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Exports and Job Creation

by

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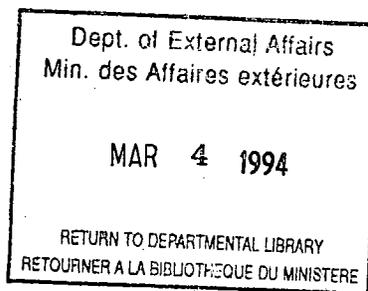
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Canada

EXPORTS AND JOB CREATION

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EXECUTIVE SUMMARY

A Statistics Canada Input-Output model was used to estimate the number of jobs supported by Canadian merchandise exports in 1991. Canada's total world trade was investigated, as well as Canada's trade with the U.S., Japan, South Korea, Mexico, and the EC.

1,649,000 jobs or 13.4% of the 12.3 million total jobs (18% of total business sector jobs) in Canada were supported by \$137.3 billion in business sector exports of goods in 1991 (\$145.7 billion in total exports less re-exports and non-business sector exports). Put another way, **one out of every 7.5 total jobs** (one out of 5.6 business sector jobs) was directly or indirectly dependent on exports of goods, while more than one-fifth of Canada's GDP was also dependent on merchandise exports. It should be noted, however, that if the model could accommodate all direct exports of services (many export-related service sector jobs sustained indirectly by goods exports are captured) and job creation in the non-business sector supported through taxation of export-related earnings in the business sector, then the ratio of jobs sustained by business sector exports to total jobs would likely be closer to one in six.

Nonetheless, the Input-Output model allows us to move beyond aggregate figures to analyze specific industries and export markets. Consequently, it remains the centrepiece of this Paper. In this regard, the one in 7.5 ratio means that each billion dollars of Canadian exports of goods supported 12,016 Canadian jobs or, \$83,219 of Canadian exports of goods supported one Canadian job. These figures are substantially different from those of our main trading partner, the United States. When the value of U.S. merchandise exports is adjusted for the average 1991 Canada-U.S. exchange rate, each billion Canadian dollars supported 16,363 American jobs, or \$60,942 Canadian supported one U.S. job. The differences in these U.S.-Canadian numbers for jobs supported by exports are the result of variances in the mix of commodities exported, labour intensities, productivity levels, and the percentage of imported inputs in goods exported.

Exports of goods support 1,071,711 jobs (approximately two-thirds of all jobs supported by Canadian merchandise exports) in the manufacturing and resource sectors, of which 741,952 jobs are sustained directly and indirectly by manufacturing industries, and 329,759 jobs are supported directly and indirectly by resource industries. In addition, another 577,684 service industry jobs are indirectly the result of goods exports in 1991.

On an industry basis, merchandise exports by the Agriculture and Related Services industry supported over 170,000 jobs throughout all goods industries. Transportation Equipment industries, the second most important, accounted for almost 145,000 jobs supported directly and indirectly in goods industries. In addition, goods exports supported indirect jobs in the services industries, the most important of which were retail trade (120,000), wholesale trade (113,000), and transportation services (108,000).¹

Canada's export trade with the world creates both direct and indirect jobs domestically. As the impact of the demand for goods ripples through the economy, secondary and other impacts including indirect services also create a demand for goods. The employment effects caused by the direct and indirect demand for goods and the indirect demand for services appears as total jobs supported by merchandise exports. In 1991, Canada's export merchandise trade with the world supported 850,391 direct jobs and 799,004 indirect jobs.

The United States is Canada's largest export customer dominating all aspects of trade and job creation. In 1991, the U.S. accounted for 75% of total Canadian exports and 69% of all export-related jobs (1,132,380). Every one billion Canadian dollars of merchandise exports to the U.S. supported 11,039 jobs in Canada.

Mexico is one of our partners in the NAFTA, but it has not traditionally been a significant generator of Canadian export-supported jobs. In 1991, Canadian business-sector exports to Mexico supported 7,351 jobs in Canada or 0.4% of total jobs. A billion dollars of Canadian merchandise exports to Mexico would support 13,222 jobs in Canada. Once the NAFTA is in force, and Mexico's many trade barriers are phased-out, Canadian exports should increase significantly, supporting more jobs in Canada.

¹ Total jobs are defined as the number of direct jobs supported in a goods industry, plus the total number of indirect jobs supported in the same sector and in all other goods sectors (i.e., not indirect services). Even though indirect jobs are located in other industries, they are attributed to the goods industry which created the "ripple" effect.

Jobs in the service industries are indirect in nature and are treated differently in the model than those in the goods sectors. Because of the constraints of the Input-Output model, each indirect service is aggregated according to its classification, rather than by the industry causing the "ripple" effect. For example, the number of indirect jobs supported in transportation services by the wood industry would be classified in transportation services, not in the wood industry. Hence, each service industry category represents the total number of indirect service jobs supported in a sector across all goods and services industries.

In 1991, Canada's merchandise trade with Japan accounted for 5% of total merchandise exports and 6.7% of all export supported jobs (111,244). Every billion dollars of merchandise exports to Japan creates 15,759 jobs in Canada, 43% more jobs than each billion dollars of exports to the U.S.. This difference is largely related to the export product mix, with wood and paper products, food industries and other processed resource products creating jobs with high Canadian content, compared to transport equipment (a major component of exports to the U.S.) in which a higher level of imported inputs (mostly originating in the U.S.) lowers the number of jobs created in Canada.

In 1991, every billion dollars of Canadian merchandise exports to South Korea supported 12,850 jobs in Canada. The \$1.8 billion dollars of Canadian merchandise exports to South Korea supported a total of 23,761 jobs in Canada in 1991. Canadian merchandise exports of \$11 billion in 1991 to the EC (12) accounted for 151,393 jobs in Canada. Each billion dollars of merchandise exports supported 13,699 jobs in Canada.

There are two strategic, trade-related methods to increase jobs in Canada. One is to replace imports used as intermediate inputs with those which are made in Canada, or at least increase their Canadian value-added. But for governments to attempt to dictate this course would be inconsistent with our international trading obligations in most instances, would likely lead to retaliation against Canadian exports, and could limit our access to cost-competitive inputs needed for down-stream production. Such government-directed import substitution would undermine Canadian competitiveness. The second approach is to provide a domestic and trade policy framework that will encourage greater export competitiveness. Exports have been forecast to grow between four and five percent annually for the next twenty years. If exports increased by only one percent more each year, within ten years Canada would have generated a minimum of at least 165,000 additional jobs.

