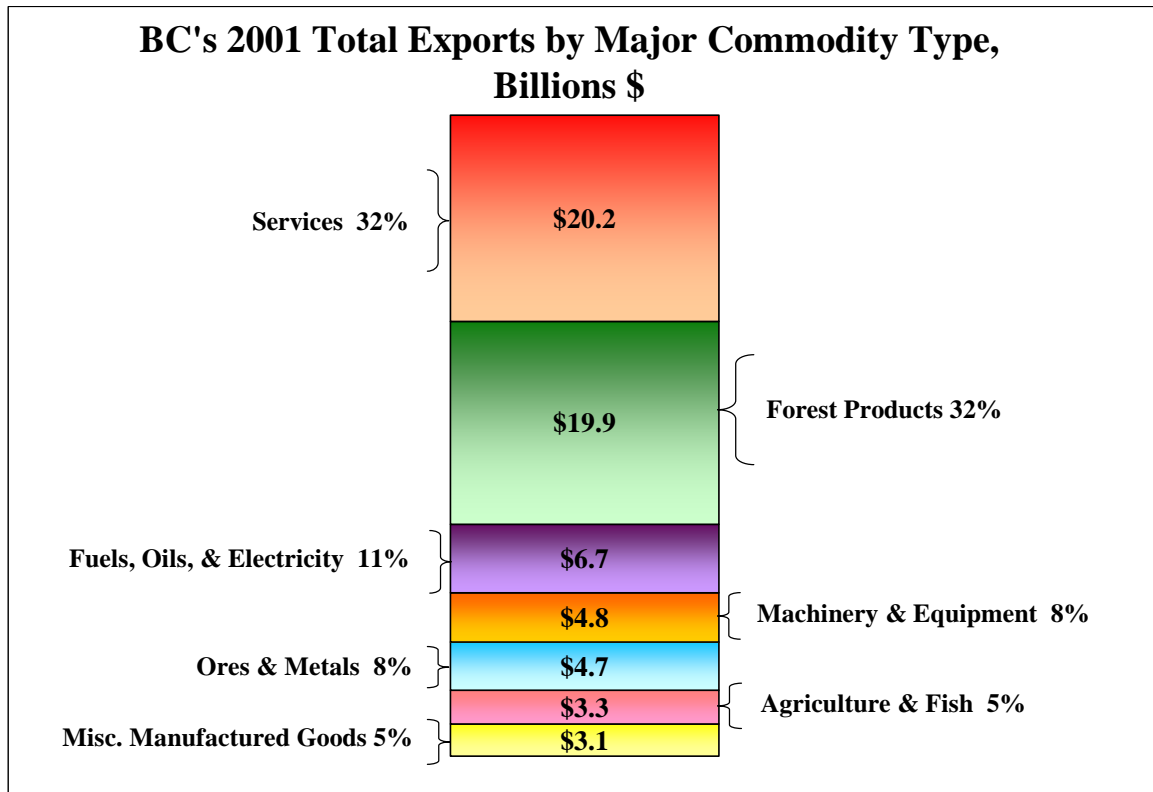


Regions & Resources: The Foundations of British Columbia's Economic Base

by
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Strategic Research to Manage Change

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Notice to Readers:

While the findings of this research are generally consistent with those of the Urban Futures Institute's previous report on BC's economic base, **Resource Dependency: The Spatial Origins of British Columbia's Economic Base**, published in 2002, changes in data and methodology mean that specific elements of the two reports cannot be directly compared.

The two reports differ in the following areas:

1. This report uses employment data by industry and occupation from the 2001 Census, which are tabulated using the North American Industry Classification System (NAICS), while the data used in the previous report used employment data from the 1996 Census which were tabulated using Standard Industrial Classifications (SIC).
2. This report uses export data for the 1999 to 2003 period, with particular focus on 2001, while the previous report focused on averages for the 1991 to 2000 period. The more recent export data are tabulated using the NAICS, while the export data used in the previous report were tabulated using SIC.
3. This report explicitly considers estimates of inter-provincial exports, which were discussed, but not included in the empirical measures in the previous report.
4. The Fraser Valley Regional District (FVRD) – with 6 percent of the province's population – has been included in the Lower Mainland metropolitan region, whereas it was previously classified as non-metropolitan.

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Regions & Resources: The Foundations of British Columbia's Economic Base

Executive Summary

Context

Paul Martin promises a 'new deal for cities', the big city mayors demand more money and a greater degree of independence, and the Canadian Cities campaign declares that cities are "the economic engines of our nation".

It is clear that a case is being made for cities', and particularly for big, metropolitan cities', singular importance in Canada's economy. To some extent, albeit in a more limited sense than the big city mayors would like, there is validity to a case for cities as economic engines: there is not, however, validity to the case that they are "the" economic engines.

The reality is that "the" dominant engines of British Columbia's economy are its natural resources, and hence resource regions, of the province. While urban, and specifically metropolitan, economic activities are important contributors to the province's economic base - they account for approximately one-third of this base - two-thirds of provincial export income is earned by the forestry, mining, fishing, energy and agricultural sectors, sectors which are predominantly non-metropolitan.

The focus of this report is not Gross Domestic Product, for, as a measure, it is concerned with how money is spent by residents living in the province. Rather, the focus is on the *origins* of the money that is spent in the province by its residents; in this context - that of the export, or economic, base - the analysis rests on the foundation of considering the province as a single community (or economy). The analysis presented in this report clearly shows that the province's resource, and hence non-metropolitan, regions contribute more, both absolutely and proportionately, than its metropolitan regions, to international and inter-provincial exports; what it does not show is the trade between regions within the province. At this more detailed level, it is important to note that the metropolitan regions play a significant role in exporting goods and services to other regions of the province (as well as importing from them). Having said this, the fundamental importance of this intra-provincial trade flow is that the revenue that the metropolitan regions earn from selling exports to the resource regions is dependent on the resource incomes earned by these regions.

The ultimate finding of this research is the following: British Columbia, as the sum of its metropolitan and non-metropolitan regions, is primarily, but not exclusively, dependent upon natural resource industries as its engines of growth. Metropolitan regions do play an important role in the province's economic base (particularly with respect to the export of services), as such they are engines of economic growth, but they are neither "the" engines, nor the predominant ones. Resources play the dominant role in earning the

money that ultimately pays for health care, education, and social services, as well as for lattes, tofu, and chocolate.

In this report, the province is divided into ten economic regions in order to estimate the contribution of each of these regions to the province's economic base. The goal of this approach is to identify the spatial nature of the province's economy, not to suggest that one region is more important, or more deserving, than another. The findings of this research clearly show that all of us in British Columbia are resource dependent, and that the way in which we sustain the economy, and the communities, of our resource regions will affect all of our futures. As they say in Alert Bay: *wi'lu'moa* (we will all travel together).

Principal findings

1. The 2001 Census confirms that the population of British Columbia is predominantly metropolitan, with 2,224,515 people (57 percent of BC's population) living in the Lower Mainland (the Greater Vancouver and Fraser Valley Regional Districts) and 325,754 (8 percent) in the Capital Regional District (Victoria and surrounding area), and that the metropolitan population is increasing faster than that of the rest of the province.
2. On an aggregate level, service exports and forest product exports are tied as the dominant sources of export revenue for the province, with an estimated \$20.2 billion in services and \$19.9 billion in forest products exported in 2001 (each accounted for a 32 percent share of the total dollar value of exports). Exports of fuels and electricity (\$6.7 billion, 11 percent), machinery and equipment (\$4.8 billion, 8 percent), and ores and metals (\$4.7 billion, 8 percent) together accounted for over one-quarter of the value of the province's total exports, while agricultural goods and miscellaneous manufactured products each generated 5 percent of 2001's total export income (\$3.3 billion and \$3.1 billion, respectively).
3. While metropolitan regions dominate the province's demography, they do not dominate its economic base, as they account for two-thirds of BC's population but only one-third of its total exports (by value). In 2001, out of the provincial total of \$43.4 billion in **international exports**, \$28.5 billion (66 percent) originated in non-metropolitan regions, while \$14.9 billion (34 percent) originated in metropolitan regions. Of international exports of **services** of \$9.1 billion, \$6.2 billion (68 percent) originated in metropolitan regions and \$2.9 billion (32 percent) originated in non-metropolitan areas. Of an international export total of \$34.3 billion of **goods**, \$25.6 billion (75 percent) originated in non-metropolitan areas, while \$8.7 billion (25 percent) originated in metropolitan regions.

The regional distribution of the origins of **inter-provincial exports**, which amounted to \$19.3 billion in 2001, differed significantly from the pattern displayed by international exports, as \$9.7 billion (50 percent) originated in metropolitan areas and \$9.6 billion (50 percent) originated in non-metropolitan areas. Of inter-provincial exports of **services** of \$11.1 billion, \$7.6 billion (68 percent) originated in metropolitan regions and \$3.5 billion

(32 percent) originated in non-metropolitan regions. Of inter-provincial exports of **goods** of \$8.2 billion, \$6.1 billion (75 percent) originated in non-metropolitan areas and \$2.1 billion (25 percent) originated in metropolitan areas.

Overall, out of the provincial total of \$62.7 billion in **total exports** (international and inter-provincial) in 2001, \$38.1 billion (61 percent) originated in non-metropolitan areas and \$24.6 billion (39 percent) originated in metropolitan areas. Exports of **services** totaled \$20.2 billion, with \$13.8 billion (68 percent) originating in metropolitan areas and \$6.4 billion (32 percent) originating in non-metropolitan areas. Exports of **goods** of totaled \$42.5 billion, with \$31.7 billion (75 percent) originating in non-metropolitan regions and \$10.8 billion (25 percent) originating in metropolitan regions. Furthermore, when the value of exports generated from rural and resource activities (such as fishing and farming) that are located *within* metropolitan regions are added to the total exports emanating from non-metropolitan regions, the metropolitan economies account for only a one-third share of the province's economic base.

4. The non-metropolitan regions of BC contribute \$28,070 per capita in export income from sales to other parts of Canada and the rest of the world, while the metropolitan regions have exports of only \$9,646 per person to these "third party" regions. These gaps in per capita earnings are compensated for in a) transfers of royalty and other resource based revenue to metropolitan regions, b) value added in the processing and administration segments of resources industries, and c) sales of goods and services by the metropolitan regions to the non-metropolitan ones. The resource dependency of the metropolitan regions is clearly evidenced by this per capita gap.

Conclusion

It is hoped that from this, and other related research, a better understanding of the extent to which metropolitan economies in the province are linked to non-metropolitan economies, and the extent to which all economies in the province are natural resource dependent, will be developed. Only through acknowledgement of the degree to which regions in the province are inter-dependent can British Columbians articulate strategies that will be effective in responding to economic change that directly, and indirectly, affects them. It is imperative that Lower Mainland and Victoria residents understand that 60 percent of the money that pays for their large double-double or soy decaf frappuccino comes from the export of natural resources can meaningful discussion of economic policy take place in British Columbia.

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Regions & Resources: The Foundations of British Columbia's Economic Base

I. INTRODUCTION

Where does the money come from that feeds us, clothes us, and pays for our health care, our holidays, and our fire departments? Rarely is this question raised in British Columbia, and when it is, it is usually answered with opinion or theory, rather than evidence. As a result, it is common to hear talk of the new economy – rooted in the high tech/ bio tech economy, the service economy, and the creative bohemian economy - rolled into a discussion which concludes that cities (and usually metropolitan cities) are the engines of economic growth.

The increasing focus on the metropolitan economy stems primarily from the demographic reality that most people live, and hence work, in cities. The release of the 2001 Census population counts confirmed that Canada, and British Columbia, are urbanized. Eighty percent of Canada's population, and eighty-five percent of British Columbia's population, live in urban areas. More significantly, we are metropolitan, with two-thirds of Canada's populations living in its 27 Census defined metropolitan areas. Further, metropolitan regions are the places of residence of most of Canada's workers, with two-thirds of its 2001 experienced workforce of 15,576,565 living in metropolitan regions.

British Columbia's metropolitan regions, the Lower Mainland, with a 2001 census population of 2,224,515 (57 percent of BC's population in the Greater Vancouver and Fraser Valley Regional Districts) and the Capital Regional District, with a population of 325,754 (8 percent), are home to 65 percent of the province's 2001 Census population of 3,907,738. They are also home to 1,336,175 (66 percent) of British Columbia's experienced workforce of 2,014,600 workers.

Accompanying the increasing dominance of metropolitan areas in the national and provincial landscape has been a re-evaluation of the role these regions play in their provincial and national economies, and an increasing demand for a larger share of federal and provincial tax revenue for the governments of metropolitan regions. In the extreme, arguments are now made that metropolitan regions have become **“the”** engines of economic growth, and that these “city states” and their “new economies” are the generators of income not only for themselves, but also for their provinces and country.

To this point, the extent of the economic engine argument has largely amounted to speculation. To move from hypothesis to evidence, it is necessary to determine the share of provincial income that is produced by metropolitan activities (and more specifically, by all regions throughout the province) before accepting that metropolitan regions are either the engines of growth or deserving of a greater share of tax revenue. One important aspect of this analysis in the British Columbia context is the identification of the spatial origin of provincial income – the extent to which economic activity is dependent on natural resources – from its intermediate processing. A cogent example is

the electrical power exports of BC Hydro: while much of the employment, both administrative and distributional, are found within the Lower Mainland, the resource that the export value is built on clearly lies far from this metropolitan region.

The research presented in this paper focuses on the identification of the activities, and their location, that are the fundamental source of income for the economy of British Columbia, thereby providing the funds that permit subsequent consumption and investment spending, and, as a result of taxation, government spending. This “source of the first dollar” analysis will both identify those industries that form the base of the provincial economy, as well as the relative roles that metropolitan and non-metropolitan regions play in earning the province’s income.

This analysis indicates that people in the metropolitan areas should, at least in the current context, perhaps be more humble, and, insofar as they aspire to the “city state” model as a goal, should also acknowledge that it is far from becoming a reality. While the province’s metropolitan regions contribute to the provincial economy, they are not yet contributing their per capita share; they are engines of economic growth, but not “the” engines. The big engines of economic growth in the province remain its resource regions, especially in the Northern half of the province. The metropolitan regions would be well advised to be much more active in both developing their international and inter-provincial exports and in supporting the province’s resource regions, which make a disproportionate contribution to the generation of the province’s total export income.

The purpose of this report is to stimulate discussion and further research into the commodity and spatial origins of the economic base of the province of British Columbia. The report opens the discussion with a presentation of the economic base concept as it relates to the income and expenditures of the provincial economy. It then turns to the consideration of the long term trading patterns of the international and inter-provincial trade (exports and imports) that determine the net size of the province’s economic base, followed by a discussion of the detailed composition of these trade flows using data for the past five years for international exports and estimates for inter-provincial exports.

Having addressed the temporal pattern of trade, the presentation then shifts to the consideration of the spatial distribution of the sources of exports within the province. This is done using an allocation process based on 2001 estimated exports by commodity type and 2001 employment by industry and occupation type by major development regions in the province. While the analysis was carried out at the major region level, the regional results are aggregated to the metropolitan and non-metropolitan level for the purposes of presentation. The findings for each region are then presented, followed by a discussion of the conclusions and suggestions for future research.

II. THE ECONOMIC BASE

A. The Concept

There are three components to a regional economy. The first, and most obvious, component is the population-serving sector, which includes all economic activity within the region that is directed towards meeting, directly or indirectly, the consumption demands of the region's residents. The second component is the importing sector, which includes all economic activities that drain money out of the region as a result of the importing of goods (e.g., herbal teas) or of services (e.g., Vancouverites going to Cabo for a week in the winter). The third component is the exporting or economic base sector, comprising all economic activity that brings money into the region, including both the export of goods (e.g., softwood lumber to the United States) and of services (e.g., tourists from the United States dining at Rosa's in Penticton). Exports are the base of an economy because they are the only source of money to pay for imports and to facilitate transactions and taxation in the population serving sector. In this sense we are interested in "first dollar" produced by a specific activity.

The analogy of a bathtub is useful in describing the economy in economic base terms. Our day-to-day experience in an economy is mainly with the water in the tub, in the transactions of the population-serving component as we buy groceries and get our hair done. The volume of money used in these internal transactions is analogous to the water level of the bathtub. Its flow or churn as people carry out business with each other is therefore analogous to water swirling in the tub.

Population-serving transactions within a region can continue indefinitely so long as nothing is imported from outside the economy. Imports mean money leaves the region in exchange for imported goods and/or services. In the bathtub analogy, importing is the equivalent of pulling the plug out of the bathtub, as it drains money out of the economy – all other things equal, the longer and/or the more we import, the lower the water level in the tub.

To offset the loss of money from the economy that results from imports, there must be a source of income for the region, something that brings money into the economy to ensure, directly or indirectly, that there is sufficient money in the region to at least pay for imports, and at best to exceed them, thereby increasing the size of the economy. In the bathtub analogy, the tap (exports) must bring in the same amount of water as the drain (imports) takes out of it if the water in the tub (the economy) is to remain at a constant level (neither shrink nor grow). If the outflow (imports) exceeds the inflow (exports), the water level will fall (the economy will shrink) and at some point in the long run, the tub will be empty, which will mark the end of importing, and likely of inhabitation in the region. Conversely, if exports exceed imports, the water level will rise, and the economy will grow.

Much of government activity is within the tub, taking money from one part of the tub (via income or consumption taxes) and adding it to another (via government spending). In some contexts, governments may act like importers, removing water from the tub to put

in another tub, and in other cases they may act like exporters, bringing thimblefuls of water from other tubs to dump in ours.

While imports may define our standard of living, as they represent consumption that could not be produced locally, exports provide us with the ability to pay for them. Thus, the base of an economy is its ability to sell goods and services to residents of other regions, thereby providing the funds to support both population-serving and import activities. All non-export economic activity, from brain surgery to day care, relies on the economic base as a source of revenue. In other words, both population-serving and importing activities are effectively parasites on the export sector, and as parasites they should have a strong interest in the health of their host.

It is important to note that in the short run, borrowing money from lenders outside the region (external debt) can be used to cover a deficit between imports and exports, as debt brings money into the economy. In the long run, however, external debt must be serviced, and ultimately, repaid. Due to the fact that the only source of money used to make external debt payments is export income, borrowing outside the economy simply represents a claim (i.e., contracting to send money out of the region) against future export income.

