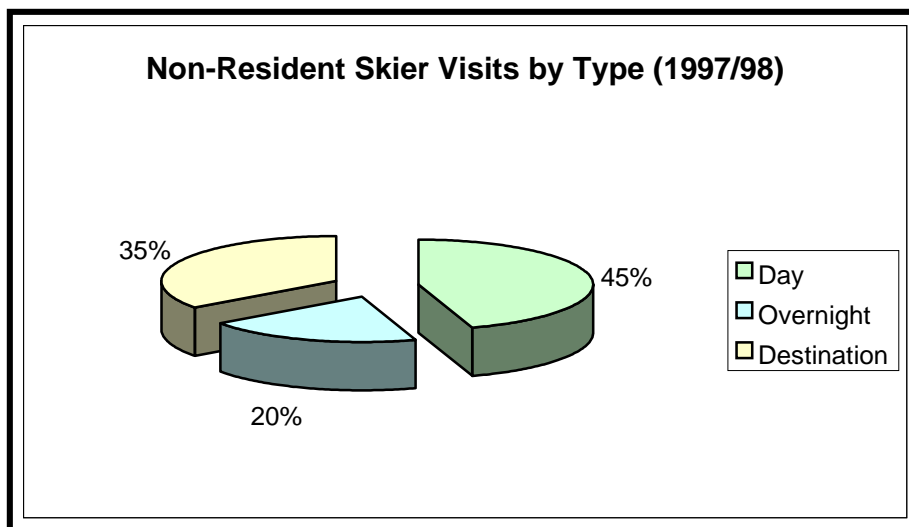
SOURCE: Ski Banff/Lake Louise and Alberta ski resorts



Alberta's Rocky Mountain ski resorts have defined three types of skier visits, based on length of stay:

- Day skiing;
- Overnight skiing (i.e., stay 1 – 2 nights); and,
- Destination skiing (i.e., stay 3 or more nights).

An increase in the proportion of Destination skier visits (staying 3 or more nights) to the Alberta ski resorts has occurred during the 1990s. According to Ski Banff/Lake Louise and other ski resorts in Alberta, Destination visits were approximately 35% of the skier visits to the mountains in 1997/98, up from 21% in 1990/91.