RÉSUMÉ

Un modèle des entrées-sorties de Statistique Canada a été utilisé pour déterminer le nombre d'emplois qui, en 1991, dépendaient des exportations canadiennes. Le commerce extérieur dans son ensemble ainsi que les échanges avec les États-Unis, le Japon, la Corée du Sud, le Mexique et la CE ont été étudiés.

En 1991, 1 649 000 emplois ou 13.4 % des 12,3 millions d'emplois au pays (18% des emplois totaux des secteurs commerciaux) reposaient sur 137,3 milliards \$ d'exportations de biens du secteur commercial (145,7 milliards \$ d'exportations totales moins les réexportations et les exportations autres que celles du secteur commercial). On pourrait aussi dire qu'un emploi sur 7.5 (un emploi sur 5.6 dans le secteur commercial) était directement ou indirectement lié aux exportations de biens, alors que plus d'un cinquième du PIB canadien était également lié aux exportations de marchandises. Il convient de noter toutefois que si le modèle pouvait tenir compte des exportations de services (beaucoup d'emplois du secteur des services se rattachant indirectement aux exportations de biens sont saisis) et de la création d'emplois hors du secteur commercial stimulée par l'imposition des recettes liées aux exportations du secteur commercial, le taux se situerait vraisemblablement plus près de un sur six.

Il n'en demeure pas moins que le modèle des entrées-sorties nous permet d'aller au-delà des chiffres agrégés pour analyser des industries et des marchés d'exportation particuliers. Aussi, il constitue la pierre angulaire de cette étude. À cet égard, le taux de un sur 7,5 signifie que chaque milliard \$ d'exportations de biens soutenait 12 016 emplois, ou encore 83 219 \$ d'exportations soutenait un emploi. Ces chiffres sont très différents de ceux affichés par notre principal partenaire commercial, les États-Unis. En convertissant la valeur des exportations américaines de marchandises en \$ CAN (à l'aide du taux moyen pour 1991), on obtient 16 363 emplois américains pour chaque milliard \$ CAN ou un emploi américain pour 60 942 \$ CAN. Ces différences relèvent de la nature des biens exportés, du coefficient de main-d'oeuvre, des niveaux de productivité et du contenu en éléments importés.

Les exportations de marchandises ont entretenu 1 071 711 emplois (environ les deux tiers de tous les emplois liés à l'exportation de marchandises canadiennes) dans le secteur manufacturier et dans celui des ressources, 741 952 emplois découlant directement et indirectement des industries manufacturières, et 329 759 des industries basées sur les ressources. De plus, dans l'industrie des services, 577 684 emplois dépendaient indirectement des exportations de marchandises en 1991.

Examinées sous l'angle des différentes industries, les marchandises exportées par le secteur de l'agriculture et des services connexes ont été à l'origine de plus de 170 000 emplois répartis dans toutes les industries de biens. L'industrie du matériel de transport, la deuxième en importance, a employé directement et indirectement presque 145 000 personnes dans les industries de biens. L'exportation de biens a entretenu de plus des emplois indirects dans l'industrie des services, les plus nombreux se trouvant dans le commerce au détail (120 000), le commerce de gros (113 000) et les services de transport (108 000)².

L'exportation crée directement et indirectement des emplois, la demande extérieure engendrant elle-même une demande intérieure en produits et services. Cette demande directe et indirecte a des répercussions sur l'emploi. En 1991, les exportations de marchandises étaient une source directe d'emploi pour 850 391 Canadiens, et une source indirecte pour 799 004 d'entre eux.

Les États-Unis, qui sont notre principal client à tous les égards, sont à l'origine du plus grand nombre d'emplois canadiens liés aux exportations. En 1991, ce pays comptait pour 75 % des exportations canadiennes et pour 69 % des emplois liés à l'exportation (1 132 380). Chaque milliard \$ CAN d'exportations vers les États-Unis représentait 11 039 emplois au Canada.

Cette même année, seulement 7 351 ou 0,4 % des emplois liés aux exportations dérivait de nos ventes de marchandises au Mexique, l'un de nos partenaires de l'ALENA. Un milliard \$ CAN d'exportations au Mexique représenterait 13 222 emplois canadiens. Une fois l'ALENA en vigueur et les nombreux obstacles mexicains au commerce éliminés, nos exportations vers ce pays devraient connaître un essor considérable et avoir un effet positif sur l'emploi au Canada.

²

Le nombre total d'emplois représente le nombre d'emplois directs créés dans une industrie de biens, plus le nombre total d'emplois indirects créés dans le même secteur et dans tous les autres secteurs de biens (et non les services indirects). Même si des emplois indirects se trouvent dans d'autres industries, ils sont attribués à l'industrie de biens, qui a créé l'effet de «vague».

Les emplois dans les industries de services sont indirects et sont traités différemment de ceux des secteurs de biens dans le modèle. En raison des contraintes imposées par le modèle des entrées-sorties, chaque service indirect est regroupé en fonction de sa classification, plutôt qu'en fonction de l'industrie qui a causé l'effet de «vague». Par exemple, le nombre d'emplois indirects créés dans les services de transport par l'industrie du bois serait classé dans les services de transport, et non dans l'industrie du bois. Chaque catégorie d'industrie de services représente donc le nombre total d'emplois indirects créés dans ce secteur par toutes les industries de biens et de services.

En 1991, 5 % de nos exportations étaient destinées au Japon, et 6,7 % des emplois liés aux exportations (111 244) en dérivait. Chaque milliard \$ d'exportations vers le Japon représentait 15 759 emplois au Canada, soit 43 % de plus qu'en ce qui concerne les États-Unis. Cette différence est en grande partie due à la nature des produits exportés : bois, papier, produits alimentaires et autres ressources transformées, au contenu canadien élevé et à l'origine d'emplois de qualité, par opposition au matériel de transport (principal produit exporté vers les États-Unis), qui comporte des éléments importés contribuant à réduire le nombre d'emplois de qualité au Canada.

-En 1991, les 1,8 milliard \$ d'exportations vers la Corée du Sud représentaient au total 23 761 emplois canadiens, soit 12 850 emplois pour chaque milliard \$. Cette même année, 151 393 emplois canadiens dérivait des 11 milliards \$ d'exportations de marchandises vers la CE (12), c'est-à-dire 13 699 emplois pour chaque milliard \$.