B. Trade as a Measure of British Columbia's Economic Base

1. Two decades of International and Inter-provincial Trade Flows

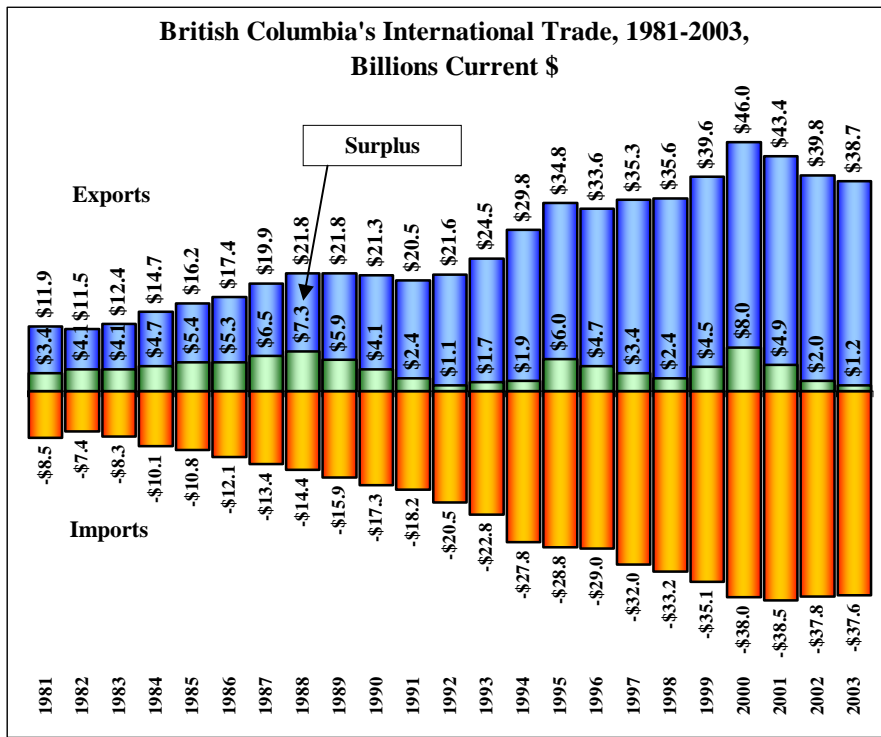
In this report, the focus is on the economic base of the province of British Columbia and its origins within the regions of the province. It should be noted that the provincial level of analysis was selected for two reasons. First, the provincial level is where most of the redistribution of income between people and communities occurs, whether it is through direct and indirect taxation or through public sector spending on transfers such as education, welfare, and health care. On a much more mundane level, the provincial level is also the finest level of detail for which import and export data are published. Data used in this section are all derived from trade data published in Statistics Canada's Provincial Economic Accounts publications and from BC Statistics Economic Accounts data for the years indicated.

At the provincial level, there are two distinct flows of imports and exports: the international flow, comprising goods and services traded between British Columbia and foreign countries, and the inter-provincial flow between British Columbia and other Canadian provinces. These two flows have displayed very different patterns over the past two decades.

International exports are the largest and most important of the province's trade flows. They have generally grown over the past two decades, increasing from \$11.9 billion current dollars in 1981 to \$38.7 in 2003 (see Figure 1; also note that all dollar values in this report are in current dollars). Having said this, there have been declines in export levels along the way; some modest (for example, from 1989 to 1991, and 1995 to 1996) and one major (a 16 percent decline between 2000 and 2003). This reduction in water

flow from the tap into the tub has had major consequences for communities in the province.

Figure 1



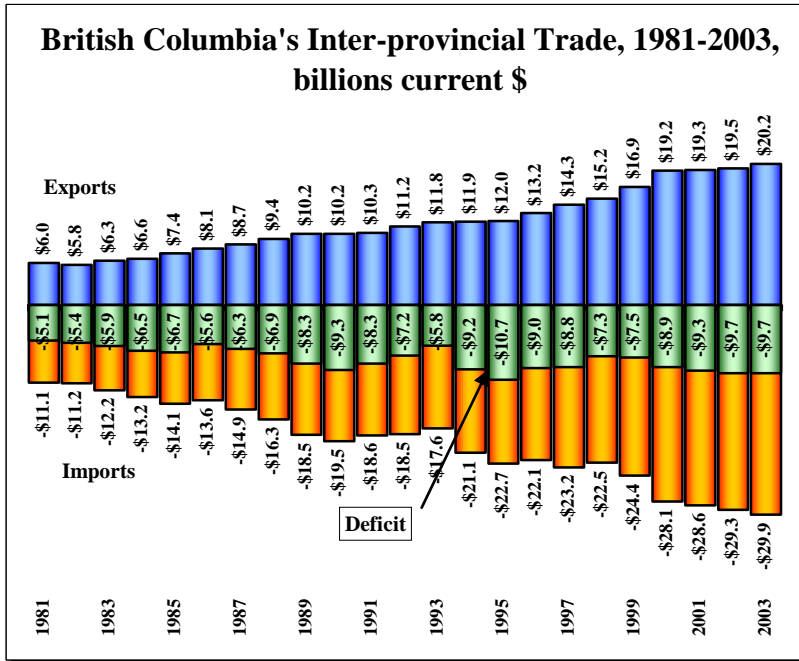
One of these consequences has been a reduction in our ability to import, with the 2.4 percent decline in total international imports from \$38.5 in 2001 to \$37.6 in 2003 being the first time in the past two decades where importing decreased, after steady increases from \$8.5 billion in 1981 to \$38.5 billion in 2001.

Over this period, British Columbia always maintained a positive trade balance with other countries but, as the difference between the two different flows shows,

the magnitude of the international trade surplus has been subject to a great deal of variation, ranging from a high of \$8.0 billion in 2000 to a low of \$1.1 billion in 1992. Not only was the 2003 international trade surplus of \$1.2 billion the second smallest surplus recorded over this period, but at 3 percent of exports it represented the smallest share of exports in the past 23 years (in the 1980s, BC's international trade surplus was in the range of 33 percent of exports). International exports and imports have become almost equal, just barely above the level necessary to keep the water level in the tub constant.

Quite a different trading relationship exists between British Columbia and the rest of Canada (Figure 2). Inter-provincial exports, at roughly half the magnitude of international exports, have increased continually over the past two decades, going from \$6.0 billion in 1981 to \$20.2 billion in 2003, with the 2000 to 2003 period representing the slowest growth in inter-provincial exports in this twenty year period. Inter-provincial imports, defined as goods and services British Columbians buy from other parts of Canada, have also increased – albeit in a rather wobbly fashion – over the past two decades, going from a total of \$11.1 billion in 1981 to \$29.9 billion in 2003.

Figure 2

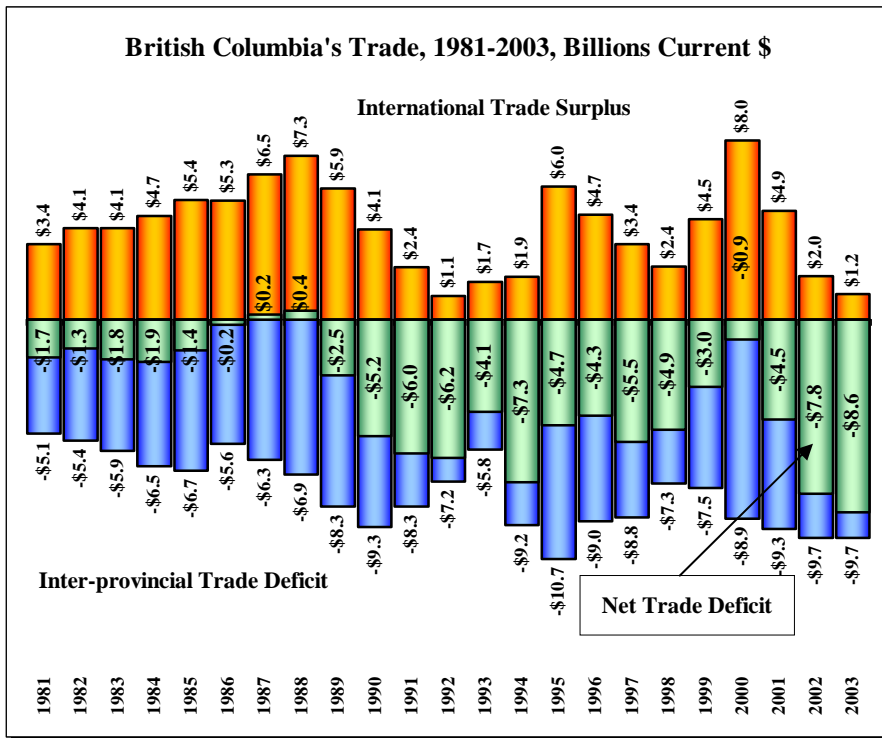


The province's inter-provincial imports have always exceeded inter-provincial exports, with the inter-provincial trade deficit almost doubling from \$5.1 billion in 1981 to \$9.7 billion in 2003 (Figure 2). Having said this, this deficit relative to the value of inter-provincial exports is declining, with the deficit over the last five years amounting to less than one-half of inter-provincial exports, compared to its 92 percent level in the early 1980s.

In light of the relatively steady trend in inter-provincial deficits, it is changes in the international trade surplus that is responsible

for the variance to the overall trade balance. Only twice since 1981 - in 1987 and 1988 - has British Columbia's international trade surplus exceeded its inter-provincial deficit (Figure 3).

Figure 3

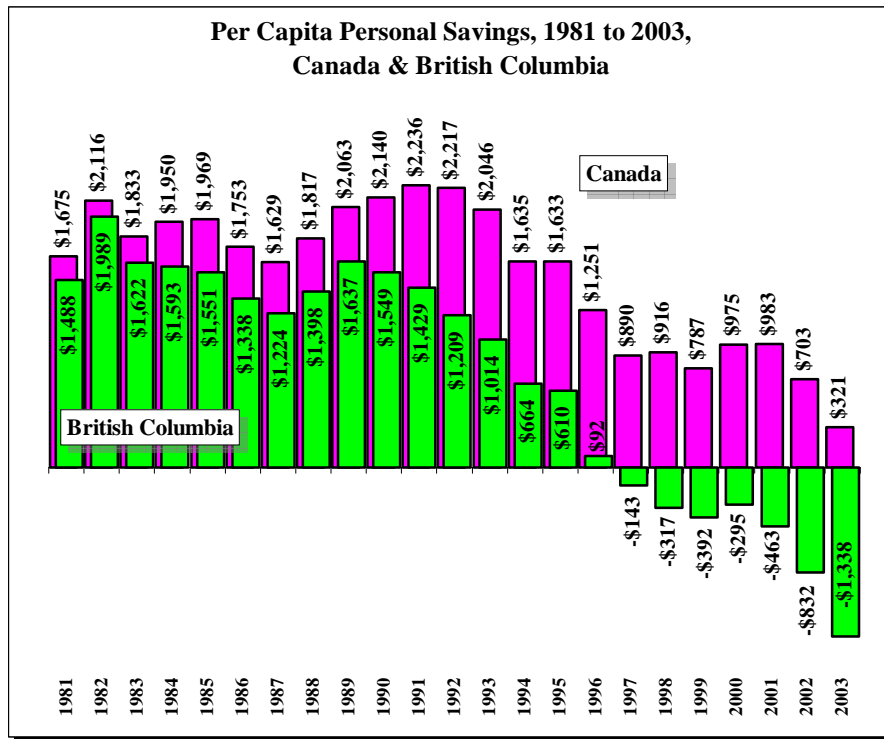


The start this decade was marked by conditions much like those from the early 1990s, with the shortfall between international surpluses and inter-provincial deficits climbing. With the second lowest international surplus and the second highest inter-provincial deficit, 2003 posted not only the largest trade deficit ever (\$8.6 billion current), but, more significantly, also the largest relative total trade deficit: the inter-provincial deficit of \$9.7 billion was 747 percent larger than the international surplus of \$1.2 billion.

Having used the analogy of exports filling up a bathtub and imports draining water out, it is necessary to consider the message delivered by the data, which show an almost continuous, and recently increasing, trade deficit for the province. To do so requires delving a bit deeper into the trade data: goods and services traded only comprise current production activities, omitting financial flows such as debt, pension and unemployment insurance payments, and inter-provincial transfers. Thus, the level of water in the tub can be maintained in the face of a consistent trade deficit if there are sources of revenue that do not involve economic production.

While the balance of payments data for trade are not accompanied by corresponding data for financial flows, other data sources do illustrate the direction of change in financial conditions in the province in response to the picture painted by the trade data. One indicator is the level of personal savings in the province: since 1997, British Columbians

Figure 4



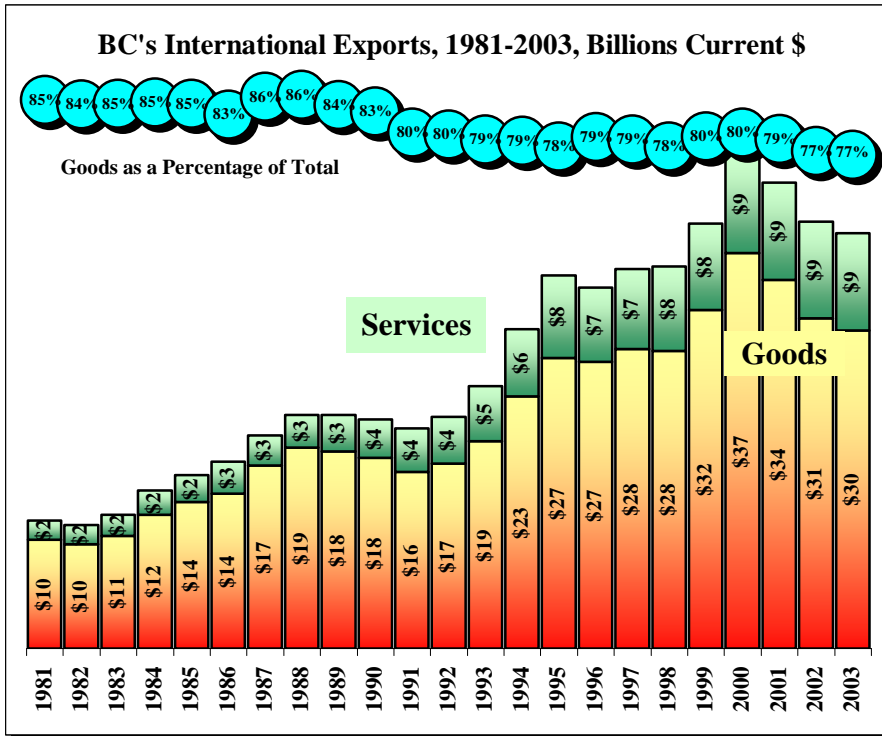
have in part been able to spend more of their income on imports than they exported, effectively spending more on consumption than their personal incomes.

Statistics Canada's Provincial Economic Accounts show that per capita savings in British Columbia declined steadily from 1990's \$1,637 per person to \$92 per person in 1996, and then turned negative to reach a record dis-saving (liquidation of assets or taking on debt) of \$1,338 per person in 2003 (Figure 4). This compares to a relatively low, but still

positive, savings per capita of \$321 per person in Canada as a whole. In 2003 total consumption spending exceeded personal disposable income in British Columbia by a record \$5.5 billion, using debt and dis-saving to partially meet a \$8.6 billion dollar deficit between imports and exports. The provincial government also helped by spending more than it earned, with this deficit also contributing to the trade gap.

Figure 5

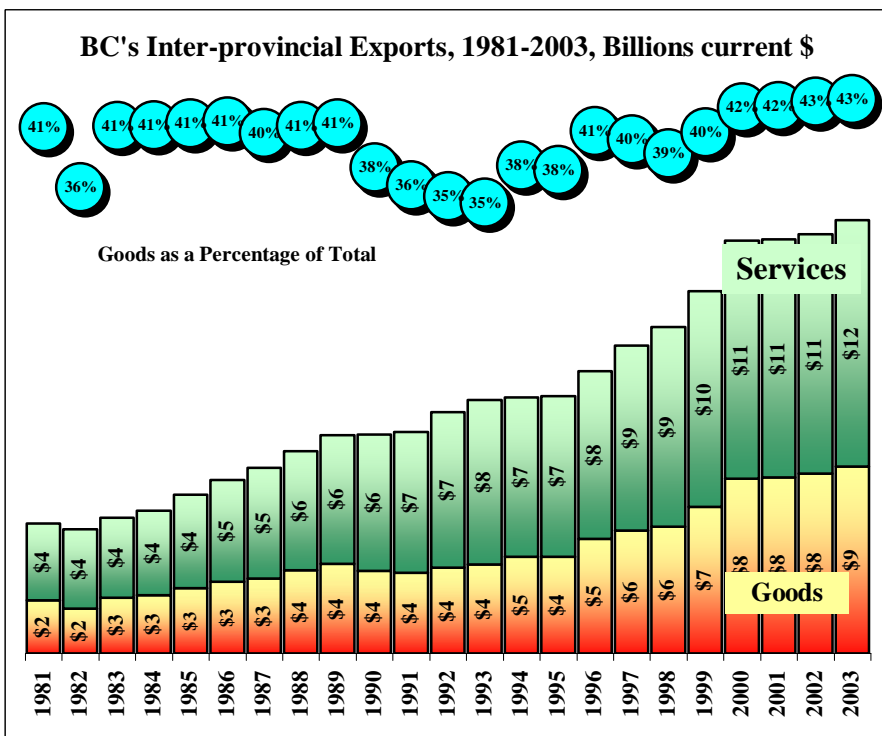
2. The Overall Composition of British Columbia's Trade



The focus of this report is on the measurement of the degree to which British Columbia's exports are dependent upon specific sectors of economic activity within the province, and as such, the report attempts to identify the spatial origins of the province's economic base. The next step in doing this is to examine the overall composition of the province's international and inter-provincial exports, something that again can be done using the balance of trade data from Statistics Canada and BC Statistics. These data

disaggregate the trade flows into goods (e.g., fish and furniture) and services (e.g., tourism and ESL training) that are sold outside the province or to persons resident outside the province which bring money into the province.

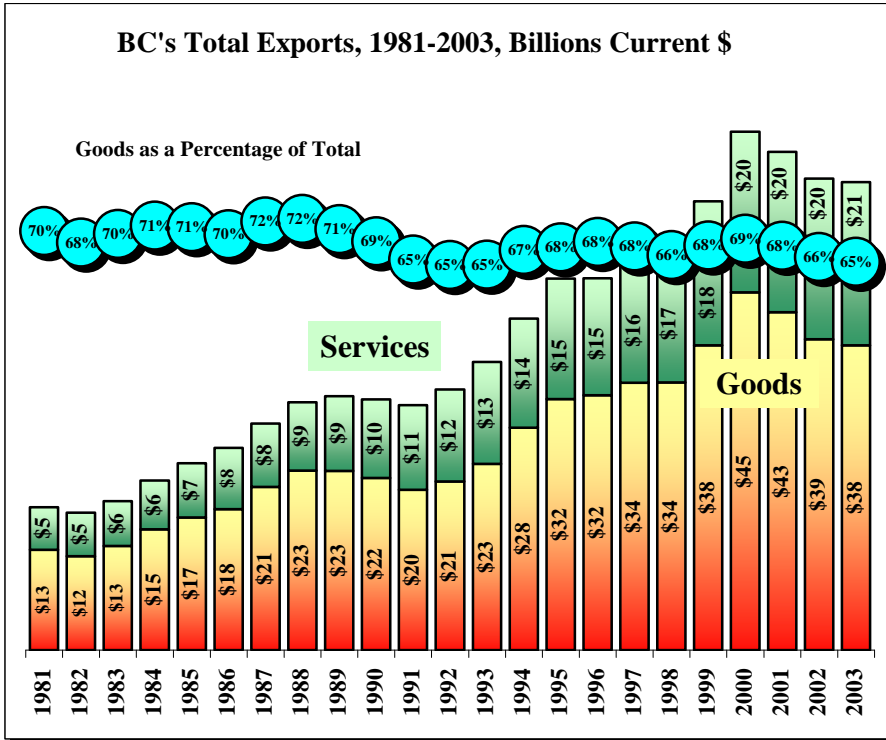
Figure 6



In terms of international exports, British Columbia is overwhelmingly an exporter of things rather than services: roughly one four of every five dollars that the province earned from international exports came from the sale of goods (Figure 5). While this is down from the 85 percent average of the 1980s, it remains a strong indicator on the province's dependency of the sales of goods. Such is not the case with inter-provincial trade, where the sale of services leads the sale of

goods (Figure 6). Services have generally account for 59 percent of inter-provincial exports, with the sale of goods accounting for the other 41 percent; however during the period of slow economic growth in the rest of Canada in the early 1990s, goods' share dropped to 35 percent, while the strong housing market (and demand for BC wood

Figure 7



the province's total exports is impressive.

products) of the past five years in the rest of Canada increased goods share to a modest record of 43 percent of inter-provincial sales.