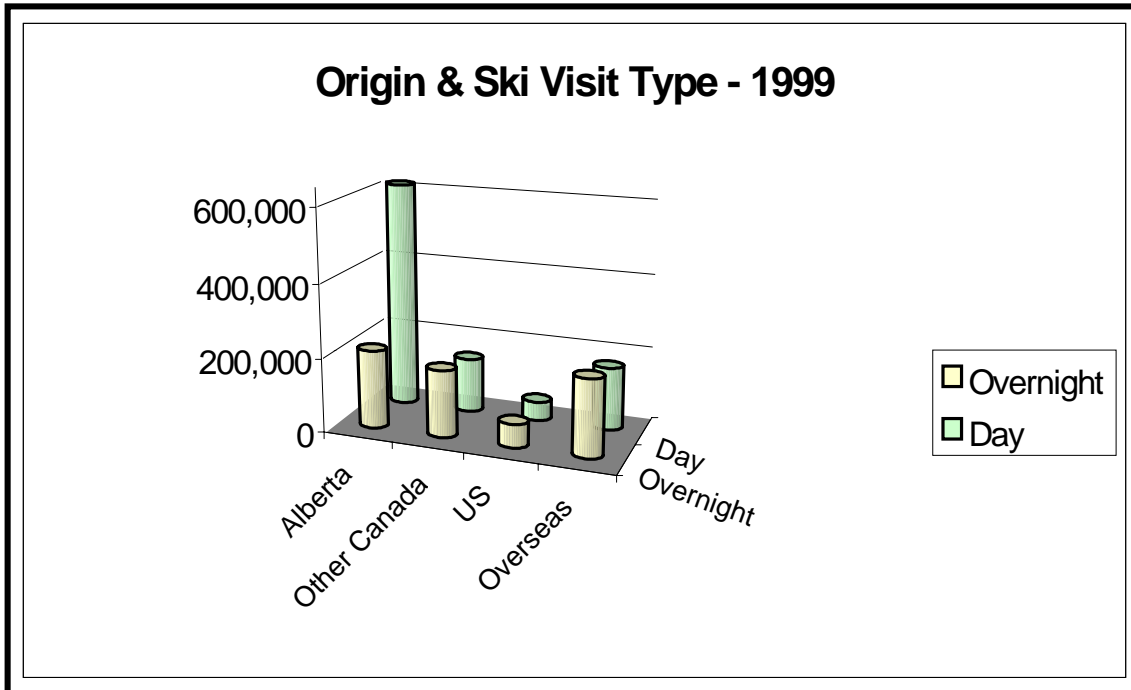


SOURCE: Ski Banff/Lake Louise

The economic benefits resulting from these different types of skiers will vary. For simplification purposes of our analysis, we have combined the overnight and destination skiers.

The breakdown by origin and visit type of the approximately **1.66 million skiers** who visited the Alberta Rocky Mountain ski resorts during the 1998/99 season, is detailed on the following chart.

SOURCE: Alberta Rocky Mountain ski resorts and Ski Banff/Lake Louise



Expenditures

The 1999 Rocky Mountain Visitor Survey measures the origin, length of stay, expenditure and other travel behaviours of visitors to the Rocky Mountain Parks. This Survey found that the average daily per person expenditure patterns differed depending upon the origin of the visitor and on their length of stay.

Skiers from the US typically had the highest average daily expenditure. This information was supported by visitor information collected and tracked by Tourism Whistler. The largest daily expenditures were in the overnight skier category, which are highlighted in the table below.

Average Daily Overnight Skier Per Person Expenditure in Alberta

Expenditure Type	Alberta and Other Canadian	US	Overseas
Accommodation	\$30.27	\$71.74	\$57.86
Food and Beverage	\$12.20	\$22.00	\$19.68
Retail	\$5.37	\$19.60	\$25.86
Entertainment	\$6.90	\$15.13	\$16.41
Public/Local Transportation	\$0.25	\$9.35	\$12.23
Private Car/Car Rental	\$11.40	\$13.57	\$12.45
Total Daily Expenditure	\$66.39	\$151.39	\$144.49

SOURCE: Alberta Rocky Mountain Visitor Survey 1999 and Tourism Whistler

The average non-resident destination skier stayed an average of 3.97 nights in Alberta and spent upwards of \$151 per day. They provide a substantial economic benefit in terms of value-added, employment and taxes to the various levels of government. Non-resident destination skiers provide a larger economic impact, staying longer periods of time and spending more money each day.

Although Alberta skiers comprise 50% of the total number of skiers, **over 77% of the expenditures attributed to downhill skiing in Alberta’s Rocky Mountain Resorts are from non-residents.** Therefore, 50% of the skiers contribute over 77% of the expenditures. This indicates that the economic impact of non-residents is significant.

A detailed calculation of the total expenditures for each of the categories (i.e., the average daily expenditure multiplied by the number of skiers and the average length of stay) is provided in Appendix A.

Downhill Ski Industry Trends

A major trend in the ski industry is consolidation of resorts. The number of ski resorts in North America has declined over the last 10 years, suggesting a need to be more competitive in capturing market share. Larger mountain operators such as Intrawest have purchased numerous ski operations in North America and pose a significant competitive challenge to smaller mountain operators.

Some of the major Canadian ski resorts, such as Whistler and Tremblant, have undertaken significant upgrades and development to create world class resorts that are on the cutting edge of the competitive ski resort industry. They have added new lifts, accommodations and town centres to satisfy the demands of skiers. These mountains have had the ability to expand and pursue aggressive development strategies. Alberta Rocky Mountain ski resorts have been hindered in their ability to develop and expand by restrictive government policies on Federal and Provincial Crown lands, thereby limiting their potential in this increasingly competitive marketplace.

3. Economic Impact Methodology

The concept of economic impact analysis is quite simple. When a dollar is spent in an economy, it re-circulates within the economy, multiplying the effects of the initial expenditure. However, as the dollar re-circulates through the local economy, certain expenditures must be made outside the local economy or on goods and services produced outside the region. In this sense, certain percentages of the dollar are lost to “leakage” in the purchase of outside goods and services not available locally. Therefore, a dollar spent in a local economy has the potential to multiply not only in its own economy, but in provincial and the national economies as well.