Il existe deux stratégies commerciales pour stimuler l'emploi au Canada. La première est de remplacer les intrants intermédiaires importés par des produits fabriqués au pays ou, du moins, d'accroître la part canadienne de leur valeur ajoutée. Toutefois, en tentant d'imposer cette stratégie, nos gouvernements iraient, dans la plupart des cas, à l'encontre de leurs obligations en matière de commerce extérieur, ce qui risquerait probablement d'entraîner des mesures de rétorsion à l'endroit de nos exportations et de nous obliger à payer plus cher le matériel nécessaire à la production. Cela nuirait donc à la compétitivité du Canada. La seconde méthode consiste à créer un cadre de politique intérieure et de politique de commerce extérieur qui stimulera la compétitivité en matière d'exportation. Nos exportations sont censées connaître une croissance annuelle de quatre à cinq pour cent pendant les deux prochaines décennies. Un seul pour cent de plus par année représenterait au bout de dix ans 165 000 emplois supplémentaires au minimum.

INTERNATIONAL EXPORTS AND JOB CREATION ³

1. INTRODUCTION

Exports have long been one of the main engines of economic growth and job creation in the Canadian economy. International trade has made Canada one of the world's richest and most envied countries. Canadians enjoy a high standard of living despite the fact that Canada has a relatively small population and, consequently, a small market for the output from domestic production. Canadians trade to take comparative advantage of domestic resources and to earn thereby an income to buy a greater variety of goods and services. The increase in income allows Canadians to have a life style that is higher and more enriching than many countries of equal size. In order to continue to serve world markets and to maintain a high standard of living, Canadians must be internationally competitive.⁴

Today, Canada remains a strong trading nation. Our reliance on and success in international trade explains much of the underlying strength of our economy. For example, more than 20% of our GDP is generated by merchandise exports. Trade is a key factor in the growth of the Canadian economy. Trade initiatives such as the Free Trade Agreement (FTA) with the U.S., and the forthcoming North American Free Trade Agreement (NAFTA) reinforce the role of trade as a key to future Canadian economic prosperity.

The strong expansion of Canadian exports in the last half of the 1980s, and into the 1990s, has contributed to increased employment within Canada. However, the details and structure of this job support are not well known. Although there have been a few internal Government reports of a general nature, little work has been done on the impact of exports on job creation for the last decade. This Staff Paper examines in detail the contribution of exports of goods to job support in Canada, using trade data for 1991.

³ The author would like to thank Ronald Rioux and Erik Poole of Statistics Canada for their technical support, and Denis Gauthier and Louis Beauséjour of the Department of Finance for their helpful criticism.

⁴ Keith Christie explores the impact of globalization on production processes, trading patterns, and trade negotiations in "*Globalization and Public Policy in Canada*", Policy Planning Staff Paper 93/01 (January 1993).

2. THE IMPORTANCE OF EXPORTS TO CANADA'S ECONOMIC GROWTH

Since the founding of Canada, international trade has been one of the cornerstones of the Canadian economy. Canada's geographic trading patterns have evolved significantly over the past fifty years. During this period, the preeminence of the British Empire has disappeared, and the importance of our nearest neighbour, the United States, has almost doubled. Over the last decade, trade expansion towards Asia/Pacific has replaced Europe as a primary source of export growth and, most recently, new trading partners such as Mexico and a number of countries in Latin America have emerged as potentially significant trading partners of the near future.

In the 1982 to 1989 period, exports and investment were the two major driving forces that led Canada out of the 1982 recession into the high levels of economic growth experienced in the mid to late eighties. The record export performance in 1992 is a clear indication that exports will help to ensure that Canada's recovery from the 1990-91 recession will also be impressive. In fact, the outlook for future Canadian trade growth is so strong that some economists are predicting Canada's trade to grow at an average annual rate of four to five percent over the next twenty years, at least half again as much as growth in GDP.

In this Paper, we have used export data for the most recent year for which revised statistics are available (1991)⁵. Merchandise exports (customs basis) accounted for more than twenty percent of Canada's GDP in 1991. In that year, total Canadian merchandise exports amounted to \$145.7 billion (or \$137.3 billion once re-exports and non-business sector exports are excluded).

Exports and job support are almost perfectly correlated. More exports means more jobs for Canadians. Canadian companies produce products that are consumed both domestically and abroad. Canadian output supports a demand for goods and services that ripples widely from the industry producing the export to intermediate suppliers. This demand for goods and services, in turn, produces further ripple effects. The sums of all these direct and indirect ripples support employment. The greater the demand for exports, the greater the number of jobs supported by exports. In Canada, the demand for exports supports a substantial portion of the employment market.

⁵ Statistics Canada has just released revised 1992 international trade data.

3. STATISTICS CANADA INPUT-OUTPUT MODEL AND METHODOLOGY

- THE MODEL

In order to assess the impact of Canadian international exports on job support, a simulation was run on Statistics Canada's Input-Output model of the Canadian economy. Among the many uses of Input-Output tables is the construction of models which trace and quantify the direct and indirect effects of some postulated economic activity -- in this case, international exports.

The Input-Output model represents an integral part of the Canadian System of National Accounts. This system is modeled to a large extent on the United Nations System of National Accounts with adaptations which reflect the Canadian economic infrastructure, such as our overall approach to indirect taxes and subsidies, and our mix of export commodities.

The Input-Output accounts are a comprehensive measure of economic activity. All facets of the economy, unlike other Statistics Canada surveys, must be somehow measured, even when data relating to a particular aspect of activity are deficient. All parts of the accounts are constructs and as such they impose constraints with respect to the relationships among the various classes of activities. The dependence on others for data as well as the exhaustive procedures for remedying errors and balancing the model, necessitate a construct in which the most recent overall structure is often three to four years old.

While statistically difficult to develop, the theoretical concept of input-output tables is simple. The Input-Output accounts are a complete accounting of transactions generating the production process, identifying intermediate transactions between production entities as well as primary inputs and final output. Since some output is met by imports, imports are a deduction from final demand in the model used. The accounting for intermediate use provides for a formal linkage between primary inputs (GDP) and final demand outputs (Expenditure on GDP).⁶

⁶ A complete description of the methodology used in the Input-Output model is available in *The Input-Output Structure of the Canadian Economy 1961-1981* (Statistics Canada publication Catalogues 15-510 and 15-511).

● **METHODOLOGY APPLIED**

The calculations are based on total domestic input-output requirement coefficients for goods and indirect service inputs to Canadian merchandise exports in the year 1991. Not included are exports of foreign merchandise (re-exports) nor direct inputs of imported goods. In the long term, changes in these coefficients reflect changes in Canadian production technology and productivity growth. However, in the short run it is assumed that there are no changes in the growth of technology and productivity that would undermine the model's results. Estimates of total export-related employment requirements are the sum of employment required to produce domestic goods directly required and indirectly required as intermediate inputs, indirect service employment as intermediate inputs, and the movement of final goods to the point of export.