Combining international and inter-provincial trade, two thirds of the province's exports are goods, with one third being services (Figure 7). While this is down slightly from the 70 percent level of the 1980s, the stability of British Columbia's goods exports as a share of total exports, and, by consequence, the impact of changes in the level of goods exports on

III. EXPORTS BY DETAILED TYPE

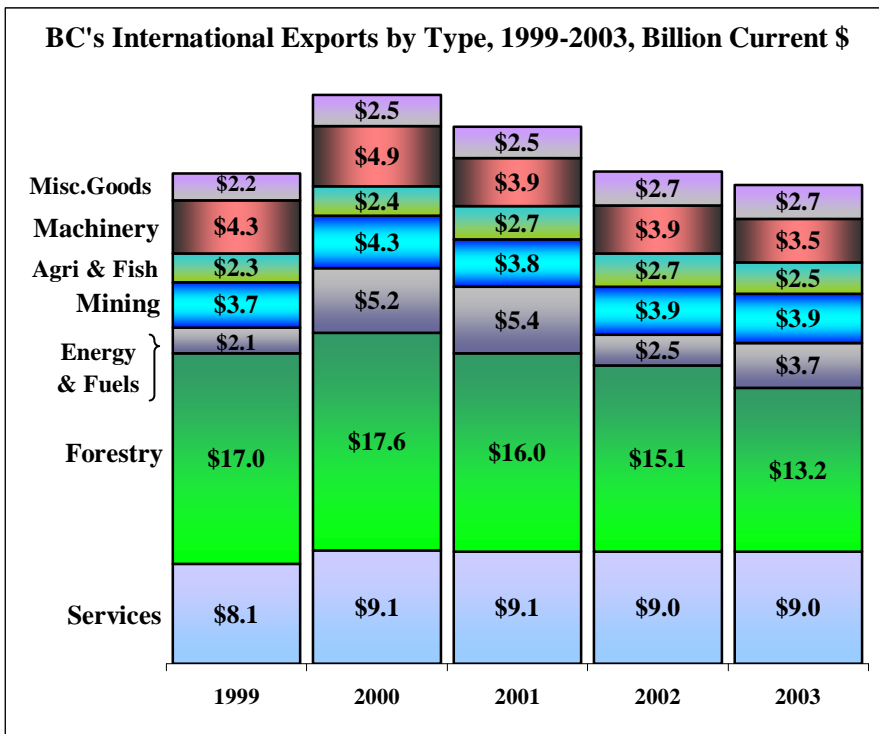
A. International Exports

Balance of trade (provincial economic accounts) data such as those used in the preceding sections provide a useful general picture of the province’s trading base, but they do not provide any detail as to the composition of trade flows beyond a goods and services breakdown, nor their spatial implications of their origins. In order to examine these flows in greater detail, it is necessary to turn to customs based data which provide the detail for goods exported to other countries. Acknowledging the different sources for trade data, the **percentage distribution** of exports by type of exported merchandise from the customs data is here applied to the absolute value of goods exports from balance of trade data to ensure consistency in the values presented in this report. [Note that these data do not describe the composition of either international exports of services or inter-provincial exports of goods or services, shortcomings that are addressed in later sections of this report.]

As the methodology used here for the spatial allocation of contributions to the province’s economic base relies on data from the most recent (2001) census, this year will be the focus of the remainder to this report. In order to put this year in its context, the customs based goods export data for the 1999 to 2003 period is first considered.

The Industry Canada’s trade data website, www.strategis.ic.gc.ca, publishes customs based trade data on British Columbia’s international merchandise exports by 111 major commodity classifications. [It should be noted that while the spatial allocation of exports presented in the following section was carried out at a detailed level, for purposes of presentation in this report, merchandise exports have been aggregated to 6 major industrial groups] As these data show, the pattern of change in exports of the forestry

Figure 8



industry (logs, dimensioned wood, plywood, pulp and paper, chips and other forest products, not including products manufactured from these products) sets the tone for the province’s international export of goods (Figure 8).

From the \$46 billion peak of (current dollar) international exports in 2000, the 15 percent decline in the province’s international exports to \$38.5 billion in 2003 was essentially attributable to

declines in two sectors, forestry and energy. In terms of energy exports, the \$5.2 billion in 2000 and the \$5.4 billion in 2001 were truly anomalies; bonanzas for the province as a result of energy demand and supply crises in the Western United States, and twice the \$2.4 billion annual average for the 1994 to 2003 decade.

In contrast, the post-2000 decline for the forest industry's international exports took it below its decade annual average of \$15.5 billion, with 2003's exports of \$13.2 billion being the lowest current dollar value of exports in this ten year period. The \$4.4 billion dollar decline between 2000 and 2003 in the forest industry's international exports was larger than the total value of international export of each of the other 5 goods exporting industries. In spite of this decline, by 2003 the forest industry remained the province's major international export earner, providing one-third of the province's international export income, one-and-a-half times the value of all international services exports and the combined value of international energy, mining and agricultural exports.

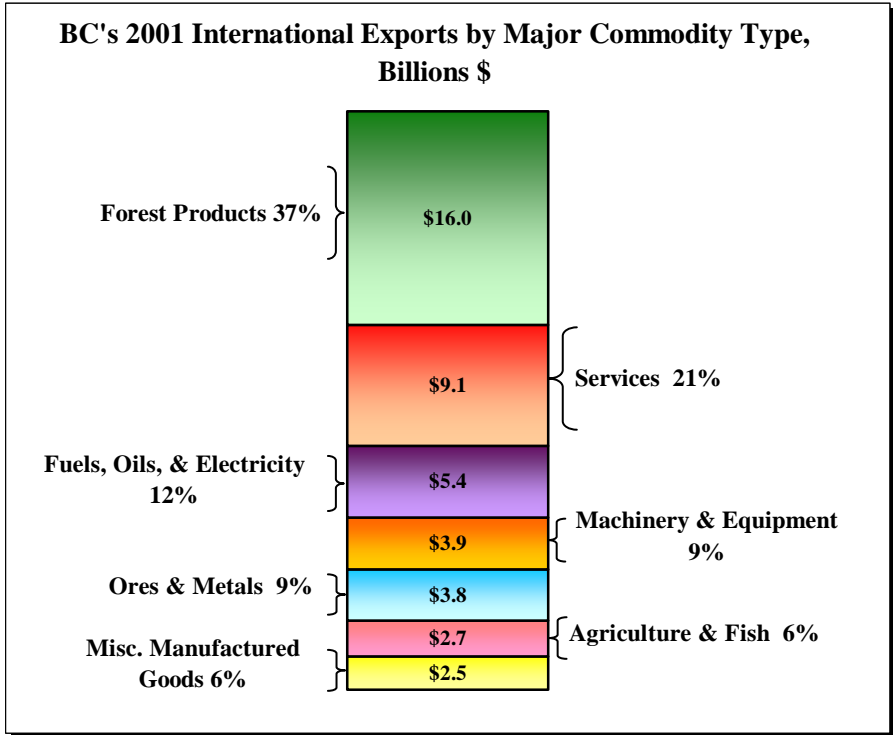
Forestry, agriculture and fishing, mining, and energy exports are clearly not metropolitan in origin; in addition, they accounted for 63 percent of the province's total international exports over the 1999 to 2003 period, three times the 21 percent average for all services exports. Without any further analysis, the province's residents, both metropolitan and non-metropolitan, are clearly dependent on the province's non-metropolitan resource endowment to form approximately two-thirds of its international economic base. While metropolitan residents may correctly argue that they add value to these resource exports - by processing or shipping them through their ports or by adding management and administrative expertise - this further emphasizes, rather than diminishes, the reality of their natural resource dependency as the metropolitan component would not exist without the non-metropolitan activity. The fact that there is a sawmill, a salmon cannery, a cranberry or dairy farm, or BC Hydro's head office in a metropolitan region does not make it a metropolitan activity.

[As there are no customs based data on the composition of the province's international exports of services, it is not possible to comment on their origin at this point, except to raise the point that, to the extent that the "super natural BC" slogan is a draw, much of this activity is also dependent on our natural resource endowment, and hence not a product of metropolitan economies per se.]

As international exports of goods from 2001 will be used extensively in the remainder of this report, their composition warrants further comment. Due to the fact that employment data are available for 2001, but not for other years in the 1999 to 2003 period, 2001 is the most recent benchmark for employment data; furthermore, using the 2001 international export data provides a reasonable representation of the recent composition of international goods exports.

The 2001 distribution of international goods exports by industry type (shown including services in Figure 9 and for goods only at the level of detail used in the spatial estimates in Table One) is not dramatically different from the average for the 1999 to 2003 period: fuels, oils and electricity exports accounted for 12 percent in 2001 compared to the 5 year average of 9 percent, while machinery and equipment accounted for 9 percent compared to the 5 year average of 10 percent. Otherwise, shares in 2001 were within 1 percentage point of the 5 year average, with forest products accounting for 37 percent of the province's goods exports in 2001 compared to their 38 percent five year average, ores and metals exports accounting for 9 percent compared to its five year average of 9 percent, and miscellaneous manufactured goods accounting for 6 percent rather than its average of 6 percent.

Figure 9



percent, and miscellaneous manufactured goods exports accounting for 6 percent rather than its average of 6 percent. Agriculture and fishing's share was 6 percent in both 2001 and over the five year period.

A second point that warrants brief comment is that, on a net basis, not all goods exports have the same impact on the economy, as some rely much more extensively on imports in their production. Natural resource exports generally have a relatively low import component:

imported energy used to run harvesting and transportation machinery and equipment and imported machinery and equipment usually form a relatively small portion of the value of exported natural resource products such as timber, fish, or cranberries. As a result, these industries generally have a high net residual between the gross dollar value of exports and the net value after deducting the value of imported goods used in their production.

In contrast, exported manufactured goods such as computers and machinery (and from Eastern Canada's automobile industry) often involve the assembly of a high proportion of imported parts, thereby diluting the net residual value between exports and imports that remains in the economy. Having said this, the aluminium exports of Kitimat rely on the importation of large volumes of bauxite, something that is not reflected in the gross export data.

Tracing the flow of resources into and out of each sector and each region of the provincial economy to identify the net export benefit from each sector would require significant research funding to develop a spatial input/output table. While well beyond the scale of that available for this study, it is one area for further research into the nature of the BC economy that would be warranted. Given this limitation, we must live with the reality that the net benefit to the provincial economy of goods exports that involve low levels of imports in their production will be understated, and those with a high import composition will be overstated, by the use of gross export value alone, something that will most likely understate the net benefit of resource based exports to the province's economic base.

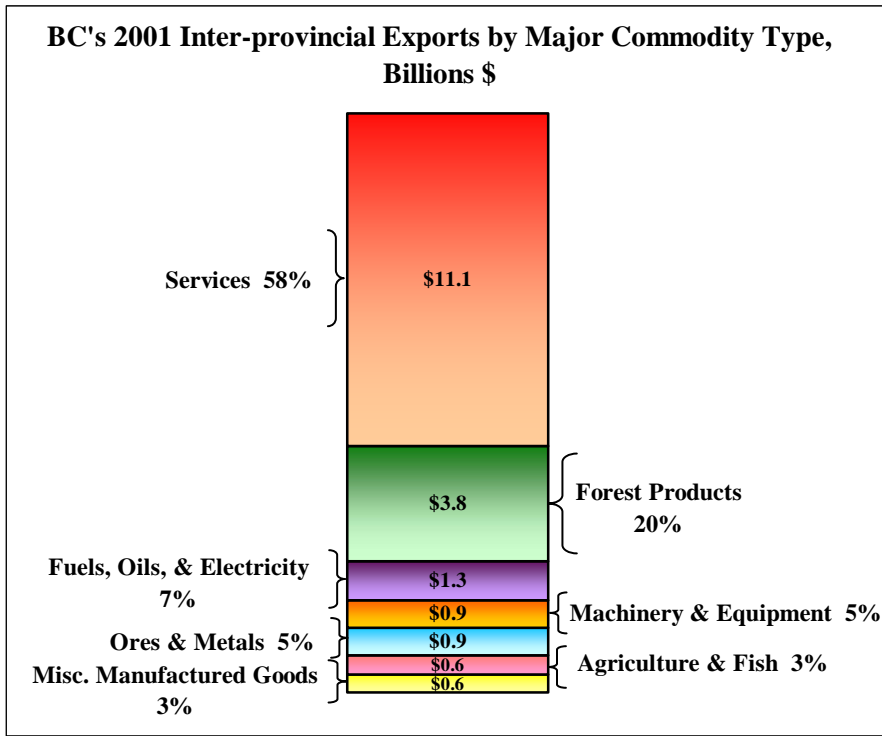
Table One:		
2001 British Columbia International Export of Goods by Value	Millions	Share
	\$34,342	100%
	Forestry	\$16,036 47%
NAICS 113 - Forestry and Logging	\$428	1.2%
NAICS 3211 - Sawmills and Wood Preservation	\$7,813	22.8%
NAICS 3212 - Veneer, Plywood and Engineered Wood Product Manufacturing	\$1,185	3.5%
NAICS 3219 - Other Wood Product Manufacturing	\$440	1.3%
NAICS 3221 - Pulp, Paper and Paperboard Mills	\$5,900	17.2%
NAICS 3222 - Converted Paper Product Manufacturing	\$66	0.2%
NAICS 323 - Printing and Related Support Activities	\$201	0.6%
Forestry Support Activities	\$1	0.0%
	Agriculture, Fishing, Hunting and Trapping	\$2,676 8%
NAICS 111 - Crop Production	\$602	1.8%
NAICS 112 - Animal Production	\$427	1.2%
Agricultural Support Activities	\$2	0.0%
NAICS 311 - Food Manufacturing	\$1,327	3.9%
NAICS 312 - Beverage and Tobacco Product Manufacturing	\$96	0.3%
NAICS 114 - Fishing, Hunting and Trapping	\$222	0.6%
	Mining	\$3,820 11%
NAICS 212 - Mining (except Oil and Gas)	\$2,196	6.4%
NAICS 331 - Primary Metal Manufacturing	\$1,108	3.2%
NAICS 332 - Fabricated Metal Product Manufacturing	\$516	1.5%
	Energy	\$5,404 16%
NAICS 211 - Oil and Gas Extraction	\$2,985	8.7%
NAICS 2211 - Electric Power Generation, Transmission and Distribution	\$2,259	6.6%
NAICS 324 - Petroleum and Coal Products Manufacturing	\$160	0.5%
	Machinery	\$3,886 11%
NAICS 333 - Machinery Manufacturing	\$1,472	4.3%
NAICS 334 - Computer and Electronic Product Manufacturing	\$983	2.9%
NAICS 335 - Electrical Equipment, Appliance and Component Manufacturing	\$505	1.5%
NAICS 336 - Transportation Equipment Manufacturing	\$925	2.7%
	Miscellaneous manufacturing	\$2,520 7%
NAICS 313 - Textile Mills	\$6	0.0%
NAICS 314 - Textile Product Mills	\$29	0.1%
NAICS 315 - Clothing Manufacturing	\$276	0.8%
NAICS 316 - Leather and Allied Product Manufacturing	\$18	0.1%
NAICS 325 - Chemical Manufacturing	\$841	2.4%
NAICS 326 - Plastics and Rubber Products Manufacturing	\$442	1.3%
NAICS 327 - Non-Metallic Mineral Product Manufacturing	\$440	1.3%
NAICS 337 - Furniture and Related Product Manufacturing	\$238	0.7%
NAICS 339 - Miscellaneous Manufacturing	\$231	0.7%

B. Inter-provincial Exports

There is not a comprehensive data source on the composition of inter-provincial exports beyond the goods or services breakdown provided by provincial economic accounts. Preserving, in the case of the 2001 data, the 42 percent goods (\$8 billion) and 58 percent services (\$11 billion) split of inter-provincial trade, it is here assumed that the industry composition of goods exports to other provinces are the same as the mix for exports to other countries.

The general support for this assumption is that our comparative advantage should be reflected in both inter-provincial and international goods exports: BC forest products are shipped to the rest of Canada; its Peace River gas wells feed into inter-provincial pipelines; its salmon, oysters, clams and cranberries are feasted upon across the country; and it does not assemble cars for export to other provinces or other countries. The specific support for this assumption is that, in the absence of any other data source, this approach is the only one that can be readily used. This is another area that would warrant further research.

Figure 10



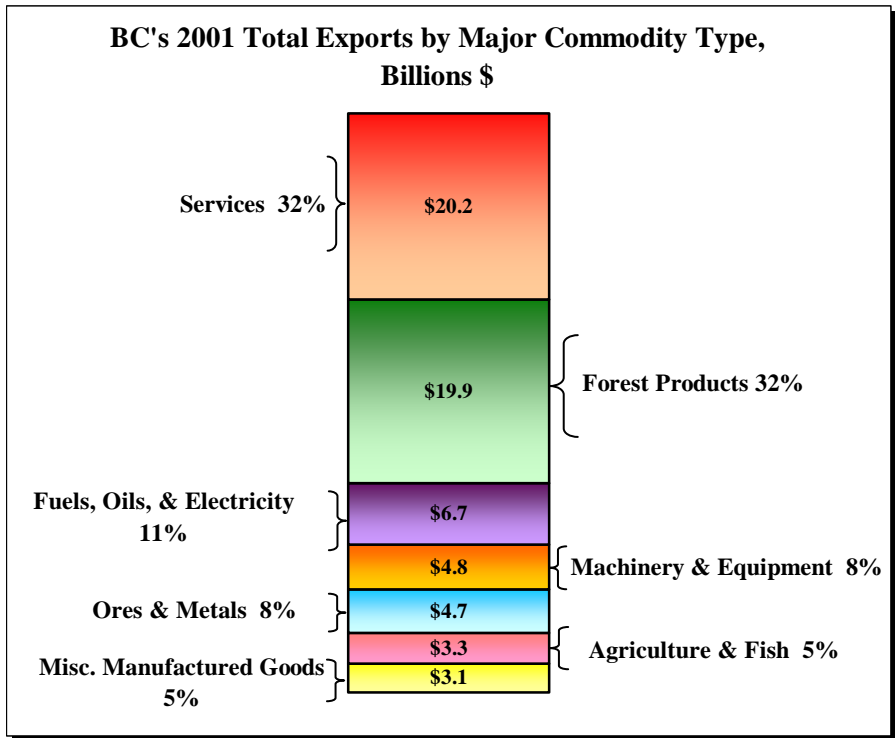
The combination of the control totals on goods and services exports from the provincial economic accounts data and the assumption of the same mix of inter-provincial and international exports results in the forest industry having an estimated 20 percent share (\$3.8 billion) of 2001's inter-provincial exports, with fuels, oils and electricity exports accounting for a further 7 percent, machinery and equipment for 5 percent, mining for 5 percent, agriculture and fishing for 3 percent, and miscellaneous

manufactured goods for 3 percent (Figure 10).

C. Total BC Exports

Combing estimated international and inter-provincial exports by industry category provides an estimate of the mix of total exports from the province. At this aggregate

Figure 11



level, service exports form the largest single category of exports, accounting for \$20.2 billion of exports in 2001, marginally ahead of the forest industry's \$19.9 billion (Figure 11).