The important roles of an economic impact analysis are to determine where the value added impacts come from (i.e., local or non-local expenditure) and to determine where these economic benefits flow to (i.e., a region, province or nation).

The econometric models used for this study provide a measure of the benefits from two perspectives:

- The major indicators of economic impact, including value added (GDP), employment and taxes; and,
- The geographical allocation of the impacts to Alberta, other parts of Canada and Canada as a whole.

Economic benefits can be categorized into three main elements:

- **Direct effects** are the initial purchases of goods and services, for the operations of the ski resorts and off-site visitor expenditures.
- **Indirect effects** are the subsequent purchases made by suppliers to sustain the direct expenditures.
- **Induced effects** emerge when workers in the sectors stimulated by initial and indirect expenditures spend their additional incomes on goods and services.

Some of the key terms and definitions to assist in interpreting the results of an economic impact analysis are provided below:

- **Initial Expenditure** - This figure indicates the amount of initial expenditures (off-site visitor expenditure and operating of the ski resorts) used for the analysis. It indicates not only the total magnitude of this spending, but also the region in which it was spent.
- **Value Added (Gross Domestic Product)** - This figure represents the total value of the production of goods and services in the economy resulting from the initial expenditures under analysis (valued at market prices).
- **Employment** - This figure represents the total employment (full time equivalent jobs) generated by the initial expenditure, measured in person years.
- **Taxes** - This model includes a number of taxes, each of which is linked directly with the level of government receiving it. For example, only the Federal government receives GST on goods and services, whereas business and property taxes are received solely by local governments. Payroll tax from employment is received at the provincial and federal levels.
- **Imports** – These are imports from outside the economic region (province, country etc.) that are required to sustain the economic activity. They essentially represent the “leakage” from the region.
- **Multipliers** - This is a measure derived by adding direct, indirect and induced effects and dividing the total thus derived by the original expenditure. For example, the income multiplier is calculated by dividing total income by the original expenditure. The only exception is that of the employment multiplier where total employment is divided by direct employment.

Approach

For the purposes of this analysis the following steps were undertaken:

- Collection of 1998/99 financial statements from each of the six ski areas under study in this analysis;

- Estimation and calculation of off-site visitor spending that occurs as a result of the ski resort operations (See Appendix A for detailed worksheets); and,
- Economic modelling undertaken by Econometric Research Ltd.

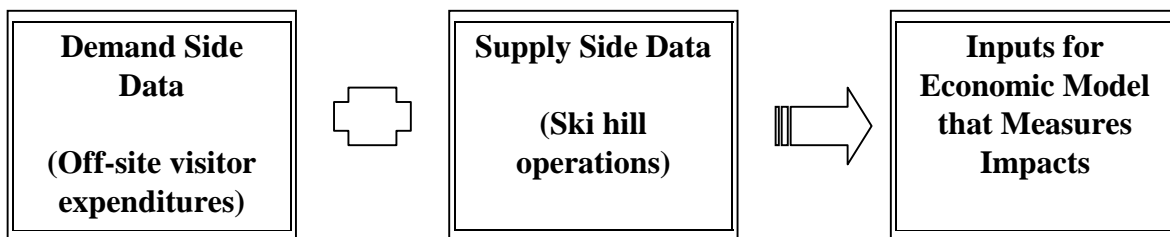
Econometric Research Ltd. has developed several provincial economic impact models, as well as a Canadian impact model. The model they developed for Alberta is used extensively by various departments of the Alberta Government. The impact models used for the purposes of this study represent special applications of generic models developed by Econometric Research Limited. They are unique models that capture the economic impacts of operations and expenditures at the local level (counties or economic regions), the provincial level, and the national level.

The Economic Models

The data were compiled using the DEIM (Demand Economic Impact Model) and the TEIM (Tourism Economic Impact Model). DEIM is a sophisticated demand model that integrates input-output analysis and location theory methodology to assess the impact of off-site visitor expenditures that occur from the ski hill operations on the regional, provincial and Canadian economy. TEIM is a supply related input/output model that was used to assess the impacts from the ski hill operations.

Demand side analysis, or off-site visitor expenditure impacts, measures consumer preferences and provides an indication of the “categories” (i.e., accommodation, food and beverage or retail) that skiers spend the majority of their dollars on when making a ski trip. This information can be extremely useful in providing better service through an understanding of expenditure patterns.