The input-output computations in this Paper were produced by Erik Poole at Statistics Canada using the 1987 input-output model structure containing 216 industries, and 602 commodities. Data for the year 1991 were provided directly to the model by Statistics Canada's International Trade Division and redefined by the Input-Output division to conform to model requirements.

The calculations embody the following criteria: a) direct import requirements were set to zero (i.e., no direct imports); (b) input requirement coefficient matrices used were for 1987 (these coefficients appear to be stable over time); (c) output requirements were estimated from requirement coefficient matrices which also reflect the 1987 structure of the model; and (d) the calculations also include certain other adjustments such as trade margin requirements.⁷

The four main steps in the calculation were: 1) estimating the domestic content of the direct requirement coefficient matrix and its corresponding domestic total requirement coefficient matrix; (2) computing the total domestic input requirements to produce exports by multiplying the domestic total requirement coefficient matrix by a vector of export values; (3) computing the indirect domestic output requirements by multiplying the domestic direct requirements by the export vector and then subtracting the result from the previous step 2; and (4) computing total and indirect domestic employment requirements by multiplying the results of steps 2 and 3 by employment-output ratios. Labour-output ratios in the model have been determined by the data

⁷ Trade margins are the goods and services required to move the goods to be exported from their point of final production to the port of export.

available in 1987. The use of 1991 export data in a 1987 structured model usually requires inflation/deflation adjustments.⁸ In addition, employment output ratios may change over time, altering the job creation results. In the period 1987 to 1991, export prices changed only nominally (less than minus two percent). Furthermore, it has been assumed that the economic slowdown during this time period stabilized employment output ratios. Consequently, the model utilized nominal 1991 export prices.

- **CONSTRAINTS**

-By their very nature, the Input-Output accounts represent a static picture in time. Results are valid only for that period, i.e., each year represents a separate equilibrium. The model goes from one yearly equilibrium to another without any element of time. Unlike time-series analysis, the use of an Input-Output model implies instantaneous results (i.e., there are no leads, lags, or other time elements, every transaction and every result is instantaneous and simultaneous), unlimited capital and labour resources (i.e., resources are perfectly elastic), and a fixed industry structure with fixed levels of technology in each year.

The paper uses the 1987 input-output model structure which is the latest complete model currently in operation by Statistics Canada.⁹ The results from this model are used to analyze the impact of exports generated in 1991 and are subject to modification if the industrial structures have changed or if there have been significant changes in technology or total factor productivity. This paper assumes no significant change in these parameters in the four year period between 1987 and 1991.

The input-output model was not "shocked" directly with service industries as merchandise trade on a customs basis was used. These data do not contain exports generated by the service sector.¹⁰ Nevertheless, although the direct effects of the service sector are not included, secondary and other effects are captured, i.e., the job creation impact in the service sector caused by exports of goods.

⁸ The use of different deflators can change the results substantially.

⁹ Statistics Canada has just released a 1989 version of their input-output model.

¹⁰ A small number of service industries were inadvertently included when the model was "shocked" with merchandise goods exports. These service industries represented 1.1% of total business exports, and accounted for an estimated 10,000 direct jobs. The inclusion of these direct service jobs is not statistically significant.

The model estimates only the impact on the business sector in its analysis. Not included is the non-business sector containing mostly non-profit services, including government, non-profit institutions such as hospitals, and non-profit services to resource and manufacturing industries.

4. CANADIAN EXPORTS TO THE WORLD AND JOB SUPPORT: OVERALL RESULTS

1,649,395 jobs in the business sector or 13.4% of the 12.3 million total jobs in Canada (18% of total business sector jobs) were supported by \$137.3 billion in business sector exports in 1991 (\$145.7 billion in total exports less re-exports and non-business sector exports). Based on the Input-Output model used for this study, one out of every 7.5 total jobs in 1991 (one in 5.6 business sector jobs) was directly or indirectly dependent on international merchandise exports.

While identifying most of the job creation impact of exports, the one in 7.5 ratio does not, however, tell the whole story. As a result of the goal of this Paper to disaggregate the data into commodities and industries, only business merchandise exports (customs basis) were used in the model. Disaggregated data were not available for merchandise or services on a balance of payments basis (services are also not available on a customs basis). Consequently, the analysis excludes direct services exports. In addition, there are some restrictions in using the Input-Output model (or any other model) which limit the scope of the analysis. The excluded sectors and the limits of the model understate the final results. If all economic phenomena could be included, the increased inputs would result in the model reporting additional jobs.

The most important of the exclusions is the direct service sector (including tourism into Canada as an "export"). In 1991, on a balance of payments basis, exports of services amounted to \$23.3 billion. Using the dollar value per job support figure for merchandise exports as a rough proxy to calculate jobs in the service sector would yield an estimated 200,000 to 400,000 total jobs (taking into consideration that many indirect, export-related services jobs are already calculated within the model - e.g., transportation services sustained by the export of goods). The inclusion of these jobs would likely increase the total number of jobs created by exports to up to 2 million.

In addition, the model multipliers do not measure "induced" effects such as the re-spending of income; and the model omits exports from the non-business sector. These inclusions would be very small and would not appreciably

influence the results. There is one further area of indirect jobs not measured by the model. The domestic re-spending of tax revenues earned by taxing profits on, and wages sustained by, export earnings is not calculated. Many jobs, especially in the "social welfare, health, and education" sectors of the economy, depend directly on tax revenues generated from taxing earnings derived from business sector exports. The results of job creation through tax re-spending is likely important, but cannot be addressed through the model used in this paper.

The inclusions of all these figures would alter the results such that, in all likelihood, approximately one job in six may depend on Canadian exports of goods and services.

Nonetheless, the primary focus of this Paper is on the job creation impact of business sector exports of goods. This approach allows us to move beyond aggregate figures to analyze results emerging at the industry level and differences apparent at the level of specific Canadian export markets. In this regard, the one in 7.5 ratio means that each billion dollars of Canadian exports of goods supported 12,016 Canadian jobs or, put differently, \$83,219 of Canadian exports of goods supported one Canadian job.