Exports of fuels, oils and electricity (\$6.7 billion, 11 percent), ores and metal products (\$4.7 billion, 8 percent), and agriculture and fishing products (\$3.3 billion, 5 percent) in total accounted for \$14.7 billion in total export value, making up 24 percent of the province's total exports. Exports of machinery and equipment (\$4.8 billion, 8 percent) together with

miscellaneous manufactured products (\$3.1 billion, 5 percent) provided the final 13 percent of the province's total export base.

At this point the analysis shows that \$34.6 billion of total exports by commodity type originate from our forests, mines and fields; this means we can expect that over half of the value of our total exports originates from typically non-metropolitan activities.

IV. METHODOLOGY FOR ESTIMATING REGIONAL ORIGINS OF EXPORTS

A. Data Used

As indicated, the tasks for this research were twofold: first to identify the extent to which the provincial economy is dependent upon natural resource industries and second to identify the extent to which metropolitan areas were “the” engines of growth in the provincial economy. In terms of the first task, when the forest industry’s 32 percent share of total provincial exports is added to the 24 percent share of the other rural and resource industries such as mining, fishing, agriculture, and energy, the total is a dominant 56 percent: even without consideration of services such as resource and rural tourism, the province’s economic base is clearly primarily natural resource dependent.

The second task, the identification of the spatial origins of the province’s economic base, requires regional export data and estimation of the extent to which service sector exports are natural resource dependent. However, there are no data available that directly identify the place of origin within the province of international or inter-provincial exports, as the port of departure from the country (not the origin of the product) is all that is recorded on customs forms. As a result, an indirect approach must be utilized to determine where in the province exports originate.

In this context, the distribution of the labour force by industry and occupation and place of residence provides a useful, if not perfect, proxy measure for the origin of the province’s exports. The conceptual basis for this approach is the assumption that there will be a general correspondence, at a relative high level of spatial aggregation, between where people work and where they live. This is not an exact approach, as some people live outside the region in which they work: for example, a worker in the Dawson Creek – Fort St. John gas fields may (does) live in Naramata, with a ten day on / ten day off rotation between work and home.

While on a theoretical basis data on occupation by place of work would be more useful in the identification of the origin of exports, data classification imposes limitations on this approach. The limitations stem from the fact that the 2001 Census data, the only comprehensive survey of employment by industry, occupation and place of residence and of work, classifies locations as people a) having a usual place of work outside the home, b) working at or from home, and c) having no fixed workplace. As this latter category is prevalent in the oil and gas, fishing and forestry industries, the place of work data would not necessarily provide any improvement on the place of residence data: data tabulation cost prohibited the obvious solution, which would be to use both sets of locational data.

This approach allowed the consideration of not only in the metropolitan and non-metropolitan context, but also a finer level of geography by disaggregating the province into ten major regions (as shown on Table Two). The two metropolitan regions are the Lower Mainland (composed of the Greater Vancouver and Fraser Valley Regional Districts) and Capital Regional District (the City of Victoria and its surrounding communities).

Table Two:
British Columbia's Regions

Region	Composite Regional Districts
<u>Non-metropolitan Regions</u>	
Kootenays	East Kootenay Central Kootenay Kootenay Boundary
Okanagan Basin	Okanagan-Similkameen Central Okanagan North Okanagan
Sunshine to Rockies	Sunshine Coast Squamish-Lillooet Thompson-Nicola Columbia-Shuswap
South Coast and Island	Mount Waddington Central Coast Comox-Strathcona Powell River Alberni-Clayoquot Cowichan Valley Nanaimo
Cariboo	Fraser-Fort George Cariboo
North Coast	Skeena-Queen Charlotte Kitimat-Stikine
Nechako	Stikine Region Bulkley-Nechako
Northeast	Northern Rockies Peace River
<u>Metropolitan Regions</u>	
Lower Mainland	Fraser Valley Greater Vancouver
Capital	Capital

The eight non-metropolitan regions are the Kootenays, the Okanagan Basin, the Sunshine Coast to the Rockies Region, the South Coast and Island, the Cariboo, the North Coast, the Nechako, and the Northeast. While the focus of the body of this report is on the metropolitan and non-metropolitan contributions to the provincial economic base, the final section provides a summary of the analysis for each of these major regions.

The cross tabulation of industry and occupation is particularly important in the analysis carried out in this report (see the Appendix for the level of detail used in both industry and occupational data). The reason for using industry data is that the data used to identify the type of goods exported classifies the exported goods by the industry that produces the exports, using the North American Industry Classification System (NAICS); using a tabulation of employment by industry permits linking the export to the employment that creates the product.

In order to locate the spatial origin of the export it is necessary to consider employment in an industry in more detail, by looking at occupation (the kind of work the person performs) within each industry. The reason for using occupation within industries is that industry data includes not only the

people who directly produce the export, but head office functions such as accounting, human resources, marketing, and legal services, which may not be located in the region where the export originates. The Census data tabulates occupations by the National Occupational Classification for Statistics (NOCS), with the 48 two-digit level of tabulation being used here.

Note also that allocating the value of the export to the region of origin is not the same as allocating it to regions where value is added to the export. Head office, processing and transportation functions contribute to the final value of the export, but they do not necessarily occur in the region where the export originates. The location of this employment does not assist in the measurement of either resource dependency or the role

of metropolitan activities as engines of economic growth: the fact that the accounting department of a natural gas exporting firm is located in Vancouver does not make the metropolitan region the origin of the natural gas export.

This is not to say that metropolitan regions do not contribute to the value of exports, but rather it is to say that the opportunity for value added is wholly dependent on having the product or service to add value to. Thus, while allocation of the value of exports to regions of origin by using occupational criteria may omit the head office, processing and transportation contributions, these value-added contributions would not exist without the initial production of the export. Only by allocating exports to their region of origin can the fundamental sources of the province's export income, and hence both the degree of its natural resource dependency and the location of its engines of economic activity, be identified.

B. Example of Allocation Process

The first step in the allocation process was to identify the occupations in each industry that were involved in the origin of each export commodity or service. The next step was to calculate for each industry the percentage of the province's 2001 labour force in these occupations in each of the ten regions of the province. The occupational percentages for each industry were then applied to the dollar value of 2001 international *and* inter-provincial exports for each industry (i.e., the NAICS classification of exports by value) to allocate the value of exports to each region of origin. Finally, these dollar values were summed to identify the total value of exports of each major type that originated in each region.

The spatial allocation process can be illustrated by consideration of the total 2001 oil and gas industry exports of \$2.98 billion that are part of the \$6.9 billion fuels, oils, bituminous substances, and electricity export total. In the province as a whole there were 1,755 people employed in this industry in 2001 (Table 4). Of these, a total of 560 (32 percent) were in the occupations of "labourers and occupations unique to primary production, excluding farming", a grouping that would include people directly living within the regions that are the spatial origin of oil and gas exports. In turn while oil and gas industry workers in other occupations (such as head office workers) may also reside in these regions, this is may not necessarily the case.

As might be anticipated, the majority of these industry specific tradesmen (340 out of 560, 60.7 percent) reside in the Northeast Region, a validation of the general approach of using place of residence by occupation to locate the origins of the province's economic base. Having said this, with virtually all of the province's oil and gas wells located in this region, the fact that only 61 percent of workers in these occupations in the industry live in the region also indicate the shortcomings of the methodology. There are no producing oil and gas wells in the Okanagan Basin or the Lower Mainland, but they are home to 14.3 and 2.7 percent of the province's oil and gas industry specific tradesmen respectively.

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Table Four

Occupation	Total Employment	Management	Administration	Technical & Professional Occupations	Health, Culture, & Social Service Occupations	Tourism & Sales	Trades, Transportation Equipment Operators, & Manufacturing Processors	Labourers & Occupations Unique to Primary Production, excluding farming	Share of Province's Total Tradesmen & Labourers	Total 2001 Oil & Gas Exports
Region										
Kootenays	85	20	10	0	0	0	30	25	4.5%	\$ 133,246,371
Okanagan Basin	195	20	20	20	10	0	45	80	14.3%	\$ 426,388,386
Sunshine to Rockies	120	15	0	10	0	0	45	50	8.9%	\$ 266,492,741
Lower Mainland	210	50	30	60	10	0	45	15	2.7%	\$ 79,947,822
Capital	30	0	0	20	0	0	10	0	0.0%	\$ -
South Coast & Island	65	0	10	0	0	0	40	15	2.7%	\$ 79,947,822
Cariboo	45	0	0	0	0	0	20	25	4.5%	\$ 133,246,371
North Coast	0	0	0	0	0	0	0	0	0.0%	\$ -
Nechako	10	0	0	0	0	0	0	10	1.8%	\$ 53,298,548
Northeast	995	55	80	75	10	10	425	340	60.7%	\$ 1,812,150,640
British Columbia	1755	160	150	185	30	10	660	560	100.0%	\$ 2,984,718,702

The next step in the allocation process is to multiply each region's share of the industry specific occupations most associated with the origins of the industry's exports to the total exports to estimate each region's contribution to the provincial total. Thus the Northeast is identified as the source of \$1.8 billion in oil and gas exports in 2001 (60.7 percent of the \$2.98 billion total), while the Okanagan Basin is allocated \$426 million (14.3 percent) and the Lower Mainland \$79 million (2.7 percent). Although it is tempting to allocate all of the revenue to the Northeast, it was decided that the value of the consistency of using the same approach for all sectors outweighed the greater degree of specificity that use of unique approaches for each sector. While this tends to overstate the role of metropolitan and non-metropolitan southern regions, in natural resource exporting, this bias was accepted. Electricity exports were the exception to this rule and were allocated based on regional generation capacity statistics as per BC Hydro's generation database.

Again, it bears repeating that occupations listed as most closely identifying with the spatial origin of oil and gas exports do not include value-adding activities such as management that may have a larger share of the industry's labour force in metropolitan regions. As discussed earlier, these labour force participants are not included, as the objective of this research is to identify the origins of the exports (the "first dollar") which, in this case, are the oil and gas deposits located in the non-metropolitan regions of the province.

Clearly this spatial allocation approach is indicative rather than exact. For example, when examining service exports, the spending in the Lower Mainland of a traveler from Seattle passing through this metropolitan region on their way to Okanagan, or of a Vancouver-bound tourist from Calgary over-nighting in Kamloops, should be allocated to the region (the Okanagan and the Lower Mainland, respectively) that generates the travel, not one that merely benefits from it. No data currently exist to carry out this level of analysis, and hence the existence of such situations can only be noted as points of further refinement of the analysis.

V. SPATIAL ORIGINS OF BRITISH COLUMBIA'S ECONOMIC BASE

A. Analytical Results

Applying this methodology to each of the industry sectors at the level of aggregation where data exists for both employment and exports results in an estimate of the dollar value of exports, both international and inter-provincial, generated in each region of the province for 2001, as shown in detailed form in Table Five (found on the following page).

This Table shows the dollar value of total goods exports from each detailed sector in each region based on the region's share of the "origin" linked occupations in that industry. These are aggregated to the major sectors considered in the report, as well as to the total estimated value of all goods exports for the each region.

Service sector exports were allocated to regions using the same methodology of identifying the "contact" occupations that directly deliver exported services (the chefs and the servers in restaurants, the guides in tourism, the cleaners in hotels, professors and teachers, cashiers and sales clerks in retail, camera operators in film production) but not considering senior management, administrators, police and security guards, dentists or day care workers. Each region's share of the province's total employment in these service delivery occupations is applied to the total export of services to provide an estimate of the region's export of services. Estimated regional exports of goods and services are then summed, and presented in Table Five, together with both their share of the provincial total, and each region's total exports per resident in that region.

URBAN FUTURES

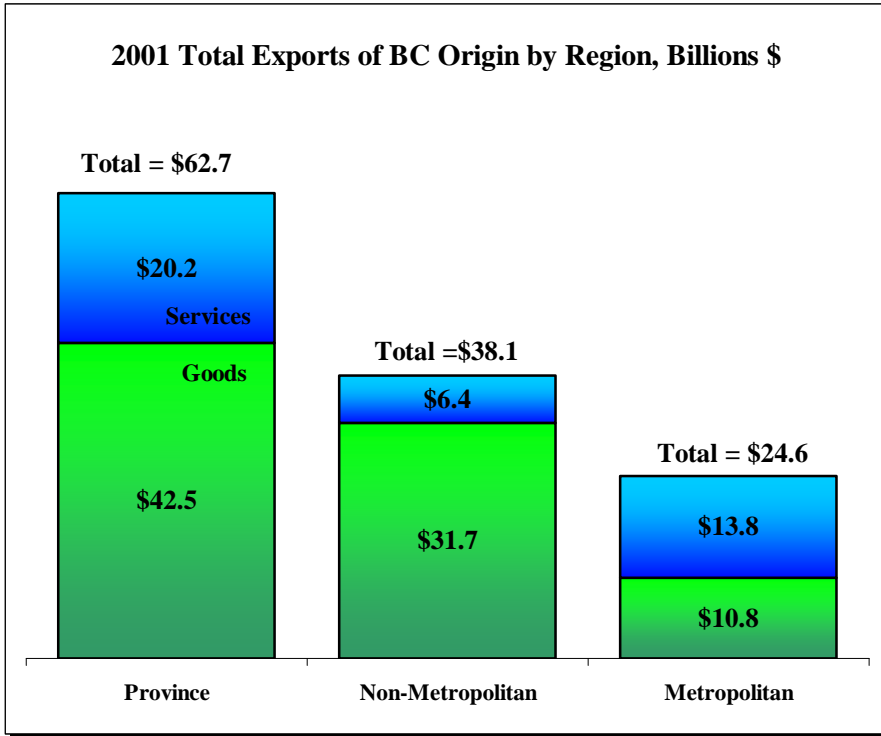
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Table Five:
2001 Estimated Total Exports From British Columbia By Sector and Region

Value of sectoral exports in millions \$	Kootenays	Okanagan Basin	Sunshine to Rockies	South Coast and Island	Cariboo	North Coast	Nechako	Northeast	Non-metropolitan	Lower Mainland	Capital	Metropolitan	BC Total
Forestry	\$1,831	\$1,203	\$2,614	\$5,589	\$3,497	\$1,021	\$1,516	\$598	\$17,869	\$1,798	\$198	\$1,996	\$19,865
NAICS 113 - Forestry & Logging	\$49	\$32	\$71	\$165	\$93	\$29	\$30	\$16	\$484	\$41	\$6	\$47	\$531
NAICS 3211 - Sawmills & Wood Preservation	\$907	\$587	\$1,289	\$2,775	\$1,724	\$508	\$756	\$295	\$8,840	\$745	\$94	\$839	\$9,679
NAICS 3212 - Veneer, Plywood & Engineered Wood Product Manufactu	\$138	\$89	\$195	\$421	\$262	\$77	\$115	\$45	\$1,341	\$113	\$14	\$127	\$1,468
NAICS 3219 - Other Wood Product Manufacturing	\$42	\$39	\$63	\$100	\$97	\$17	\$39	\$16	\$414	\$127	\$4	\$131	\$546
NAICS 3221 - Pulp, Paper & Paperboard Mills	\$685	\$443	\$973	\$2,096	\$1,302	\$383	\$571	\$223	\$6,676	\$563	\$71	\$633	\$7,309
NAICS 3222 - Converted Paper Product Manufacturing	\$7	\$4	\$9	\$25	\$14	\$5	\$4	\$2	\$70	\$12	\$1	\$13	\$82
NAICS 323 - Printing & Related Support Activities	\$4	\$11	\$13	\$7	\$5	\$2	\$0	\$1	\$42	\$198	\$9	\$206	\$249
Forestry Support Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$0	\$0	\$0	\$1
Agriculture, Fishing, Hunting and Trapping	\$144	\$466	\$252	\$462	\$169	\$73	\$63	\$139	\$1,768	\$1,412	\$134	\$1,546	\$3,315
Agriculture	\$63	\$206	\$102	\$120	\$74	\$6	\$28	\$61	\$660	\$573	\$41	\$614	\$1,274
Agricultural Support Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2	\$1	\$0	\$1	\$2
NAICS 114 - Fishing, Hunting & Trapping	\$2	\$2	\$15	\$115	\$2	\$36	\$1	\$1	\$173	\$78	\$25	\$102	\$275
NAICS 311 - Food Manufacturing	\$73	\$237	\$126	\$216	\$86	\$31	\$32	\$71	\$872	\$707	\$64	\$772	\$1,644
NAICS 312 - Beverage & Tobacco Product Manufacturing	\$6	\$19	\$9	\$12	\$7	\$1	\$2	\$5	\$61	\$54	\$4	\$58	\$119
Mining	\$1,504	\$189	\$362	\$444	\$110	\$463	\$199	\$212	\$3,482	\$1,177	\$73	\$1,250	\$4,732
NAICS 212 - Mining (except Oil & Gas)	\$1,183	\$87	\$333	\$398	\$98	\$33	\$196	\$207	\$2,535	\$142	\$44	\$185	\$2,720
NAICS 331 - Primary Metal Manufacturing	\$304	\$52	\$20	\$23	\$0	\$431	\$0	\$0	\$830	\$537	\$6	\$543	\$1,372
NAICS 332 - Fabricated Metal Product Manufacturing	\$16	\$50	\$9	\$23	\$12	\$0	\$2	\$5	\$118	\$498	\$23	\$522	\$639
Energy	\$501	\$540	\$1,495	\$282	\$201	\$33	\$81	\$3,127	\$6,262	\$430	\$2	\$432	\$6,694
NAICS 211 - Oil & Gas Extraction	\$165	\$528	\$330	\$99	\$165	\$0	\$66	\$2,245	\$3,598	\$99	\$0	\$99	\$3,697
NAICS 2211 - Electric Power Generation, Transmission & Distribution	\$317	\$0	\$1,139	\$127	\$1	\$22	\$0	\$877	\$2,482	\$316	\$0	\$316	\$2,798
NAICS 324 - Petroleum & Coal Products Manufacturing	\$19	\$12	\$26	\$57	\$35	\$10	\$15	\$6	\$181	\$15	\$2	\$17	\$198
												\$0	\$0
Machinery	\$3	\$15	\$7	\$6	\$4	\$1	\$0	\$2	\$37	\$361	\$8	\$369	\$407
NAICS 313 - Textile Mills	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6	\$0	\$6	\$7
NAICS 314 - Textile Product Mills	\$0	\$1	\$1	\$0	\$0	\$0	\$0	\$0	\$3	\$32	\$1	\$33	\$35
NAICS 315 - Clothing Manufacturing	\$2	\$10	\$5	\$3	\$2	\$1	\$0	\$1	\$24	\$311	\$6	\$318	\$342
NAICS 316 - Leather & Allied Product Manufacturing	\$1	\$3	\$2	\$2	\$1	\$0	\$0	\$1	\$10	\$11	\$1	\$12	\$22
Miscellaneous manufacturing	\$214	\$1,084	\$233	\$290	\$175	\$95	\$81	\$118	\$2,289	\$4,683	\$557	\$5,240	\$7,530
NAICS 333 - Machinery Manufacturing	\$0	\$486	\$41	\$51	\$30	\$0	\$0	\$10	\$618	\$1,049	\$157	\$1,206	\$1,824
NAICS 334 - Computer & Electronic Product Manufacturing	\$98	\$25	\$0	\$8	\$8	\$0	\$0	\$0	\$139	\$997	\$82	\$1,079	\$1,218
NAICS 335 - Electrical Equipment, Appliance & Component Manufactur	\$0	\$8	\$8	\$17	\$0	\$0	\$0	\$0	\$34	\$545	\$47	\$592	\$626
NAICS 336 - Transportation Equipment Manufacturing	\$7	\$243	\$35	\$66	\$3	\$0	\$0	\$3	\$358	\$660	\$129	\$789	\$1,146
NAICS 325 - Chemical Manufacturing	\$69	\$69	\$89	\$69	\$89	\$89	\$69	\$89	\$635	\$337	\$69	\$407	\$1,041
NAICS 326 - Plastics & Rubber Products Manufacturing	\$3	\$55	\$8	\$3	\$0	\$0	\$0	\$0	\$68	\$459	\$22	\$480	\$548
NAICS 327 - Non-Metallic Mineral Product Manufacturing	\$14	\$138	\$14	\$20	\$10	\$0	\$0	\$0	\$195	\$326	\$24	\$350	\$545
NAICS 337 - Furniture & Related Product Manufacturing	\$18	\$40	\$28	\$40	\$27	\$5	\$11	\$13	\$183	\$104	\$8	\$112	\$295
NAICS 339 - Miscellaneous Manufacturing	\$4	\$21	\$10	\$16	\$7	\$0	\$0	\$3	\$60	\$207	\$19	\$226	\$286
Total Goods Exports	\$4,196	\$3,497	\$4,963	\$7,074	\$4,156	\$1,686	\$1,940	\$4,196	\$31,708	\$9,862	\$972	\$10,834	\$42,542
Share of Total Goods Exports	10%	8%	12%	17%	10%	4%	5%	10%	75%	23%	2%	25%	100%
Total Services Exports	\$697	\$1,318	\$1,193	\$1,685	\$802	\$269	\$161	\$272	\$6,396	\$11,896	\$1,870	\$13,766	\$20,162
Share of Total Services Exports	3%	7%	6%	8%	4%	1%	1%	1%	32%	59%	9%	68%	100%
Total Exports	\$4,893	\$4,815	\$6,156	\$8,759	\$4,957	\$1,955	\$2,100	\$4,468	\$38,104	\$21,758	\$2,843	\$24,600	\$62,704
Share of Total Exports	8%	8%	10%	14%	8%	3%	3%	7%	61%	35%	5%	39%	100%
Total Population (millions)	0.145	0.298	0.226	0.362	0.161	0.063	0.042	0.061	1.357	2.225	0.326	2.550	3.908
Share of Total Population	4%	8%	6%	9%	4%	2%	1%	2%	35%	57%	8%	65%	100%
Total Exports per Capita	\$33,712	\$16,180	\$27,231	\$24,185	\$30,794	\$31,247	\$49,806	\$73,492	\$28,070	\$9,781	\$8,726	\$9,646	\$16,046
Total Exports per Capita as Percent of Provincial Average	210%	101%	170%	151%	192%	195%	310%	458%	175%	61%	54%	60%	100%
Exports from rural resource extraction & primary processing	\$3,855	\$2,065	\$4,530	\$6,439	\$3,819	\$1,542	\$1,802	\$3,986	\$28,037	\$3,333	\$304	\$3,637	\$31,674
As a percent of a total exports	79%	43%	74%	74%	77%	79%	86%	89%	74%	15%	11%	15%	51%