The supply side analysis, or ski hill operations impacts, measures the expenditures of skiers on the hill, and those costs incurred by the hill operations to keep the resorts running. The important concept in the supply side analysis is the extent to which the operations support a local economy. The relationship between the supply-side and the demand-side can be seen below:



Key Assumptions

The results presented herein are our estimates of the economic impact based on the data and research from the best sources available at this time. There are a number of key assumptions that apply to the entire economic impact analysis for the downhill ski industry in Alberta. These are:

- The **total** economic impacts of downhill skiing for Alberta Rocky Mountain ski resorts reflect both the resident and non-resident skiers; and,
- All dollar values represent 1999 year values.

The remaining inputs and assumptions can be broken down into two categories: supply side and demand side.

Supply Side Data Inputs and Assumptions

The supply side data was provided by each of the Alberta Rocky Mountain ski resorts for their 1998/99 ski season. Financial records for the resorts and their operations were analyzed and each revenue and expenditure item was input into the economic model in accordance with the model structure.

Demand Side Inputs and Assumptions

The demand side data was provided by a number of sources. Data with respect to the number of skier visits to Alberta Rocky Mountain ski resorts was provided by each of the resorts for their 1998/99 season. Statistics with respect to type of ski visit (i.e., day and overnight visits) and origin of skiers (i.e., Albertan, Other Canadian and International) was provided both by the ski resorts and Ski Banff/Lake Louise.

Off-site visitor expenditures were provided by Alberta Economic Development from The 1999 Rocky Mountain Visitor Survey. This information was validated by data from Tourism Whistler. Brewster Transportation and Tours provided the data for the Canada Parks fee. Data with respect to accommodation type (i.e., staying with friends and relatives versus commercial accommodation) was provided by the Statistics Canada Canadian Travel Survey, a survey of Canadian travel behaviours, and the Calgary Convention and Visitors Bureau, which tabulates data on visitors to Calgary and the region.

Several assumptions were made with respect to the demand side inputs:

- Off-site visitor expenditures do not include expenditures on air transportation, ski equipment or ski accessory purchases.
- Off-site food and beverage purchase does not include lunch on the mountain. Such expenditures are included in the financial statements of the ski hills and are captured in the supply side inputs.
- The park fee of \$3.00 per person is expected to be collected once per visit. Expenditures for non-park skiers do not include the park fee.
- The day skier does not spend any money on entertainment or local transportation.
- Non-resident day skiers are skiers who have come to Alberta but their primary purpose for the visit is other than skiing. For example, people travelling for business, conferences or visiting friends and relatives may spend one day skiing and will therefore have additional accommodation and daily expenditures to accommodate their ski trip.
- Based on information supplied by Statistics Canada and the Calgary Convention and Visitors Bureau, we have assumed that 55.3% of Canadian day skiers, 15.3% of US and 22.4% of International day skiers stay with friends and relatives. Accommodation expenditures for non-resident day skiers have been adjusted accordingly from the overnight skier accommodation expenditure.

- Albertan Day skiers do not spend any money on accommodation and only 30% will purchase food and beverage off the hill.

Study Limitations

The data used in the analyses were gathered from sources such as Alberta Rocky Mountain Ski Resorts, Ski Banff/Lake Louise and Alberta Economic Development, which are deemed reliable for the purposes of this study.

It should be stressed that the results of an economic impact analysis are estimates based on an accounting framework that represents average parameter values of the underlying behavioural, structural and technical relationships of the economy. Thus, in evaluating these estimates, there should be some allowance for a margin of error to the extent that actual observations deviate from actual values.

Some additional limitations include:

- The respective resort operators provided financial information for the ski hills. This information was forwarded to Econometric Research Ltd. for the model inputs. Direct confirmation of financial records was not possible.
- PwC does not take responsibility for errors or omissions to the input data that could not have been reasonably determined within the scope of the assignment.
- The impact results are generated using an input/output model that utilizes a number of assumptions relating to the model itself and to the data that makes it operational.