Based on similar U.S. data for the year 1990, one in thirteen civilian jobs was supported by U.S. merchandise exports.¹¹ When U.S. figures are adjusted for the average 1991 Canada-U.S. exchange rate, each billion Canadian dollars supported 16,363 American jobs, or \$60,942 Canadian supported one U.S. job. Differences between U.S. and Canadian results are substantial and reflect the differences in the structure of our industries, productivity levels, the level of technology, and differences in our export-mix and export markets. In addition, there is a substantial difference in the amount of imports used in the production process. In the U.S. in 1990, 14% of the value of total merchandise goods exported was linked to imported inputs¹²; while in Canada in 1991, this proportion was 26%.¹³ In the Input-Output model, only imports directly assembled into exported products have been removed. Indirect imports (i.e., inputs of inputs) are still in the model and are an important source of leakage of Canadian jobs. Examples of industries where there is a greater import component

¹¹ Lester Davis, *Trade and Export Supported Jobs*, U.S. Bureau of Commerce, Office of the Chief Economist, June 1992.

¹² Ibid.

¹³ Statistics Canada Input-Output Model

include the auto sector, electronic equipment, and office and business machinery.¹⁴

- **SECTORS WHERE EXPORTS SUPPORT JOBS**

The extent employment depends on exports varies widely across sectors and individual industries. Among the merchandise sectors, manufacturing sustains the largest number of jobs supported by the goods sector. The differential impact on gains in jobs across sectors partly reflects variations in productivity growth and labour/capital intensity. Manufacturing exports have been vital to the level and growth in the number of jobs supported by merchandise exports, and have also been the source of most of the gains in services jobs supported by merchandise exports.

Exports of goods support 1,071,711 jobs (approximately two-thirds of all jobs supported by Canadian merchandise exports) in the manufacturing and resource sectors, of which 741,952 jobs are sustained directly and indirectly by manufacturing industries, and 329,759 jobs are supported directly and indirectly by resource industries. In addition, another 577,684 service industry jobs are indirectly the result of goods exports in 1991.

Based on a similar study done in the U.S. for the year 1990, the U.S. results were: manufacturing -- one in 5.7 jobs depended on U.S. total merchandise exports; agriculture --one in 5.5 jobs; and services -- one in 24.4 jobs.¹⁵

- **MAJOR INDUSTRIES WHERE EXPORTS SUPPORT JOBS**

Canadian exports that support jobs are broadly based across most industries. However, traditional industries continue to dominate, with the agricultural and related services industry and the transportation equipment industry ranked at numbers one and two respectively. Table 1 provides a listing of the top fifteen industries (top ten goods and top five indirect services) for which exports of goods are directly and indirectly responsible for the most job creation. Note that the definition of total jobs for goods is different from that of total jobs in the indirect services industries (footnote 15, page 16).

¹⁴ Ibid.

¹⁵ Davis, Trade and Export.

TABLE 1
TOP GOODS AND INDIRECT SERVICES INDUSTRIES RANKED BY LARGEST
NUMBER OF
EXPORT SUPPORTED JOBS IN 1991

CANADIAN MERCHANDISE EXPORTS TO WORLD 1991

MERCHANDISE GOODS	TOTAL JOBS ¹⁶	% of TOTAL
AGRICULTURAL & RELATED SERVICES INDUSTRIES	171,176	10.38
TRANSPORTATION EQUIPMENT INDUSTRIES	144,827	8.78
PRIMARY METAL INDUSTRIES	85,195	5.17
ELECTRICAL & ELECTRONIC PRODUCTS	81,929	4.97
PAPER & ALLIED PRODUCTS INDUSTRIES	76,283	4.62
MINING INDUSTRIES	74,824	4.54
FABRICATED METAL PRODUCT INDUSTRIES	54,295	3.29
WOOD INDUSTRIES	48,579	2.95
MACHINERY INDUSTRIES	44,944	2.72
FOOD INDUSTRIES	42,401	2.57
TOTAL 10 INDUSTRIES	824,453	49.99

¹⁶ Total jobs are defined as the number of direct jobs supported in a goods industry, plus the total number of indirect jobs supported in the same sector and in all other goods sectors (i.e., not indirect services). Even though indirect jobs are located in other industries, they are attributed to the goods industry which created the "ripple" effect.

Jobs in the service industries are indirect in nature and are treated differently in the model than those in the goods sectors. Because of the constraints of the Input-Output model, each indirect service is aggregated according to its classification, rather than by the industry causing the "ripple" effect. For example, the number of indirect jobs supported in transportation services by the wood industry would be classified in transportation services, not in the wood industry. Hence, each service industry category represents the total number of indirect service jobs supported in a sector across all goods and services industries.

TABLE 1 (CONTINUED)

INDIRECT SERVICES	TOTAL JOBS	% OF TOTAL
RETAIL TRADE INDUSTRIES	119,471	7.24
WHOLESALE TRADE INDUSTRIES	112,996	6.85
TRANSPORTATION INDUSTRIES	108,296	6.57
BUSINESS SERVICE INDUSTRIES	68,694	4.16
FINANCE & REAL ESTATE INDUSTRIES	40,361	2.45
TOTAL 5 INDUSTRIES	449,818	27.27
TOTAL GOODS AND INDIRECT SERVICES	1,649,395	100.0

Source: Statistics Canada Input-Output Model. See Appendix Table 1 for a more complete listing

Jobs in the factories, farms, and other operations producing goods that are exported (jobs **directly** supported by exports) do not represent all jobs supported by exports. These operations use a vast range of goods and services produced by other businesses, which in turn require workers to produce them (jobs **indirectly** supported by exports):

- Upstream materials, parts and services that are consumed in the production chain to produce those exports.
- Plant and equipment used to produce those goods.
- A range of supplies, equipment, and services supplied downstream in the distribution chain by other businesses to move the goods to the port of export.

These jobs that are supported by upstream and downstream requirements for goods and services indirectly needed to produce exports are also numerous. In 1991, Canada's merchandise export trade with the world supported 850,391 direct jobs and 799,004 indirect jobs.¹⁷

¹⁷ See footnote 15, page 16, for a definition of direct and indirect jobs.

5. MERCHANDISE EXPORTS AND JOB SUPPORT: SELECT EXPORT MARKETS

Table 2 presents a summary of the number of jobs supported in several export markets. In addition, the table indicates the amount of Canadian export dollars necessary to support one Canadian job, as well as the number of jobs supported per billion dollars of Canadian exports. Note that exports to the U.S. create the lowest number of jobs for each billion dollars. This result is likely caused by the mix of commodities exported to the U.S., their labour intensity, and a substantial element of imported inputs (including for assembled motor vehicles). It will also be noted that each billion dollars of Canadian exports to Japan creates 43% more jobs than each billion dollars of exports to the U.S.