Figure 12

B. A Natural Resource Dependent Province: Geography and Exports

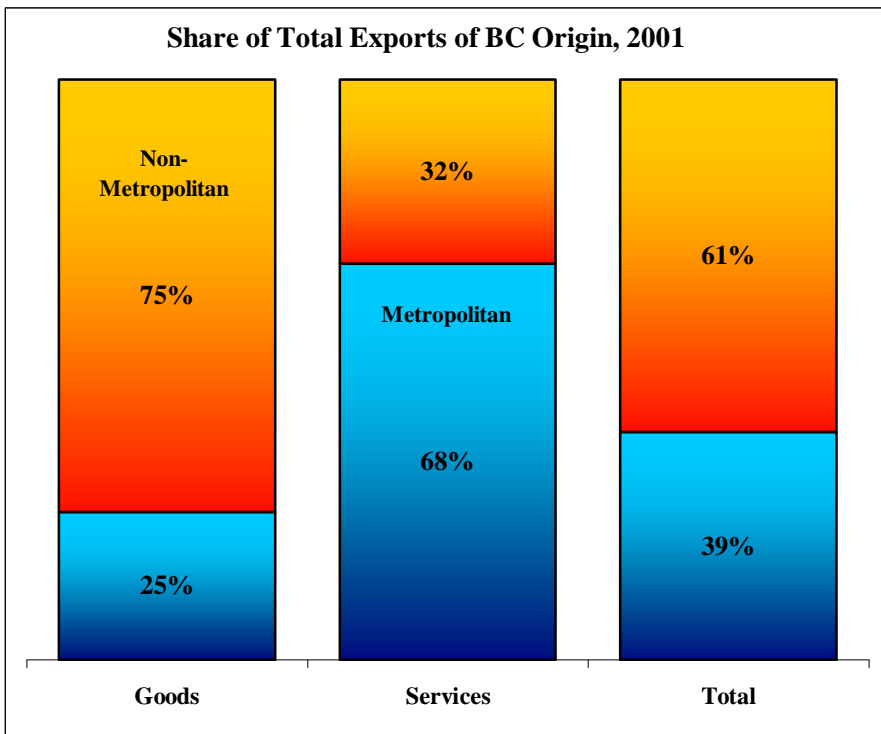


The result of this analysis is an estimate that non-metropolitan areas of the province, with 35 percent of the population, are the origins of 61 percent of the province's total exports, contributing 75 percent of provincial exports of goods and 25 percent of its exports of services.

Of a total 2001 export value of \$62.7 billion, \$38.1 billion originated in non-metropolitan areas and \$24.6 billion in metropolitan areas (Figure 12). Non-metropolitan areas were primarily the

origins of goods exports, which accounted for \$31.7 billion of their 38.1 billion in total exports (equivalent to 83 percent of the value of all exports originating in non-metro regions). Having said this, non-metropolitan regions are also the origins of \$6.4 billion in services exports, a third of all of the province's services exports (Figure 13).

Figure 13



Metropolitan areas, in contrast, are predominantly the origins of the exports of services, with their \$13.9 billion in services exports in 2001 accounting for 56 percent of their total exports, and two-thirds of the province's exports of services. Goods account for only 44 percent of exports originating in metropolitan areas: this \$10.8 billion goods exports accounted for a quarter of the values of the provinces export of goods.

This allocation deals with exports from metropolitan areas as geographical entities, not from metropolitan activities per se. Readers will have noted from Table Five that the allocation process results in oil and gas exports from the Lower Mainland of \$99 million in 2001 in spite of the fact that there are no oil or gas wells in the Lower Mainland, and that farming, fishing and mining, (which add \$1.5 billion in value to the Lower Mainland's exports) while being activities located to the metropolitan region in this analysis, they are rural and resource activities, not the "metropolitan activities" that justify any talk of metropolitan regions as "the" engines of economic growth. Having such activities occurring in metropolitan regions simply increases the metropolitan region's resource dependency above that indicated by the spatial allocation methodology used here.

Table Six:

2001 Estimated British Columbia Exports From Rural Resource Extraction & Primary Processing

Value of sectoral exports in millions \$	Kootenays	Okanagan Basin	Sunshine to Rockies	South Coast and Island	Cariboo	North Coast	Nechako	Northeast	Non-metropolitan	Lower Mainland	Capital	Metropolitan	BC Total
Forestry	\$1,821	\$1,189	\$2,592	\$5,557	\$3,478	\$1,014	\$1,511	\$595	\$17,757	\$1,589	\$188	\$1,777	\$19,534
NAICS 113 - Forestry & Logging	\$49	\$32	\$71	\$165	\$93	\$29	\$30	\$16	\$484	\$41	\$6	\$47	\$531
NAICS 3211 - Sawmills & Wood Preservation	\$907	\$587	\$1,289	\$2,775	\$1,724	\$508	\$756	\$295	\$8,840	\$745	\$94	\$839	\$9,679
NAICS 3212 - Veneer, Plywood & Engineered Wood Product Manufactu	\$138	\$89	\$195	\$421	\$262	\$77	\$115	\$45	\$1,341	\$113	\$14	\$127	\$1,468
NAICS 3219 - Other Wood Product Manufacturing	\$42	\$39	\$63	\$100	\$97	\$17	\$39	\$16	\$414	\$127	\$4	\$131	\$546
NAICS 3221 - Pulp, Paper & Paperboard Mills	\$685	\$443	\$973	\$2,096	\$1,302	\$383	\$571	\$223	\$6,676	\$563	\$71	\$633	\$7,309
Forestry Support Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$0	\$0	\$0	\$1
Agriculture, Fishing, Hunting and Trapping	\$65	\$209	\$117	\$235	\$76	\$42	\$29	\$63	\$835	\$651	\$66	\$717	\$1,552
Agriculture	\$63	\$206	\$102	\$120	\$74	\$6	\$28	\$61	\$660	\$573	\$41	\$614	\$1,274
Agricultural Support Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2	\$1	\$0	\$1	\$2
NAICS 114 - Fishing, Hunting & Trapping	\$2	\$2	\$15	\$115	\$2	\$36	\$1	\$1	\$173	\$78	\$25	\$102	\$275
Mining	\$1,487	\$139	\$353	\$421	\$98	\$463	\$196	\$207	\$3,365	\$679	\$49	\$728	\$4,093
NAICS 212 - Mining (except Oil & Gas)	\$1,183	\$87	\$333	\$398	\$98	\$33	\$196	\$207	\$2,535	\$142	\$44	\$185	\$2,720
NAICS 331 - Primary Metal Manufacturing	\$304	\$52	\$20	\$23	\$0	\$431	\$0	\$0	\$830	\$537	\$6	\$543	\$1,372
Energy	\$482	\$528	\$1,469	\$226	\$166	\$22	\$66	\$3,121	\$6,081	\$415	\$0	\$415	\$6,496
NAICS 211 - Oil & Gas Extraction	\$165	\$528	\$330	\$99	\$165	\$0	\$66	\$2,245	\$3,598	\$99	\$0	\$99	\$3,697
NAICS 2211 - Electric Power Generation, Transmission & Distribution	\$317	\$0	\$1,139	\$127	\$1	\$22	\$0	\$877	\$2,482	\$316	\$0	\$316	\$2,798
Exports from rural, resource extraction & primary processing	\$3,855	\$2,065	\$4,530	\$6,439	\$3,819	\$1,542	\$1,802	\$3,986	\$28,037	\$3,333	\$304	\$3,637	\$31,674
Total Exports	\$4,893	\$4,815	\$6,156	\$8,759	\$4,957	\$1,955	\$2,100	\$4,468	\$38,104	\$21,758	\$2,843	\$24,600	\$62,704
As a percent of each region's total exports	79%	43%	74%	74%	77%	79%	86%	89%	74%	15%	11%	15%	51%
Region's share as a percent of province's total exports	6%	3%	7%	10%	6%	2%	3%	6%	45%	5%	0%	6%	51%
Total Exports minus rural, resource extraction & primary processing	\$1,038	\$2,750	\$1,626	\$2,320	\$1,139	\$413	\$298	\$482	\$10,067	\$18,424	\$2,539	\$20,963	\$31,030
Region's share as a percent of province's total exports	2%	4%	3%	4%	2%	1%	0%	1%	16%	29%	4%	33%	49%

One approach to measuring direct dependency on resource related activities is to tabulate the value of goods exports from industries directly involved in these activities, considering only the harvesting, extraction and primary processing of natural resources, taking into account the exports by the fishing and farming industries, but not the food processing industry. Table Six shows the implications of this direct approach, with the extraction related activities in each sector (net of advanced processing such as printing or fabricating) accounting for 51 percent of the province's total exports. With the exception of the Okanagan Basin and the two metropolitan regions, between 74 and 89 percent of the exports of each of the regions in the province are extraction related activities. Even in

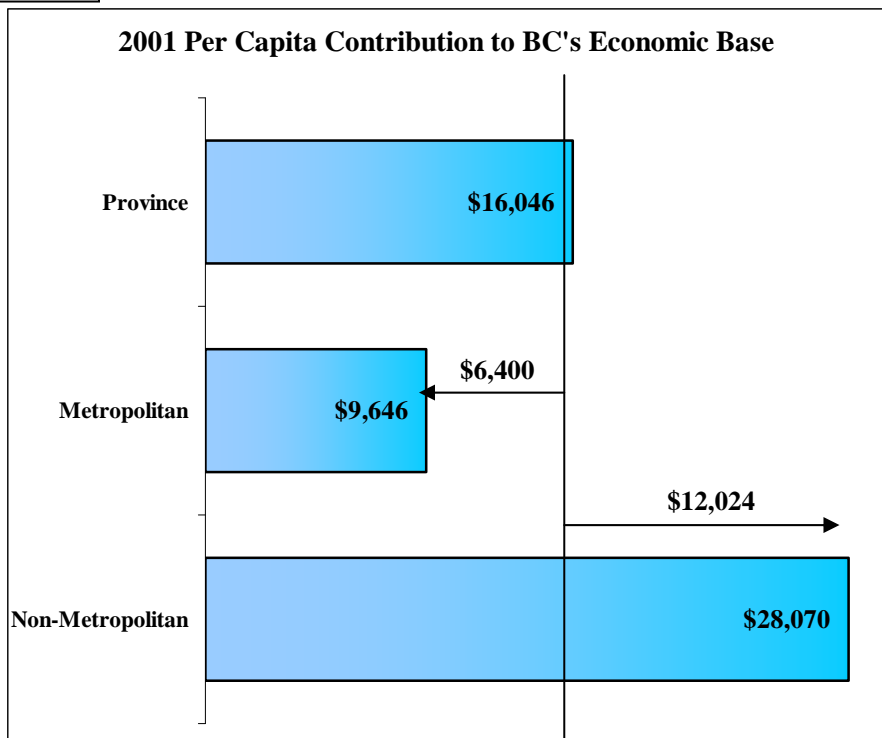
the case of the exceptions, they account for 43 percent of the Okanagan Basin’s total exports and 15 percent of the exports of metropolitan regions.

Subtracting the total value of the exports produced by these primary resource activities that are located in metropolitan regions provides a measure of the significant, but relatively minor **one-third** contribution of metropolitan activities located in metropolitan areas to the province’s economic base.

British Columbia and its residents, its businesses, its health and education spending are overwhelmingly dependent upon rural and resource activities, with **two-thirds** of the province’s economic base coming from activities located outside its two metropolitan regions and from primary resource activities that are coincidentally located in metropolitan regions. Like it or not, **two-thirds** of the large double doubles and grande decaf soy lattes consumed in the province are ultimately paid for by non-metropolitan activities.

For the sake of simplicity, and having identified the direct contribution of resource extraction and primary processing activities that may be located in metropolitan areas to these areas’ exports, comparison of the contributions of regions to the province’s income here will be limited to the geographical origins using the allocational model. To provide a summary of the relative contribution, it is useful to compare the region’s contribution to the provincial export income to its resident population.

Figure 14



As an average, in 2001 there was an average of \$16,046 dollars of inter-provincial and international exports per person living in British Columbia. With the majority of its residents living in metropolitan regions but the majority of its exports coming from non-metropolitan regions, a noticeable gap between the \$9,646 per capita of exports originating in metropolitan regions and the \$28,070 per capita of exports originating in non-metropolitan regions is evident (Figure 14).

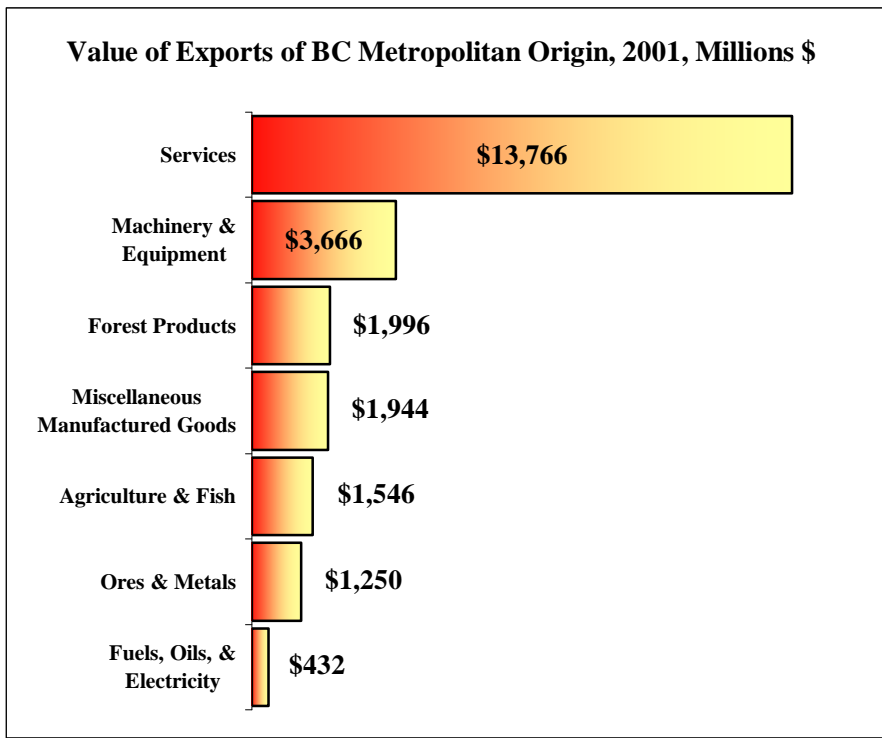
This clearly indicates the dependency of the provincial economic base on the resources that originate in its non-metropolitan areas.

If the metropolitan and non-metropolitan regions were separate jurisdictions, the non-metropolitan zones would have \$28,070 in total (international and inter-provincial) per capita export income and the metropolitan zones would have only \$9,646. Analysis of trade between these metropolitan and non-metropolitan zones would then demonstrate the degree to which the metropolitan regions were dependent upon the natural resource activities of the rest of the province. The use of the measure of per capita exports by region does not mean that the residents of non-metropolitan regions are more productive, or more important, than those living in metropolitan regions; however, it does mean that relative to the size of their population, the non-metropolitan regions are more directly engaged in the base of economic activities that supports all of the province's residents.

C. Composition of Contributions of Metropolitan and Non-metropolitan Regions

The single largest component of exports originating in the metropolitan region (Figure 15) was services, which contributed \$13.8 billion to the province's economic base in 2001, accounting for 56 percent of the total estimated exports of metropolitan regions. Second in importance was the broad category of machinery and equipment (boilers, machinery, and electrical and transportation equipment and products), which generated

Figure 15



\$3.7 billion in export revenue, 15 percent of the metropolitan area's total of \$24.6 billion.