II 4. Summary of Economic Benefits of the Downhill Ski Resorts in Alberta Rocky Mountains

This section provides the estimates for the economic impacts accruing to Alberta and Canada and the resulting multipliers. Tables indicating the results of the impact analysis can be found in Appendix B. Key highlights from the analysis are summarized below.

The Economic Impact of Downhill Skiing at Alberta's Rocky Mountain Ski Resorts in Alberta's National Parks on Alberta

The total estimated impacts of the downhill ski industry in Alberta's National Parks include the impacts generated from both the demand and supply sides; the off-site visitor spending and the operations of the resorts themselves. Appendix B provides a detailed breakdown of the contributions of the off-site visitor spending and the ski hill operations to the total economic impact figures presented below. The total impact results also represent both resident and non-resident skiers.

- Initial **expenditures of \$329 million** associated with off-site visitor spending and ski hill operations in National Parks, resulted in a **province-wide economic impact (value added) of \$351 million in 1999**.
- Approximately **9,200 person years of employment were sustained province-wide** attributable to the total impact of downhill skiing in the National Parks.
- **Over \$133 million (1999) in taxation revenues** accrued to all three levels of government combined. The Federal share accounted for \$71 million. The Provincial share was \$44 million. The local government share was \$18 million.
- **Imports, or leakages, in 1999 amounted to \$92 million.** Imports from other provinces totalled \$56 million and from other countries \$35 million.

The Economic Impact of Downhill Skiing at Alberta's Rocky Mountain Ski Resorts on Alberta

The impacts below are the province-wide impacts for ski resorts in both the National Parks and those resorts outside the National Parks. They represent both the off-site visitor spending and ski hill operations. Appendix B provides a breakdown of the relative contributions of each to the total impact. Additionally, the results include both resident and non-resident skiers. The impacts to the province include:

- Initial **expenditures of \$372 million** associated with off-site visitor spending and ski hill operations at Alberta Rocky Mountain Ski Resorts generated a **province-wide economic impact (value added) of \$399 million in 1999**.
- Approximately **10,400 person years of employment province-wide in 1999** were sustained by expenditures of skiing at Alberta Rocky Mountain Ski Resorts.
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- **Alberta-wide imports in 1999 totalled \$104 million**, with \$64 million coming from other provinces and \$40 million from other countries.

The Economic Impact of Downhill Skiing at Alberta's Rocky Mountain Ski Resorts on Canada

The impacts presented below are the total Canada-wide impacts for resorts both in and out of the National Parks. They represent both the off-site visitor spending and ski hill operations. Appendix B provides a breakdown of the relative contributions of each to the total impact. Additionally, the results include both resident and non-resident skiers.

- Initial **expenditures of \$372 million** associated with off-site visitor spending and ski hill operations at Alberta Rocky Mountain Ski Resorts generated a **Canada-wide economic impact (value added) of \$468 million in 1999**.
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- **Imports in 1999 totalled \$47 million Canada-wide**, with this amount coming from other countries.

III 5. Conclusions

The Rocky Mountains provide Alberta with a world class destination/attraction which serves as the basis for Alberta's tourism industry which brings in \$ 4.1 billion of expenditures annually. The Alberta ski industry constitutes a significant component of the province's tourism industry; indeed, in the winter season from December through May downhill skiing forms the backbone of this industry. Of the approximately \$954 million spent in Alberta's Rocky Mountain Parks year round in 1999, \$329 million is directly attributable to downhill skiing. Alberta has gained world-wide recognition as a result of the natural beauty of the Rocky Mountains and the quality of the ski experience offered.

However, the downhill ski industry is changing: - the growth of the industry has slowed and it is becoming increasingly competitive. These trends place significant pressure on existing resorts to provide the best facilities, amenities and operations in order to remain competitive. Direct competitor resorts in BC and Montana are able to provide on hill accommodation and development amenities that are not possible within the National Parks environment.

As can be seen from the analysis of economic impacts presented in this report, the downhill ski industry is extremely important to the Alberta economy, providing significant economic benefits, jobs and tax revenue. The existence of a healthy downhill ski industry in Alberta also generates strong Canada-wide benefits and significant tax revenues for the federal government. The continued vitality and growth of the industry is vital to the regional and provincial economies and to the enhancement of Canada's reputation with international visitors.

Yours very truly,
PricewaterhouseCoopers

David E. Smith, CMC