The differences in Canadian export-supported jobs between Japan and the U.S. are the result of many of the factors listed in the paragraph above, but most notably in the amount of Canadian content in "end" products (equipment, machinery and consumer manufactures). Exports by value to the U.S. are dominated by such manufactured end products (50%). Merchandise products exported from Canada tend to have a high import content (26% overall). This is particularly marked with respect to manufactures. Japan, on the other hand, receives a significant amount of resource-based products, including fully processed resource products, from Canada (about one-third of our total exports), with only 5% of total exports to Japan from Canada being manufactured "end" products. Resource-based processed/fabricated goods have very high Canadian content.

Nonetheless, the results also indicate that the U.S. continues to be, by far, Canada's most important trading partner for exports and job creation.

TABLE 2

EXPORTS AND JOB SUPPORT BY SELECT COUNTRY

	No. of Jobs	\$/Job	Jobs/\$billion
U.S.A.	1,132,380	90,590	11,039
MEXICO	7,351	75,631	13,222
JAPAN	111,244	63,454	15,759
SOUTH KOREA	23,761	77,823	12,850
E.C.	151,393	72,998	13,699
WORLD	1,649,395	83,219	12,016

Source: Statistics Canada Input-Output Model

● **U.S. HIGHLIGHTS**

The United States is Canada's largest trading partner dominating all aspects of Canada's trade. In 1991, the U.S. accounted for 75% of Canada's exports of merchandise trade or \$109.6 billion. Not surprisingly, the U.S. also accounts for a substantial portion of jobs supported by business sector exports of \$102.6 billion. In 1991, business sector exports to the U.S. resulted in 1,132,380 export-supported jobs or 68.7% of all export-supported jobs.

For every one billion Canadian dollars, merchandise exports to the U.S. supported 11,039 jobs in Canada. Put another way, each \$90,590 of Canadian exports to the U.S. supported one Canadian job.

Table 3 divides the Canadian economy into 13 sectors, outlining the number of jobs supported by merchandise exports from Canada to the U.S. (Tables 3 - 7 should be read in light of the background provided in footnote 15 above).

TABLE 3

MERCHANDISE EXPORTS TO U.S.A. 1991

	TOTAL JOBS
MERCHANDISE GOODS:	
AGRICULTURAL & RELATED SERVICES INDUSTRIES	70,491
FISHING & TRAPPING INDUSTRIES	10,950
LOGGING & FORESTRY INDUSTRIES	21,952
MINING, QUARRYING & OIL WELL INDUSTRIES	51,323
MANUFACTURING INDUSTRIES	567,424
TOTAL MERCHANDISE GOODS	722,140

TABLE 3 (CONTINUED)

	TOTAL JOBS
INDIRECT SERVICES:	
CONSTRUCTION INDUSTRIES	12,111
TRANSPORTATION & STORAGE INDUSTRIES	71,515
COMMUNICATION INDUSTRIES	15,733
OTHER UTILITY INDUSTRIES	18,881
WHOLESALE TRADE INDUSTRIES	78,296
RETAIL TRADE INDUSTRIES	92,622
FINANCE INSURANCE & REAL ESTATES INDUSTRIES	32,446
COMMUNITY, BUSINESS, PERSONAL SERVICES	88,636
TOTAL INDIRECT SERVICES	410,240
TOTAL GOODS AND INDIRECT SERVICES	1,132,380

Source: Statistics Canada Input-Output Model

● MEXICO HIGHLIGHTS

Mexico is one of the partners in the North American Free Trade Agreement. Future merchandise export trade is expected to grow as the NAFTA is consummated and new trading patterns develop. In 1991, however, Mexico was not a major export market, receiving only \$556 million or 0.4% of Canada's business sector exports.¹⁸

Canadian merchandise exports to Mexico sustained 7,351 export-supported jobs or 0.4% of all export-supported jobs. A billion dollars of exports to Mexico would support a comparatively high 13,222 jobs in Canada. Each \$75,631 of Canadian exports to Mexico support one Canadian job. Table 4 summarizes the sectors where Canadian merchandise exports to Mexico in 1991 supported jobs.

¹⁸ It should be noted that Canada's total exports to Mexico grew strongly in 1992 to \$783 million. Moreover, Statistics Canada estimates that our exports to Mexico have been underestimated by as much as one-third, due to the failure to record accurately shipments to U.S.-based intermediaries.

TABLE 4

MERCHANDISE EXPORTS TO MEXICO 1991

	TOTAL JOBS
MERCHANDISE GOODS:	
AGRICULTURAL & RELATED SERVICES INDUSTRIES	1,246
FISHING & TRAPPING INDUSTRIES	4
LOGGING & FORESTRY INDUSTRIES	87
MINING, QUARRYING & OIL WELL INDUSTRIES	498
MANUFACTURING INDUSTRIES	3,156
TOTAL MERCHANDISE GOODS	4991
INDIRECT SERVICES:	
CONSTRUCTION INDUSTRIES	69
TRANSPORTATION & STORAGE INDUSTRIES	536
COMMUNICATION INDUSTRIES	101
OTHER UTILITY INDUSTRIES	73
WHOLESALE TRADE INDUSTRIES	475
RETAIL TRADE INDUSTRIES	526
FINANCE INSURANCE & REAL ESTATE INDUSTRIES	177
COMMUNITY, BUSINESS, PERSONAL SERVICES	403
TOTAL INDIRECT SERVICES	2360
TOTAL MERCHANDISE GOODS AND INDIRECT SERVICES	7,351

Source: Statistics Canada Input-Output Model

- **JAPAN HIGHLIGHTS**

Canadian merchandise business sector exports to Japan in 1991 amounted to \$7 billion or 5.1% of total Canadian merchandise exports. As a significant Canadian trading partner, Japan accounted for 111,244 export-supported jobs or 6.7% of all export-supported jobs.

For every billion dollars of exports to Japan, 15,759 export-supported jobs are sustained in Canada. Each \$63,454 of Canadian merchandise exports sustained one Canadian job. Table 5 indicates the importance of merchandise exports to Japan and job creation.

TABLE 5

MERCHANDISE EXPORTS TO JAPAN 1991

	TOTAL JOBS
MERCHANDISE GOODS:	
AGRICULTURAL & RELATED SERVICES INDUSTRIES	24,035
FISHING & TRAPPING INDUSTRIES	3,165
LOGGING & FORESTRY INDUSTRIES	5,013
MINING, QUARRYING & OIL WELL INDUSTRIES	15,510
MANUFACTURING INDUSTRIES	28,464
TOTAL MERCHANDISE GOODS	76,187
INDIRECT SERVICES:	
CONSTRUCTION INDUSTRIES	1,284
TRANSPORTATION & STORAGE INDUSTRIES	10,810
COMMUNICATION INDUSTRIES	1,101
OTHER UTILITY INDUSTRIES	1,063
WHOLESALE TRADE INDUSTRIES	7,108
RETAIL TRADE INDUSTRIES	5,407
FINANCE INSURANCE & REAL ESTATE INDUSTRIES	3,048
COMMUNITY, BUSINESS, PERSONAL SERVICES	5,236
TOTAL INDIRECT SERVICES	35,057
TOTAL GOODS AND INDIRECT SERVICES	111,244

Source: Statistics Canada Input-Output Model

● **SOUTH KOREA HIGHLIGHTS**

Canadian merchandise business sector exports to South Korea in 1991 were \$1.8 billion or 1.3% of all Canadian merchandise exports. In 1991, these exports accounted for 23,761 export-supported jobs in Canada or 1.4% of all export-supported jobs.