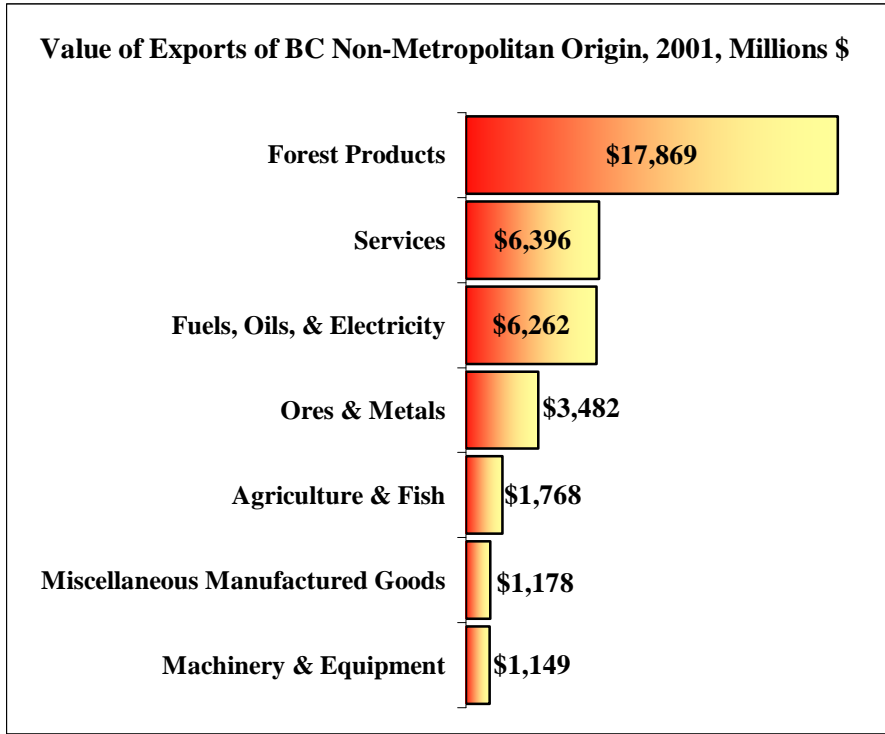
Forest product exports (wood, pulp, paper, and products thereof) came in third with \$2.0 billion, amounting to 8 percent of the metropolitan area's export output. (In the strictest sense of the objectives of this research, these exports are non-metropolitan activities; they are allocated to metropolitan regions as a result of using the place of residence of people in forestry occupations who live in metropolitan

regions but work elsewhere, of people with forestry occupations who live in metropolitan regions but add value to forest products with non-metropolitan origins, and, in a very minor sense, the limited forestry activities that occur in metropolitan areas. As current methodology does not provide any way to adjust for these factors, these exports are left as being of metropolitan origin.)

In the case of the export of agricultural and fish products (\$1.5 billion, 6 percent of total metropolitan exports), it is important to note that a significant portion of these exports come from metropolitan regions. The remaining 15 percent of exports originating in metropolitan regions were comprised of various manufactured and processed products.

The distribution of commodities in non-metropolitan regional exports (Figure 16) is quite different from those that make up metropolitan regional exports: the value of forest products originating outside of the province's three metropolitan regions - \$17.9 billion (47 percent of the total exports from non-metropolitan areas of \$38.1 billion) is, in itself,

Figure 16



almost two-thirds of the value of the metropolitan region's total value of exports. The second largest component of the non-metropolitan regions' exports was service exports (\$6.4 billion, 17 percent), followed by fuels, oils and electricity products (\$6.3 billion, 16 percent) in third place.

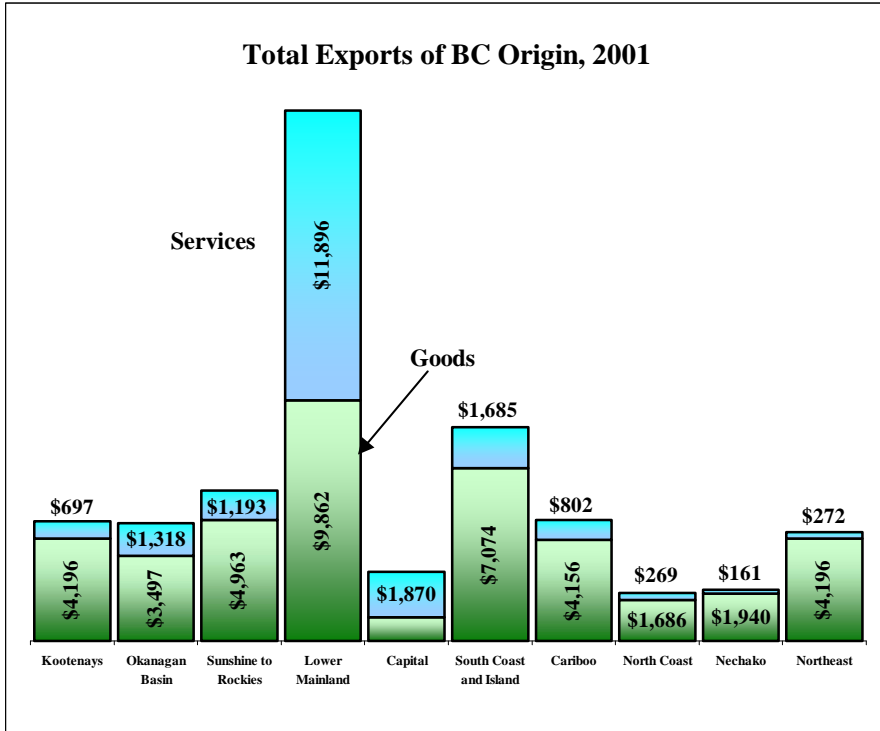
The fourth largest source of non-metropolitan regional export revenue was the mining (ores and metals) category (\$3.5 billion, 9 percent), followed by agriculture and fish (\$1.8 billion, 5 percent), miscellaneous

manufactured goods (\$1.2 billion, 3 percent), and machinery and equipment (\$1.1 billion, 3 percent).

D. Overview of the Regional Distribution of BC's Economic Base

The Lower Mainland stands out as the single largest contributor to BC's economic base; in fact, no other single region's total exports of goods and services even matches the Lower Mainland's value of goods exports of \$9.9 billion, let alone its additional \$11.9 billion in service exports (Figure 17).

Figure 17

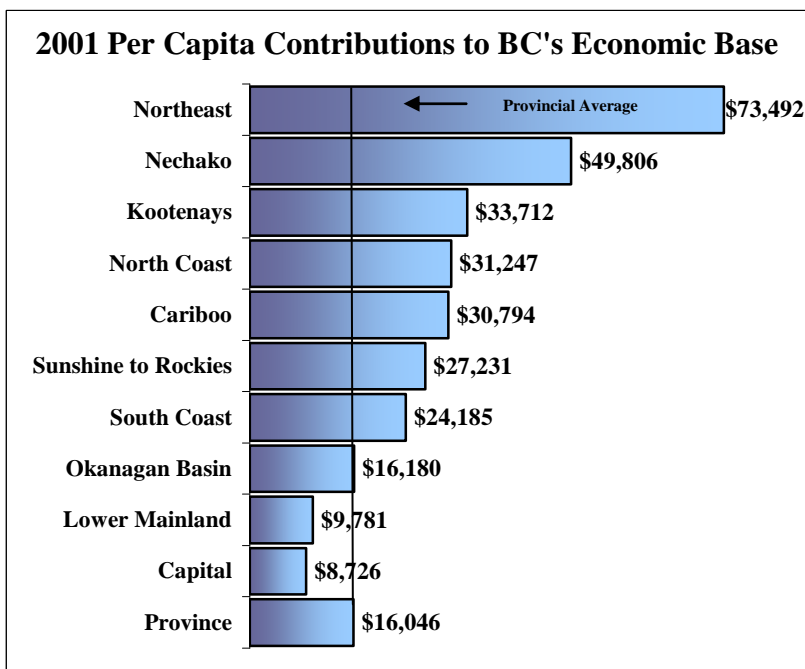


Outside of the Lower Mainland and Capital regions, exports are heavily weighted on the goods side as a result of the natural resource endowments located in the rest of the province. The three northern-most regions in the Province – the North Coast, Nechako, and the Northeast – rely the most heavily of all the regions on goods exports, which account for 86 percent, 92 percent, and 94 percent of the value of their total exports, respectively. It should also be noted that the Capital region, with the third

smallest average annual aggregate contribution to BC’s economic base, exports very little in the way of goods – only 34 percent of all its exports, by value, are goods-related.

Having stated this, when adjustments are made for the province’s population distribution (using 2001 Census data), a significantly different picture emerges. Perhaps the most glaring difference between the aggregate and per capita contributions of each region

Figure 18



comes courtesy of the Lower Mainland. While exporting almost three times as much by total value as any other region in the province, its per capita contribution was well below the provincial average of \$16,046, making it the second-most dependent region in the province on the export income earned in other regions (Figure 18).

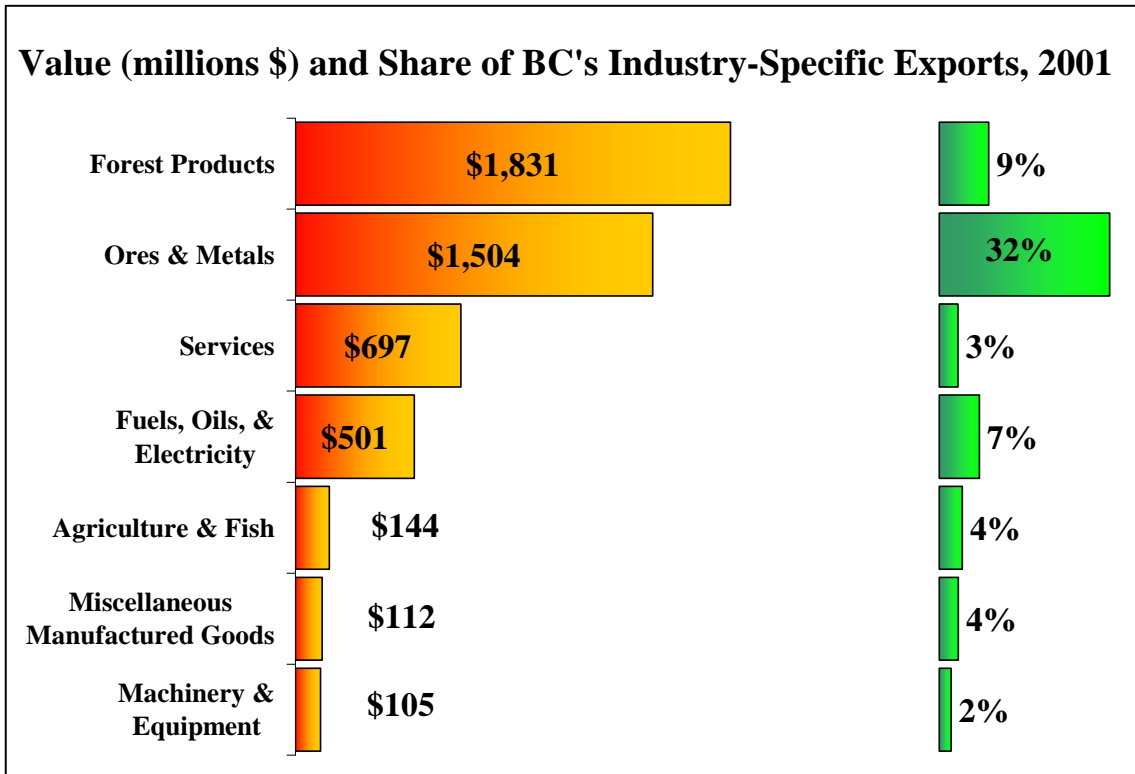
In contrast, the Northeast, with 47 percent of all the energy exports in BC, earned \$73,492 per person; this was \$63,711 more than the Lower Mainland and \$64,766 more than the Capital region. In fact, the only two

regions in the entire province that did not pull their weight in terms of per capita contributions to BC's economic base were the province's two metropolitan regions. This means that these two regions are relatively much more dependent on economic activity originating in other regions of the province.

Ranking second in per capita contributions was Nechako with \$49,806 in per capita export earnings, followed in third by the Kootenays with \$33,712, the North Coast region (\$31,247) in fourth, and the Cariboo with \$30,794, in fifth. The Sunshine to Rockies and South Coast and Island regions, with \$27,231 and \$24,185 in per capita earnings, respectively, still earned substantially more than the provincial average, while the Okanagan Basin contributed slightly more than its proportional share to the province's economic base, with average annual per capita earnings of \$16,180.

VI. CONTRIBUTION OF INDIVIDUAL REGIONS TO BC'S ECONOMIC BASE

A. Kootenays



**Share of BC's
Population: 3.7%**

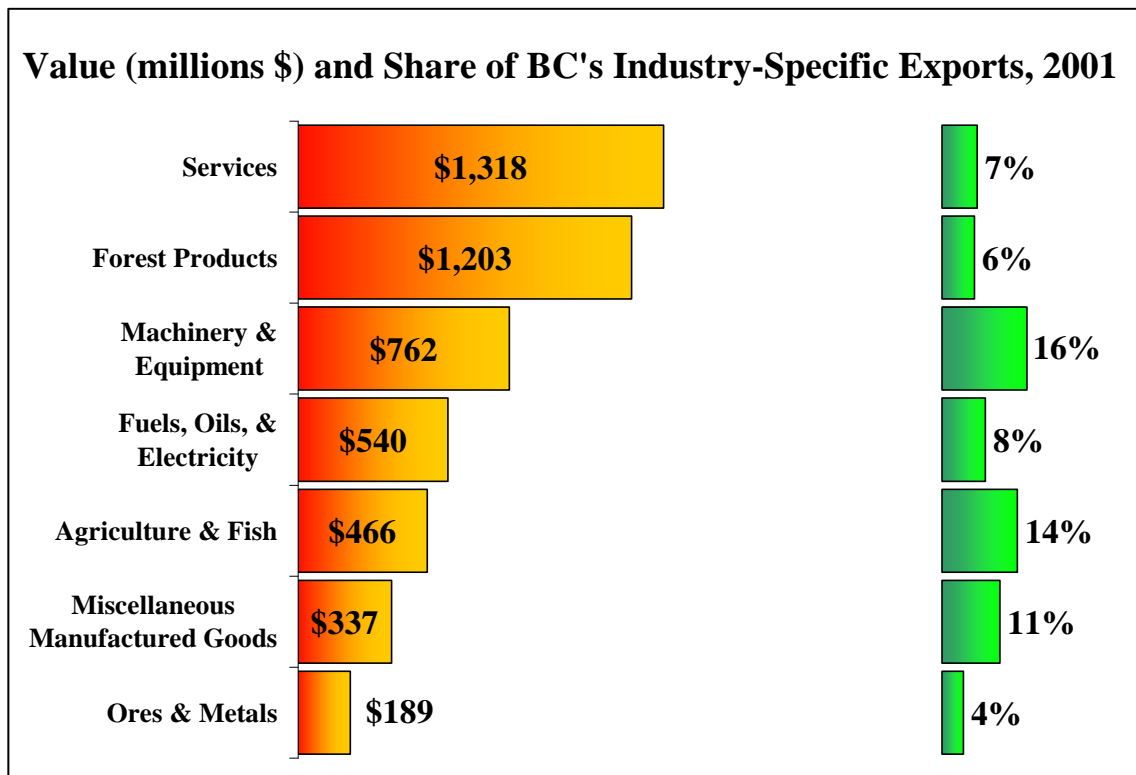
**Share of BC's
Economic Base: 7.8%**

The largest component of the Kootenays' economic base is forest product exports, which generated \$1.8 billion in export revenue in 2001, or 9 percent of BC's total exports of forest products. In second place were exports of ores and metals, worth over \$1.5 billion and accounting for a 32 percent share of the province-wide industry total. Ranking third and fourth were the service (\$697 million in exports; 3 percent of the industry total) and fuel, oil and electricity (\$501 million; 7 percent) sectors, respectively. Agriculture and fish exports came in fifth, with \$144 million in exports, representing 4 percent of total export value, while miscellaneous manufactured product exports rank sixth (\$112 million, 4 percent). Lastly, exports from the machinery and equipment category generated \$105 million (2 percent) for BC's economic base.

Ores and metals exports from the Kootenays in 2001 generated \$1.5 billion in income - 32% of the industry total

The Kootenays more than pulled its per capita weight in terms of export earnings with a total of \$33,712 export value generated per person (based on population counts from the 2001 Census), versus the \$16,046 provincial average.

B. Okanagan Basin



**Share of BC's
Population: 7.6%**

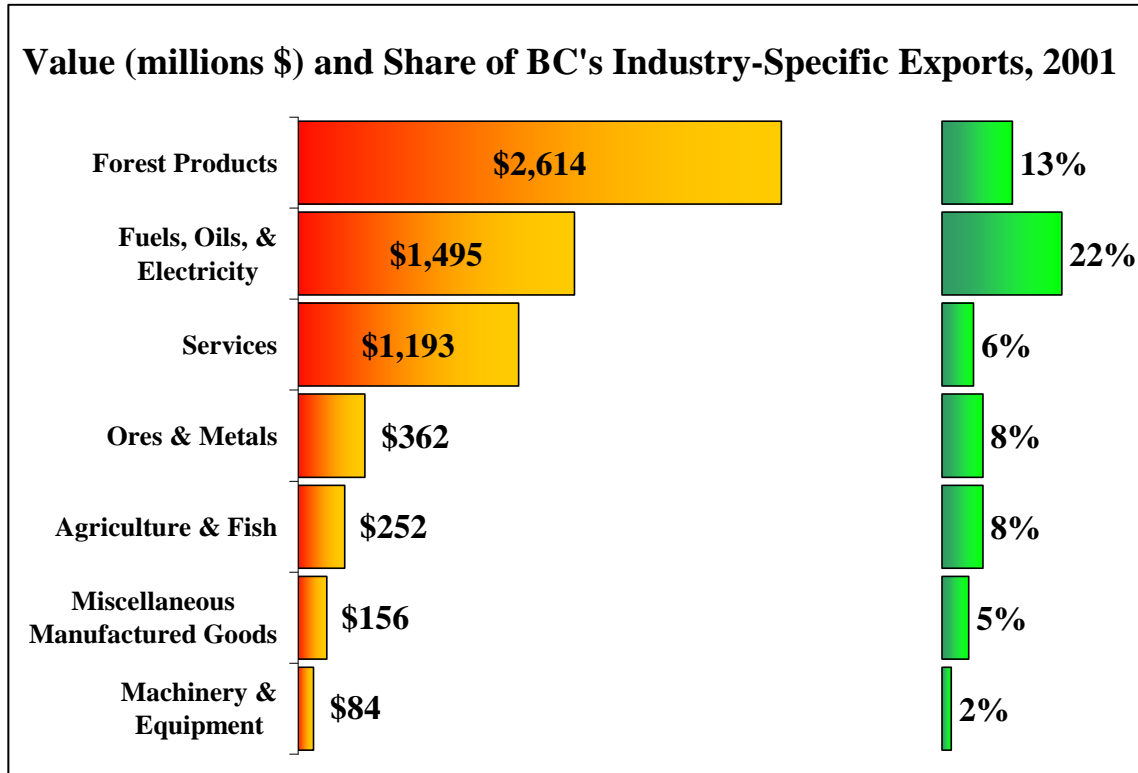
**Share of BC's
Economic Base: 7.7%**

The Okanagan Basin is a major exporter of both services and forest products, which generated \$1.3 billion (7 percent of the province-wide industry total) and \$1.2 billion (6 percent), respectively. With a 16 percent share of the BC machinery and equipment export market, exports originating from the region totalled \$762 million; fuels, oils and electricity exports came in fourth at \$540 million (8 percent of all the province's exports); agriculture and fish product exports ranked fifth (\$466 million, 14 percent), due mainly to the abundance of vineyards and fruit production in the region; and in sixth came exports of miscellaneous manufactured goods (\$337 million, 11 percent). Finally, the region exported \$189 million worth of ores and metals products, accounting for 4 percent of all such exports originating in BC.

Service and forest product exports from the Okanagan Basin brought in over \$2.5 billion for the province.

At \$16,180 in per capita income generated in the region, the Okanagan Basin contributed slightly more than the provincial average to BC's economic base.

C. Sunshine to Rockies



**Share of BC's
Population: 5.8%**

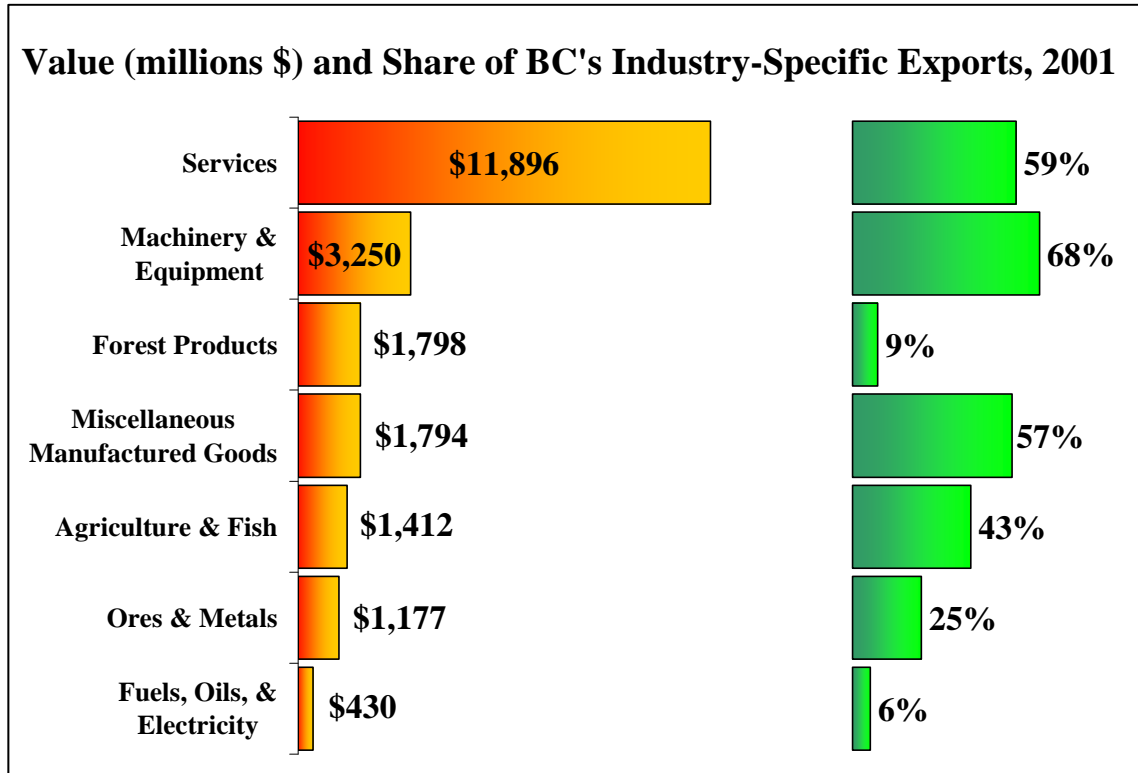
**Share of BC's
Economic Base: 9.8%**

Not surprisingly, the value of forest products exports top all other industries' in the Sunshine Coast to Rockies region, working out to an annual average of \$2.6 billion, or 13 percent of all BC forest products exports, second only to the Northeast. Fuels, oils and electricity exports from this region (in which 40 percent of the province's hydroelectric power-generation capacity is located) totalled \$1.5 billion (22 percent), and in third came service exports, at \$1.2 billion (6 percent). Ranking fourth was the ores and metals category, from which \$362 million (8 percent) worth of exports originated in this region. With annual contributions of \$252 million (8 percent), agricultural and fish product exports ranked fifth, ahead of the sixth place category comprising miscellaneous manufactured goods exports, which generated \$156 million (5 percent), while exports of machinery and equipment totalled \$84 million (2 percent) in 2001.

*The region
accounted for 22% of
the BC's energy
exports, earning \$1.5
billion for the
province in 2001*

On a per capita basis, the region generated \$27,231 in annual income over the period, \$11,185 more than the provincial average of \$16,646.

D. Lower Mainland



**Share of BC's
Population: 56.9%**

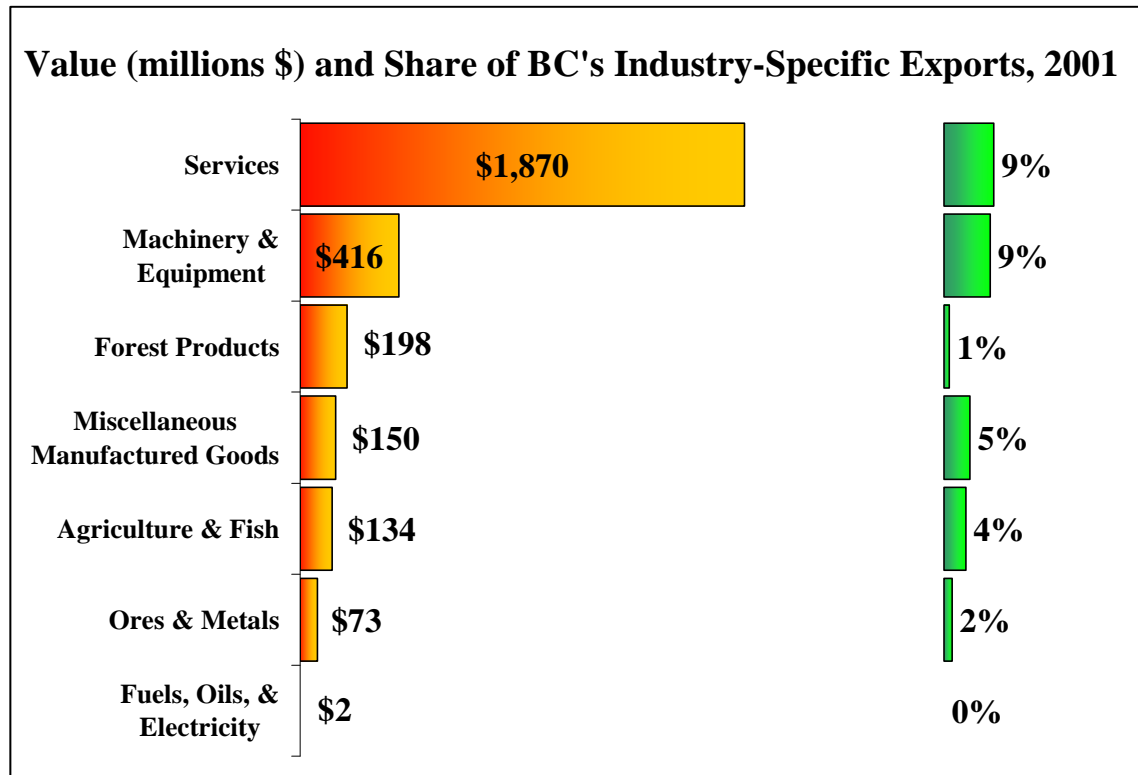
**Share of BC's
Economic Base: 34.7%**

In dollar-value terms, Lower Mainland services generated \$11.9 billion, or 59 percent, of BC's total service export revenue in 2001. This is not surprising given that the origins of service exports correlate strongly with the distribution of a region's population; as one might suspect, 57 percent of BC's total population resided in the lower mainland in 2001. Ranking second with 68 percent of BC's export market, machinery and related products brought in \$3.2 billion annually. Forest products exports came in third and totalled \$1.8 billion, 9 percent of the industry total (the reader should be reminded of the methodological difficulties relating to the employment allocation process that were alluded to previously).

Agriculture, fishery, and food and related products ranked fourth in this region, contributing \$1.4 billion (43 percent) to BC's economic base; next, ores and metals exports counted for \$1.2 billion in yearly revenue (25 percent). Of the remaining six industries (five of which are the smallest five export industries in BC), the Lower Mainland's share of the province-wide total was greater than one-half, and these industries generated over \$2.2 billion. When adjusted for population size, the Lower Mainland ran a per capita export deficit in 2001 of \$6,265 compared the provincial average of \$16,046 per person.

The Lower Mainland's economic base is dominated by service exports, which totalled \$11.9 billion in 2001

E. Capital



**Share of BC's
Population: 8.3%**

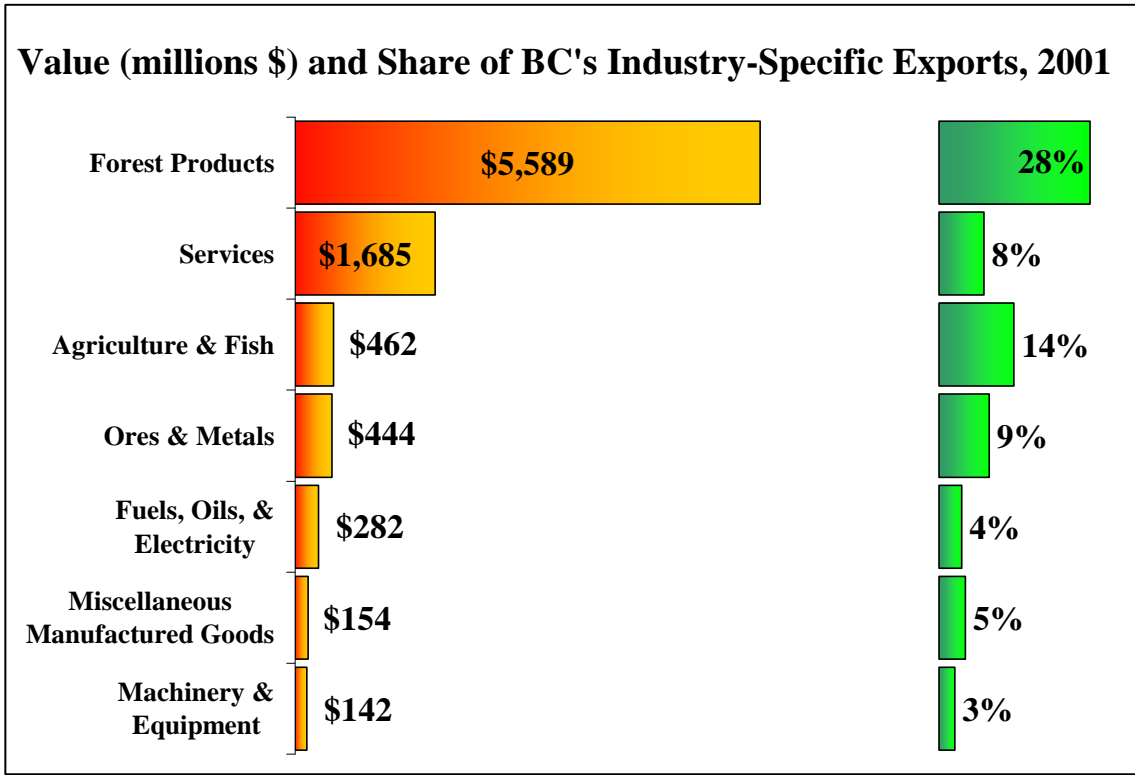
**Share of BC's
Economic Base: 4.5%**

Of all the regions analyzed in this report, the Capital region contributed the least to BC's economic base on a per capita basis - \$8,726 in 2001 - resulting in a \$7,320 deficit relative to the provincial average (also of note is that the largest per capita contributor to BC's economic base - the Northeast - generated, on average, \$64,766 more income per person than did the Capital region) The primary explanations for is lie in the Capital region's lack of natural resources and virtually non-existent excess fuels, oils and electricity generation.

The service sector accounted for the majority of the region's share of export income, totalling \$1.9 billion, or 9 percent of the industry's province-wide total. In a distant second, machinery and equipment exports generated \$416 million (9 percent), while only \$198 million (1 percent) of forest products exports originated in the region. Ranking fourth, miscellaneous manufactured goods exports brought in \$150 million (5 percent) in revenue. Exports of agricultural and fish products generated \$134 million (4 percent), while the remaining industries each brought in a total of \$75 million.

The Capital region is overwhelmingly dependent on its service exports as a source of export income

F. South Coast and Island



**Share of BC's
Population: 9.3%**

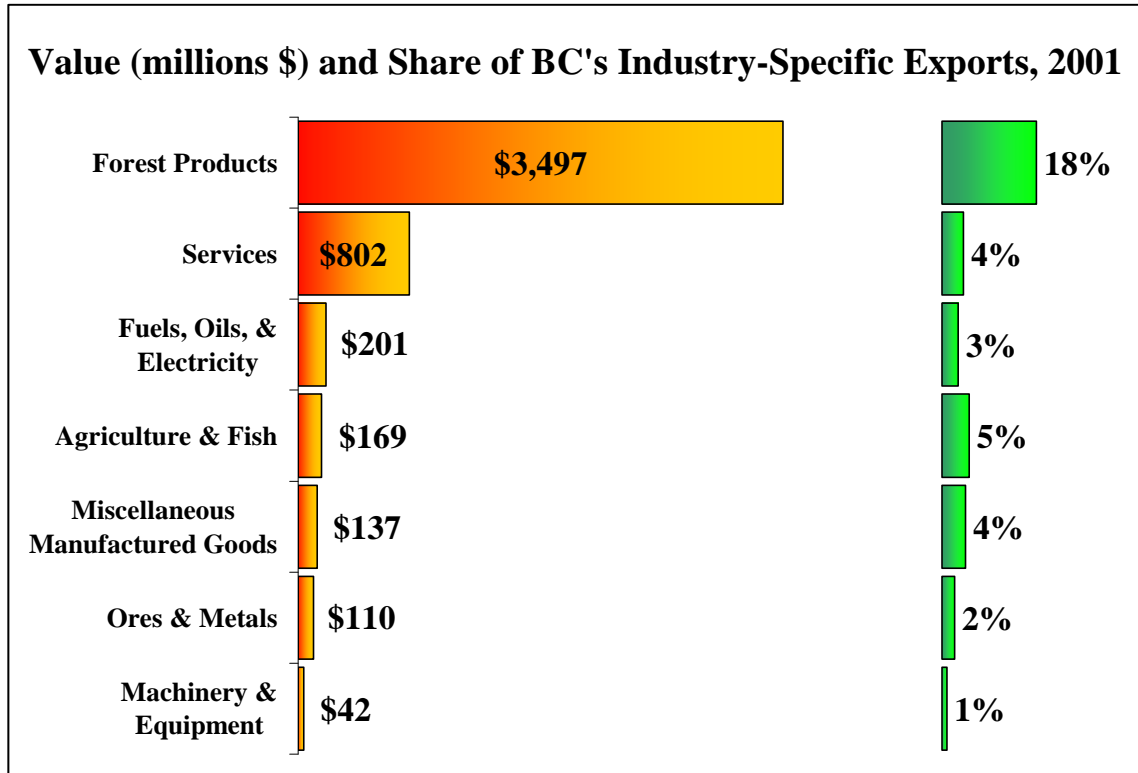
**Share of BC's
Economic Base: 14.0%**

The hallmark of this region is its endowment of natural resources and specifically, its forests. Accordingly, the South Coast and Island region was the origin of 28 percent of the value of BC's forest product exports, totalling \$5.6 billion, by far the most of any region in the province. Service exports ranked second at \$1.7 billion, or 8 percent of all service exports in BC; in third was the agriculture and fish category, with \$462 million in annual export revenue, good enough for 14 percent of the industry total; close behind was the ores and metals category, with \$444 million (9 percent), followed by exports of fuels, oils, and electricity, worth \$282 million (4 percent). Miscellaneous manufactured goods brought in \$154 million (5 percent of the provincial total), while machinery and equipment exports made up 3 percent of BC's total, generating \$142 million in income.

More forest product exports originated here in 2001 - \$5.6 billion - than in any other region in BC

On a per capita basis, the South Coast and Island region produced \$24,185 in export income in 2001. This was not only greater than the provincial average of \$16,046 (representing a regional surplus of \$8,139), but it was also significantly more than the contributions of \$9,781 and \$8,726 made by the Lower Mainland and Capital region, respectively.

G. Cariboo



**Share of BC's
Population: 4.1%**

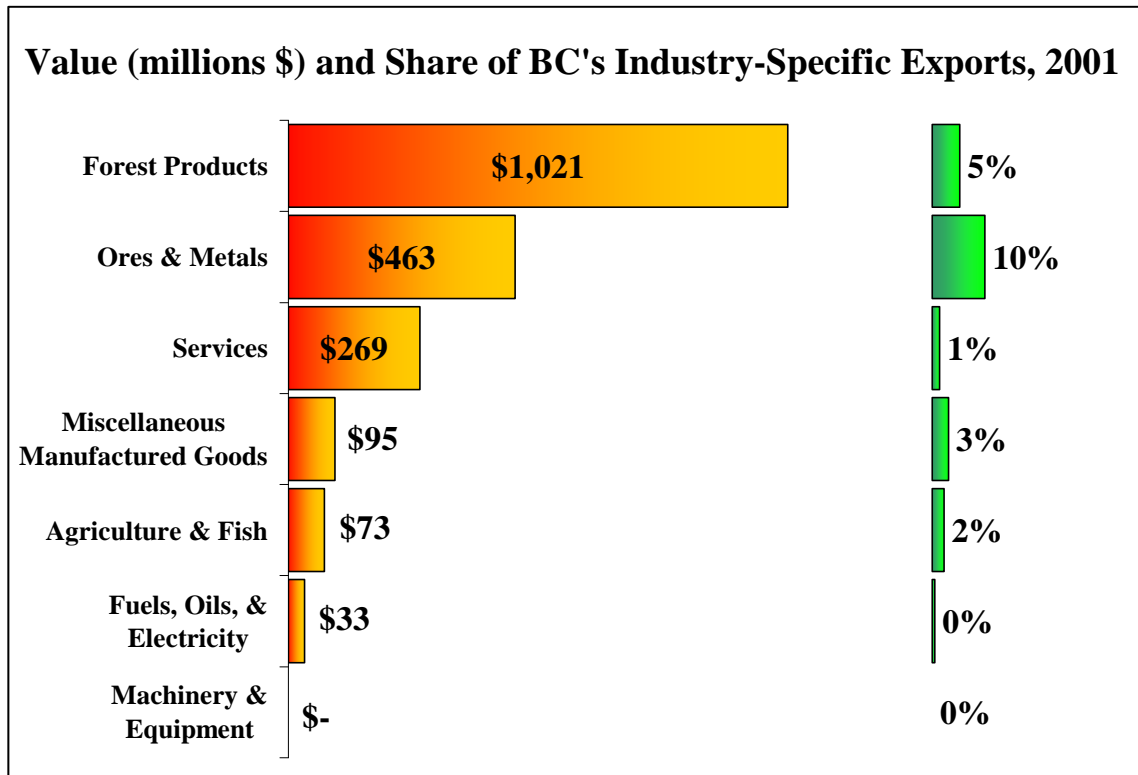
**Share of BC's
Economic Base: 7.9%**

Not unexpectedly, the Cariboo was also a major source of the province's exports of forest products in 2001, which generated \$3.5 billion (18 percent of the provincial total) - four times more than what the second-largest export sector, the service industry, earned (which benefits mainly from Canadian tourists visiting from other provinces and which brought in \$802 million, for 4 percent of the province's total service exports). In third place were fuels, oils, and electricity exports, which amounted to \$201 million (3 percent); agricultural and fish products ranked fourth with \$169 million (5 percent); and the miscellaneous manufactured goods category generated \$137 million (4 percent). Finally, ores and metals exports originating in the region were worth \$110 million (2 percent), while machinery and equipment exports added \$42 million (1 percent) to BC's economic base.