Every billion dollars of Canadian merchandise exports to South Korea, accounts for 12,850 export-supported jobs in Canada. Each \$77,823 of Canadian merchandise exports to South Korea supports one Canadian job. Table 6 outlines the number of jobs supported by merchandise exports from Canada to South Korea.

TABLE 6

MERCHANDISE EXPORTS TO SOUTH KOREA 1991

	TOTAL JOBS
MERCHANDISE GOODS:	
AGRICULTURAL & RELATED SERVICES INDUSTRIES	3,207
FISHING & TRAPPING INDUSTRIES	58
LOGGING & FORESTRY INDUSTRIES	383
MINING, QUARRYING & OIL WELL INDUSTRIES	3,965
MANUFACTURING INDUSTRIES	7,968
TOTAL MERCHANDISE GOODS	15,581

TABLE 6 (CONTINUED)

INDIRECT SERVICES:	TOTAL JOBS
CONSTRUCTION INDUSTRIES	328
TRANSPORTATION & STORAGE INDUSTRIES	2,540
COMMUNICATION INDUSTRIES	286
OTHER UTILITY INDUSTRIES	332
WHOLESALE TRADE INDUSTRIES	1,668
RETAIL TRADE INDUSTRIES	948
FINANCE INSURANCE & REAL ESTATE INDUSTRIES	729
COMMUNITY, BUSINESS, PERSONAL SERVICES	1,349
TOTAL INDIRECT SERVICES	8,180
TOTAL GOODS AND INDIRECT SERVICES	23,761

Source: Statistics Canada Input-Output Model

- **EC (12) HIGHLIGHTS**

Canadian merchandise business sector exports to the EC in 1991 amounted to \$11 billion or 8% of all Canadian exports. In 1991, 151,393 export-supported jobs were sustained in Canada as a result of these exports.

Every billion dollars of Canadian merchandise exports to the EC accounts for 13,699 export-supported jobs in Canada. Each \$72,998 of exports to the EC supports one Canadian job. Table 7 details the number of jobs supported by Canadian merchandise trade to the EC.

TABLE 7

MERCHANDISE EXPORTS TO EC (12) 1991

	TOTAL JOBS
MERCHANDISE GOODS:	
AGRICULTURAL & RELATED SERVICES INDUSTRIES	8,971
FISHING & TRAPPING INDUSTRIES	3,160
LOGGING & FORESTRY INDUSTRIES	5,090
MINING, QUARRYING & OIL WELL INDUSTRIES	17,280
MANUFACTURING INDUSTRIES	67,380
TOTAL MERCHANDISE GOODS	101,881
INDIRECT SERVICES:	
CONSTRUCTION INDUSTRIES	1,669
TRANSPORTATION & STORAGE INDUSTRIES	12,546
COMMUNICATION INDUSTRIES	1,909
OTHER UTILITY INDUSTRIES	1,871
WHOLESALE TRADE INDUSTRIES	9,932
RETAIL TRADE INDUSTRIES	8,893
FINANCE INSURANCE & REAL ESTATE INDUSTRIES	3,968
COMMUNITY, BUSINESS, PERSONAL SERVICES	8,724
TOTAL INDIRECT SERVICES	49,512
TOTAL GOODS AND INDIRECT SERVICES	151,393

Source: Statistics Canada Input-Output Model

6. POLICY CONSIDERATIONS

- A. Imports of intermediate materials by commodity could be used to examine the type of merchandise either not available in Canada, or not competitively available. The Input-Output model provides details of the imports of intermediate goods used in the production of all goods and, in the case of this Paper, for export goods.
- B. The mix of commodities exported to different markets and the number of jobs related to those commodities could provide strategic insight into jobs and Canadian competitiveness.
- C. The ordering of commodities in relation to export-supported jobs provides an indication of the competitiveness of a good. If a sector exhibits a high level of Canadian exports, supports a high level of export-supported employment, and has a higher than average "multiplier", it should be considered for further investigation. When examined with other important economic parameters, such as capital investment, productivity, research and development, and the level of technology, it may well be possible to identify market-based "winners" and future "winners". This analysis provides one more economic key in developing a strategy for enhancing both Canada's industrial international competitiveness and encouraging domestic growth.
- D. By using established international definitions of high technology industries, it is possible to determine the success of these industries in terms of exports and job creation.
- E. The importance of the military in terms of product support, high technology, and research and development may be assessed in terms of jobs and the demand for intermediate goods.
- F. Input-Output simulations do not have an element of time. They can, however, provide a snapshot for each year as to changes in the ability to create jobs, as well as changes in labour productivity. This type of analysis would require computer runs of the model over a period of five to seven years in order to achieve a more comprehensive view of the impact of exports on job creation.

- G. Changes in the market share of resources, manufacturing, agriculture, and indirect services, provide an indication of structural change in the economy. When analyzed with changes in technology coefficients over time, it is possible to determine the importance of structural change. A comparison with other countries' data would be necessary to determine relative changes.
- H. The Input-Output model is useful for estimating the impact of changes in trading patterns and technologies when results are obtained for different time periods.

7. CONCLUSIONS

International trade is an important factor in creating/supporting jobs in Canada. More than one-fifth of Gross Domestic Product, and 13.4% of all jobs depend on exports of goods as determined through the Input-Output model used in this Paper. The number of jobs supported in Canada depends to a large extent on the mix of commodities being exported, as well as the percentage of imports used in the production process. Other factors are also important, including productivity, labour intensities, and the level of technology. The number of jobs created, rather than supported, will depend on capacity utilization, labour/capital ratios, level of technology, cost of labour, labour productivity, availability of skilled labour, type of industry, and the long-term economic and industrial outlook.