In 2001, \$3.5 billion of forest product exports originated in the Cariboo - 18% of the value of all such exports from BC

In 2001, the Cariboo contributed almost twice as much per capita revenue to BC's economic base as the provincial average, at \$30,794.

H. North Coast



**Share of BC's
Population: 1.6%**

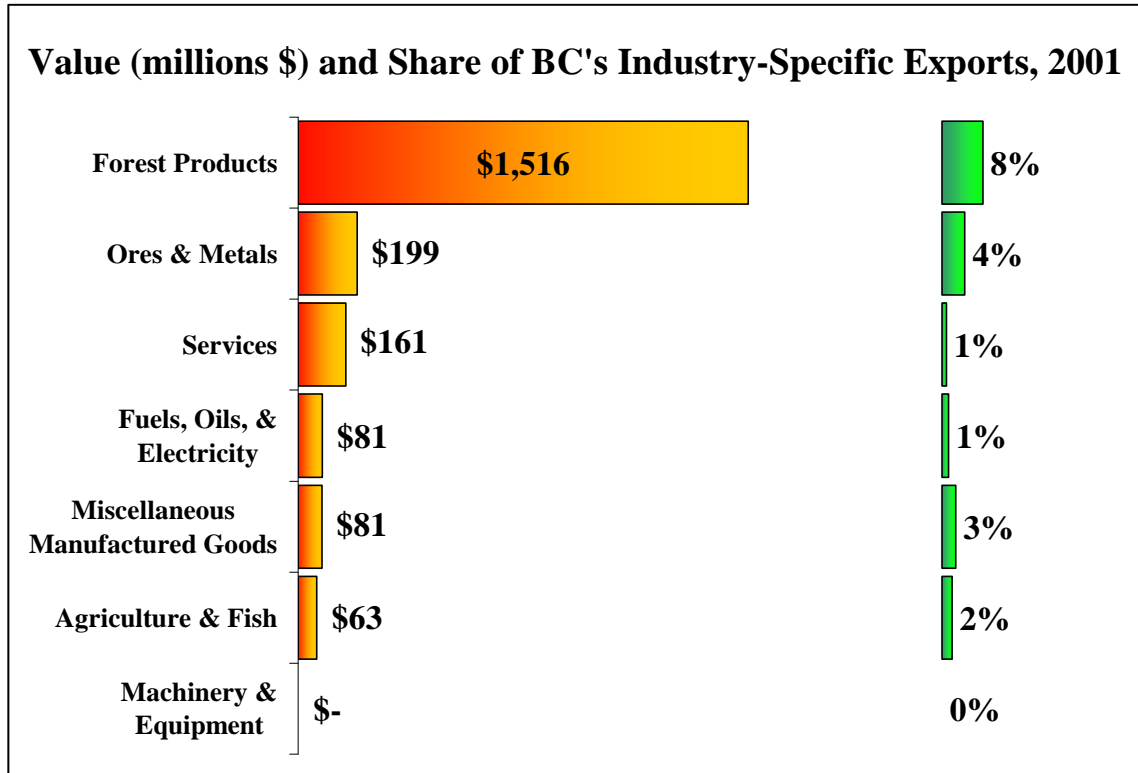
**Share of BC's
Economic Base: 3.1%**

In 2001 the North Coast generated the least export income of all the regions in the province on an aggregate level. However, given its relatively small population base, its per capita contributions to BC's economic base of \$31,247 was almost twice as much as the provincial average.

Despite garnering a relatively small share of the provincial forestry export market – 5 percent - the sheer size of the industry translates that into forest product exports of \$1 billion, the chief source of export revenue in the region. With the exception of the machinery and equipment industry (from which exports were nil), the remainder of the export sectors combined to bring in approximately \$933 million. In terms of their contributions, ores and metals (\$463 million, 10 percent) were followed by services (\$269 million, 1 percent), miscellaneous manufactured goods (\$95 million, 3 percent), agriculture and fish products (\$73 million, 2 percent) and fuels, oil and electricity of \$33 million.

*Forest products
(worth \$1 billion)
and ores and metals
exports (worth 10%
of BC's total)
constituted the
region's main
contributions to the
province's economic
base in 2001*

I. Nechako



**Share of BC's
Population: 1.1%**

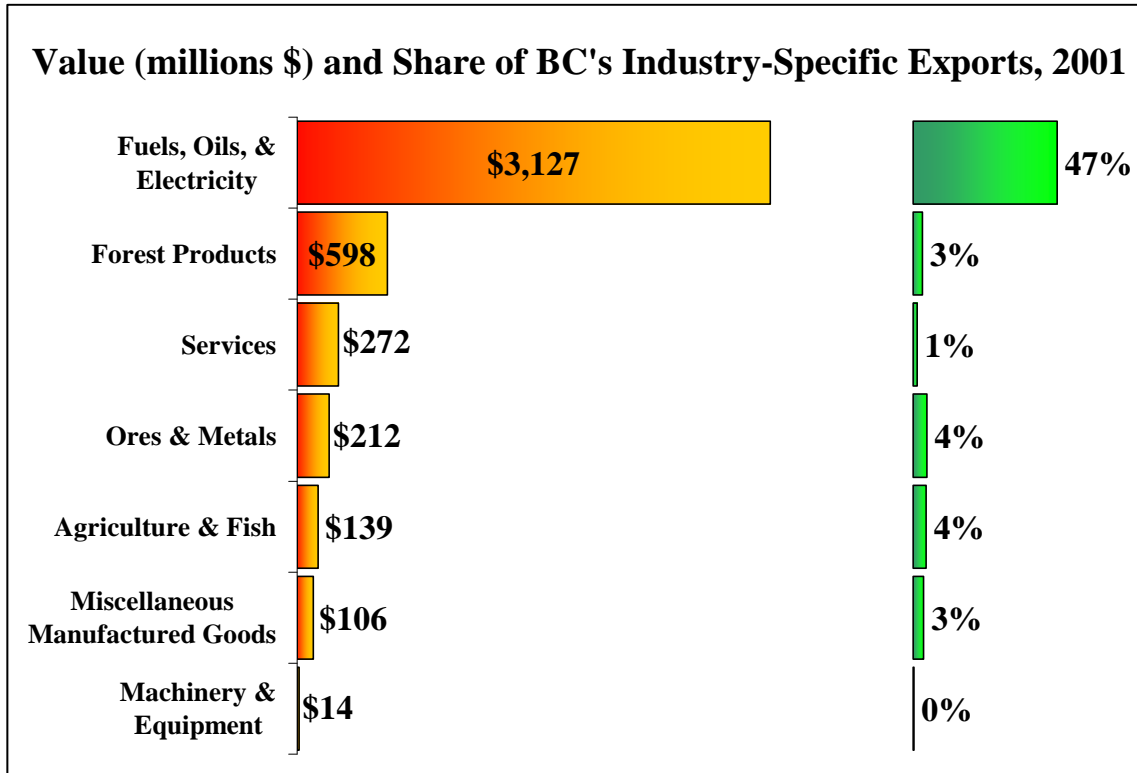
**Share of BC's
Economic Base: 3.3%**

The Nechako region's exports were comprised mostly of forest products, with out-of-province sales of \$1.5 billion, or 8 percent of BC's total forest product exports. At \$199 million, exports of ores and metals came in a distant second (a 4 percent industry share) followed by services, which accounted for \$161 million in export revenue (1 percent). Fuels, oils and electricity exports brought in \$81 million (1 percent) in 2001, as did the miscellaneous manufactured goods category (3 percent of BC's total). Lastly, agriculture and fish exports worth \$63 million (2 percent) originated in Nechako.

Forest product exports originating in Nechako generated \$1.5 billion for BC in 2001

Compared to BC's other regions, only the North Coast earned less aggregate export income; however, with only 1.1 percent of BC's total population, Nechako generated 3.3 percent of the province's export income in 2001, resulting in a per capita contribution to BC's economic base of \$49,806, second only to the North Coast, and dramatically larger than the provincial average of \$16,046.

J. Northeast



**Share of BC's
Population: 1.6%**

**Share of BC's
Economic Base: 7.1%**

In 2001, the Northeast region of BC was the single largest per capita regional contributor to the province's economic base, at \$73,492; this was primarily generated from the export of fuels, oils and electricity products (fuels, oils, and electricity), which brought in \$3.1 billion, and which accounted for 47 percent of the value of BC's total fuels, oils and electricity exports. At approximately one-fifth of the value of its fuels, oils and electricity exports, forest products sales earned \$598 million (3 percent of the industry total); service exports generated \$272 million (1 percent), ores and metals brought in \$212 million (4 percent); exports of agricultural and fish goods and food earned the province \$139 million (4 percent); and miscellaneous manufactured goods earned \$106 million (3 percent). Finally, with \$14 million of exports originating in this region (worth less than 1 percent of the provincial industry total), the machinery and equipment category rounded out the Northeast's contribution to BC's economic base in 2001, generating 14 million in total export value.

An impressive 47% of all fuels, oils, and electricity exports from BC in 2001 originated in the Northeast, earning the province \$3.1 billion

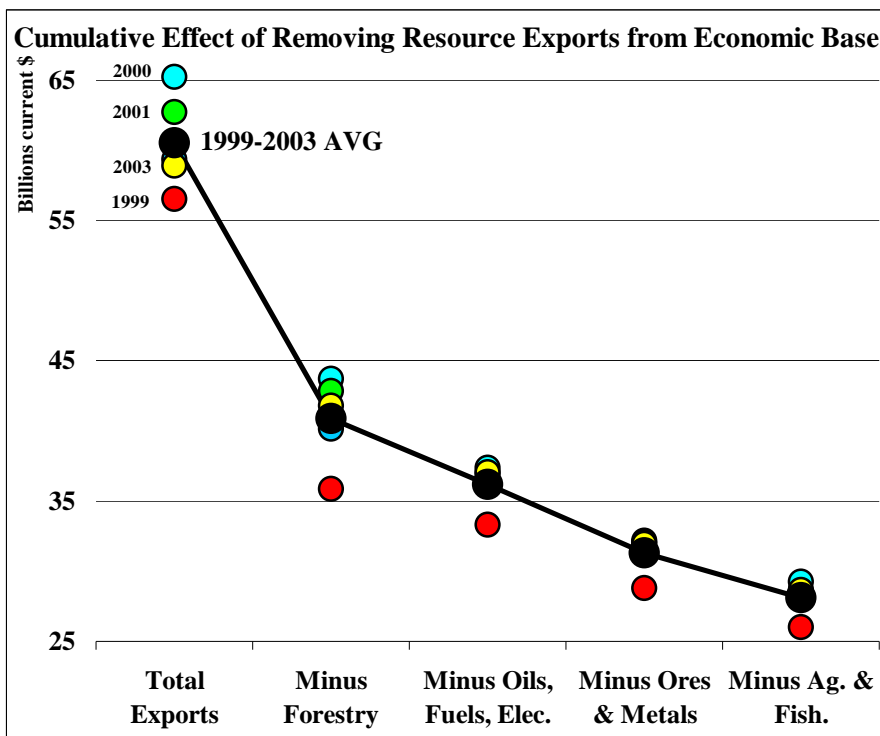
VII. CONCLUSIONS & FURTHER RESEARCH

British Columbia has a large and diverse economic base, one that produces a wide range of goods and services that are sold in markets across Canada and throughout the world, and one that ultimately provides us with the ability to purchase the goods and services that we import. It is this economic base that supports us, whether we are foresters, firefighters, French teachers or forecasters, and the province’s metropolitan regions – the Lower Mainland (the GVRD and FVRD) and the Victoria area (the CRD) – play a vital role in this economic base and are significant engines of economic growth in the province.

Significant engines, yes - but not “the” engines: British Columbia’s economic base has historically been, currently is, and will likely continue to be (at least in the near- and medium-term) predominantly dependent upon rural and resource activities such as forestry, fishing, farming, and mining. These industries play a significantly larger role in the province’s economy than do the industries that would typically be associated with a metropolitan economy. Sixty percent of the value of the province’s international and inter-provincial export income originates from economic activities located outside of the two metropolitan regions. Furthermore, when the value of exports generated from rural and resource activities (such as fishing, farming or energy) that are located *within* metropolitan regions are added to the total exports emanating from non-metropolitan regions, the metropolitan economies account for only a one-third share of the province’s economic base.

As such, any discussion of the future of British Columbia’s economy must begin with acknowledgement of the reality that this is a resource dependent province, and that while its metropolitan regions play a vital role, without the strength of the non-metropolitan areas and activities of the province we would be substantially poorer.

Figure 19



This report has documented, in detail, the nature and extent of this dependency, and has identified the regions of the province with the greatest direct role in generating the exports upon which we, as a province, rely.

Generally-speaking, the magnitude of this dependence can be shown by simply subtracting rural and resource exports from total exports over the past five years (Figure 19). The

annual average of total exports over the 1999 to 2003 period was \$60.5 billion; forest based exports accounted for \$19.6 billion of this total, fuels, oil and electricity for \$4.7, ores and metals for \$4.9 billion, and agriculture and fishing for \$3.2 billion. These rural and resource activities averaged a total of \$32.4 billion in exports over the past five years: without them the province would have been 54 percent poorer.

Given the dependency of the Lower Mainland and Capital regions, as well as that of the rest of the province, on the export income generated by rural and resource activities and regions, then, at least until “city states” become reality, it is in the best interests of the residents of both metropolitan and non-metropolitan regions of the province to work together to ensure that the communities and industries that support our resource economy’s engines of growth have the people, the investment, and the support that they require to produce the export income that is shared among all British Columbians.

As with the previous report on the spatial origin of the province’s economy base, this report is intended to stimulate further research and analysis on this topic. It is only through greater understanding of the sources and structure of the province’s economy that prudent economic policies can be put in place to ensure that it will continue to support the people of the province of British Columbia.

This report was based on the best available data at the time of publication, given the research resources available to its authors. As such, a full and complete study as might be desired was not possible. Additional areas of research that should be conducted given suitable funding would focus in two areas. The first concerns the composition of inter-provincial exports: while the provincial accounts data provide reasonable inter-provincial export control totals, there are no data on the industry composition within these totals. The most practical approach to obtaining information on this composition would likely be to carry out surveys of the major firms exporting to other provinces. However, given the lack of data on the sectoral composition of inter-provincial flows, an alternate approach would be to begin with surveys of largest international export sectors as to the composition and magnitude of exports to other provinces. This would make the surveying less costly and potentially more effective.

Such a survey approach would also assist in the second area of focus, that being a closer estimation of where exported commodities originate by asking respondents where they obtain their inputs within the province, as well as where they process and sell their outputs, both within the province and outside it. This approach is similar to what would be required to construct a spatial input/output model for the province and its regions. While certainly a worthy ambition, unless significant resources are available, it is suggested that such a modeling exercise be conducted only after the major sectors have been surveyed to determine the extent to which such a commitment of resources is appropriate.

APPENDIX

Table Three:
Industries and Occupations Used in Spatial Allocation of Export Income

Industry NAICS (70)

All industries
111-112 Farms
113 Forestry & logging
114 Fishing, hunting & trapping
115 Support activities for agriculture & forestry
211 Oil & gas extraction
212 Mining (except oil & gas)
213 Support activities for mining & oil & gas extraction
219 Mining - unspecified
221 Utilities
23 Construction
311 Food manufacturing
312 Beverage & tobacco product manufacturing
313-316 Clothing & Textile Manufacturing
321 Wood product manufacturing
322 Paper manufacturing
323 Printing & related support activities
324 Petroleum & coal products manufacturing
325 Chemical manufacturing
326 Plastics & rubber products manufacturing
327 Non-metallic mineral product manufacturing
331 Primary metal manufacturing
332 Fabricated metal product manufacturing
333 Machinery manufacturing
334 Computer & electronic product manufacturing
335 Electrical equipment, appliance & component manufacturing
336 Transportation equipment manufacturing
337 Furniture & related product manufacturing
339 Miscellaneous manufacturing
411 Farm product wholesaler-distributors
412 Petroleum product wholesaler-distributors
413 Food, beverage & tobacco wholesaler-distributors
414 Personal & household goods wholesaler-distributors
415 Motor vehicle & parts wholesaler-distributors
416 Building material & supplies wholesaler-distributors
417 Machinery, equipment & supplies wholesaler-distributors
418 Miscellaneous wholesaler-distributors
419 Wholesale agents & brokers
441-444, 453-454 Local Retail
445-452 Possible Travel Related Retail
481 Air transportation
482 Rail transportation
483 Water transportation
484 Truck transportation
485 Transit & ground passenger transportation
486 Pipeline transportation
487 Scenic & sightseeing transportation
488 Support activities for transportation
491 Postal service
492 Couriers & messengers
493 Warehousing & storage
511 Publishing industries
512 Motion picture & sound recording industries
513 Broadcasting & telecommunications
514 Information services & data processing services
52 Finance & insurance
53 Real estate & rental & leasing
541 Professional, scientific & technical services
551 Management of companies & enterprises
561 Administrative & support services
562 Waste management & remediation services
611 Educational services
62 Health Care & Social Assistance
711 Performing arts, spectator sports & related industries
712 Heritage institutions
713 Amusement, gambling & recreation industries
721 Accommodation services
722 Food services & drinking places
81 Other Personal Services
91 Public Administration

Occupations NOC-S (48)

All occupations
A0 Senior management occupations
A1 Specialist managers
A2 Managers in retail trade, food & accommodation services
A3 Other managers, n.e.c.
B0 Professional occupations in business & finance
B1 Finance & insurance administration occupations
B2 Secretaries
B3 Administrative & regulatory occupations
B4 Clerical supervisors
B5 Clerical occupations
C0 Professional occupations in natural & applied sciences
C1 Technical occupations related to natural & applied sciences
D0 Professional occupations in health
D1 Nurse supervisors & registered nurses
D2 Technical & related occupations in health
D3 Assisting occupations in support of health services
E0 Judges, lawyers, psychologists, social workers, ministers of religion, & policy & program officers
E1 Teachers & professors
E2 Paralegals, social services workers & occupations in education & religion, n.e.c.
F0 Professional occupations in art & culture
F1 Technical occupations in art, culture, recreation & sport
G0 Sales & service supervisors
G1 Wholesale, technical, insurance, real estate sales specialists, & retail, wholesale & grain buyers
G2 Retail salespersons & sales clerks
G3 Cashiers
G4 Chefs & cooks
G5 Occupations in food & beverage service
G6 Occupations in protective services
G7 Occupations in travel & accommodation, including attendants in recreation & sport
G8 Childcare & home support workers
G9 Sales & service occupations, n.e.c.
H0 Contractors & supervisors in trades & transportation
H1 Construction trades
H2 Stationary engineers, power station operators & electrical trades & telecommunications occupations
H3 Machinists, metal forming, shaping & erecting occupations
H4 Mechanics
H5 Other trades, n.e.c.
H6 Heavy equipment & crane operators, including drillers
H7 Transportation equipment operators & related workers, excluding labourers
H8 Trades helpers, construction & transportation labourers & related occupations
I0 Occupations unique to agriculture, excluding labourers
I1 Occupations unique to forestry operations, mining, oil & gas extraction & fishing, excluding labourers
I2 Primary production labourers
J0 Supervisors in manufacturing
J1 Machine operators in manufacturing
J2 Assemblers in manufacturing
J3 Labourers in processing, manufacturing & utilities