Other important considerations include:

1. The sectors with the greatest value-added create the greatest number of jobs in Canada.
2. Sectors with a high labour intensity or a high capital intensity create jobs in different ways. Sectors with a high labour intensity tend to have high direct job creation effects; sectors with a high capital content tend to have high indirect effects.
3. Even though the manufacturing sector accounts for a majority of products exported, many export-linked jobs in Canada are located in the service sector (in this model - indirect services). Of the export markets studied, about one-third of the jobs supported were generated (indirectly) in the service industries.

4. There are two strategic, trade-related methods to increase jobs in Canada. One is to replace imports used as intermediate inputs with those which are made in Canada, or at least increase their Canadian value-added. But for governments to attempt to dictate this course would be inconsistent with our international trading obligations in most instances, would likely lead to retaliation against Canadian exports, and could limit our access to cost-competitive inputs needed for down-stream production. Such government-directed import substitution would undermine Canadian competitiveness. The second approach is to provide a domestic and trade policy framework that will encourage greater export competitiveness. Exports have been forecast to grow between four and five percent annually for the next twenty years (DRI). If exports increase by only one percent more each year, within ten years Canada would have generated a minimum of at least 165,000 additional jobs.

5. Compared to job creation in the U.S., Canada generates about 27% less jobs per billion dollars Canadian. The most significant factors explaining this difference are: 1) the amount of imports used in the production of goods for export, and (2) the mix of commodities sold in foreign markets, especially the importance of job-rich high technology production in the U.S. (e.g., the aeronautics industry).

TABLE 1
MERCHANDISE EXPORTS AND JOB CREATION
 1991 \$C(000)

INDUSTRY	TOTAL JOBS *					
	JAPAN	EC	SOUTH KOREA	MEXICO	U.S.A.	WORLD
MERCHANDISE GOODS						
AGRICULTURAL & RELATED SERVICES IND	24,035	8,971	3,207	1,246	70,491	171,176
FISHING & TRAPPING INDUSTRIES	3,165	3,160	58	3	10,950	18,934
LOGGING & FORESTRY INDUSTRIES	5,013	5,090	383	87	21,952	34,999
MINING INDUSTRIES	14,664	15,866	3,613	442	26,492	74,824
CRUDE PETROLEUM & NATURAL GAS	342	521	198	36	16,784	18,895
QUARRY & SAND PIT INDUSTRIES	107	134	22	3	818	1,223
FOOD INDUSTRIES	5,966	5,616	298	118	26,135	42,401
BEVERAGE INDUSTRIES	94	167	12	5	2,643	3,056
TOBACCO PRODUCTS INDUSTRIES	4	220	1	0	28	311
RUBBER PRODUCTS INDUSTRIES	241	492	64	45	14,894	16,349
PLASTIC PRODUCTS INDUSTRIES	230	611	63	41	8,735	10,398
LEATHER & ALLIED PRODUCTS IND.	77	283	52	19	3,602	4,367
PRIMARY TEXTILE & TEXTILE PROD. IND	323	1,390	394	108	12,863	17,602
CLOTHING INDUSTRIES	285	494	37	16	5,606	7,103
WOOD INDUSTRIES	7,550	6,479	347	65	31,530	48,579
FURNITURE & FIXTURE INDUSTRIES	55	290	10	18	10,473	11,156
PAPER & ALLIED PRODUCTS INDUSTRIES	3,222	10,669	1,035	361	54,201	76,283
PRINTING, PUBLISHING & ALLIED IND.	568	1,334	144	48	12,579	16,122
PRIMARY METAL INDUSTRIES	2,686	9,237	2,640	487	59,471	85,195
FABRICATED METAL PRODUCT INDUSTRIES	1,228	3,933	606	260	43,229	54,295
MACHINERY INDUSTRIES	756	3,710	500	203	33,857	44,944
TRANSPORTATION EQUIPMENT INDUSTRIES	789	8,773	194	833	124,629	144,827
ELECTRICAL & ELECTRONIC PRODUCTS	1,210	6,205	414	322	67,286	81,929
NON-METALLIC MINERAL PRODUCTS IND.	262	747	114	23	9,174	11,021
REFINED PETROLEUM & COAL PRODUCTS	364	552	130	23	4,341	6,137
CHEMICAL & CHEMICAL PRODUCTS IND.	1,908	3,216	782	106	25,666	37,120
OTHER MANUFACTURING INDUSTRIES	643	2,961	132	58	16,482	22,757
TOTAL ALL MERCHANDISE GOODS	75,790	101,122	15,448	4,975	714,911	1,062,003
INDIRECT SERVICES						
SERVICE RELATED TO MINERAL EXTRACT.	396	759	132	17	7,228	9,708
CONSTRUCTION INDUSTRIES	1,284	1,669	328	69	12,111	17,927
TRANSPORTATION INDUSTRIES	9,792	11,940	2,312	486	66,420	108,296
PIPELINE TRANSPORT INDUSTRIES	66	99	28	4	2,872	3,215
STORAGE & WAREHOUSING INDUSTRIES	952	508	200	46	2,222	8,766
COMMUNICATION INDUSTRIES	1,101	1,909	286	101	15,733	21,726
OTHER UTILITY INDUSTRIES	1,063	1,871	332	73	18,881	24,292
WHOLESALE TRADE INDUSTRIES	7,108	9,932	1,668	475	78,296	112,996
RETAIL TRADE INDUSTRIES	5,407	8,893	948	526	92,622	119,471
FINANCE & REAL ESTATE INDUSTRIES	2,440	3,397	594	151	28,816	40,361
INSURANCE INDUSTRIES	608	571	136	26	3,630	5,899
BUSINESS SERVICE INDUSTRIES	2,649	4,491	728	219	55,322	68,694
HEALTH SERVICES INDUSTRY	6	6	1	0	44	68
ACCOMMODATION & FOOD SERVICE IND.	794	1,399	196	59	11,274	15,430
AMUSEMENT & RECREATIONAL SERVICES	74	125	18	6	1,163	1,553
PERSONAL & HOUSEHOLD SERVICE IND.	60	103	13	5	768	1,079
OTHER SERVICE INDUSTRIES	1,653	2,601	393	115	20,065	27,912
TOTAL ALL INDIRECT SERVICES	35,454	50,271	8,312	2,377	417,469	587,392
TOTAL ALL GOODS AND INDIRECT SERVICES	111,244	151,393	23,761	7,351	1,132,380	1,649,395

Source: Statistics Canada Input-Output Model

* Total jobs in a goods sector are defined as the sum of direct jobs in that goods sector plus all relevant indirect goods jobs in that sector plus all relevant indirect goods jobs across all other goods sectors.

* Total jobs in an indirect service industry are defined as the aggregate of all relevant indirect service jobs across all goods and service industries.

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