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TRADE AND ECONOMIC POLICY PAPER

Department of Foreign Affairs
and International Trade



Ministère des Affaires étrangères
et du Commerce international

CANADA

Canada: Drawers of Water, Hewers of Wood and Dangers of Other Myths

by

Prakash Sharma
Trade and Economic Analysis (EET)

with

Allen Brown
Middle East (GMR)

and

David Weiner
Trade and Economic Analysis (EET)

(December 1996)

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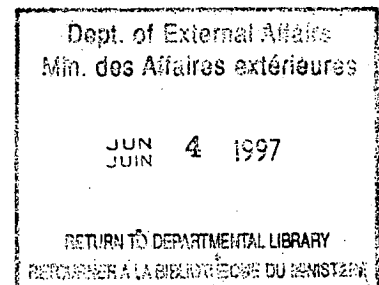
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Canada:
Drawers of Water, Hewers of Wood and
Dangers of Other Myths

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...Le temps est arrive où nous devons décider si nous voulons simplement demeurer des bucherons et des porteurs d'eau...

...The time has arrived when we are to decide whether we will simply be hewers of wood and drawers of water...

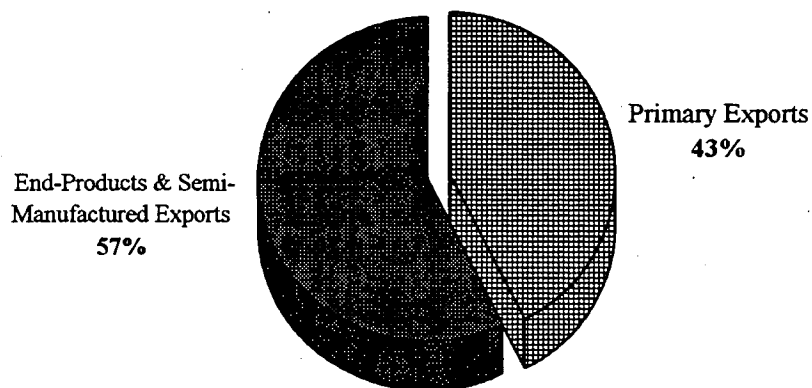
—Sir Samuel L. Tilley¹

¹ Sir Samuel Tilley was the Minister of Finance in 1879 when the government of Sir John A. MacDonald enacted its high tariff National Policy.

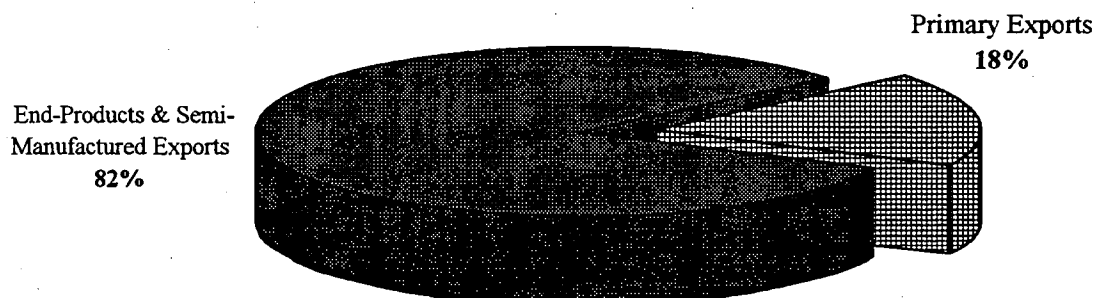
Executive Summary

Is Canada destined to export primarily resource-products forever? Peddlers of gloom-and-doom scenarios for Canada would have one believe that Canadians are stuck in the misery of a resource-based economy. But the significant change in the composition of Canada's exports from 1963 to 1995 tells a different story.

Canadian Merchandise Exports in 1963



Canadian Merchandise Exports in 1995

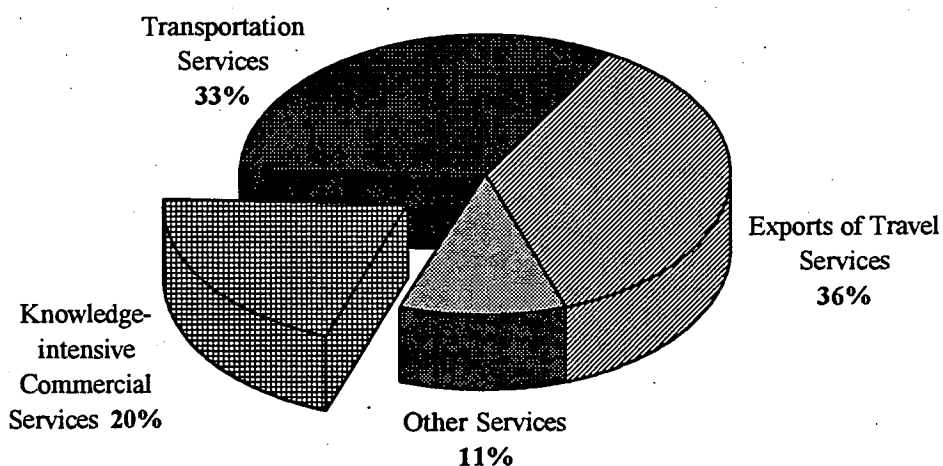


Primary resource-based exports² fell as a proportion from 43% to 18% over the past 32 years, while end-products and semi-manufactured exports increased from 57% to 82% of total merchandise exports.

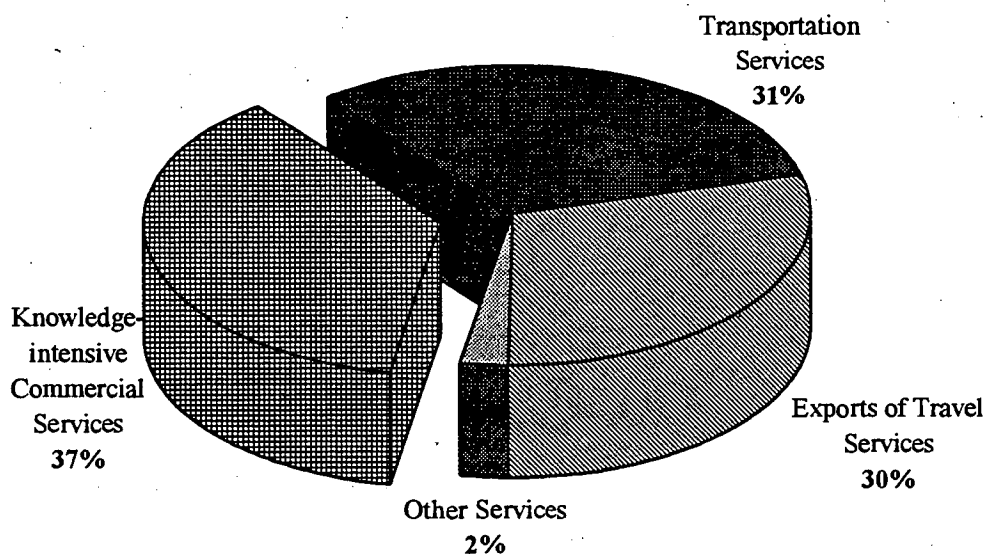
² Primary resource-based exports, in this paper, follow the commodity grouping used by Statistics Canada: live animals; food, feed, beverages and tobacco; and crude materials, inedible. See Statistics Canada catalogues 65-001 and 65-003.

Consider also Canada's trade in services. Commercial services include such trade groups as telecommunications, computer and information services; insurance and financial services; management services; R&D services, intellectual property services; and engineering, architectural and other technical services—the buying and selling of knowledge-intensive activities.

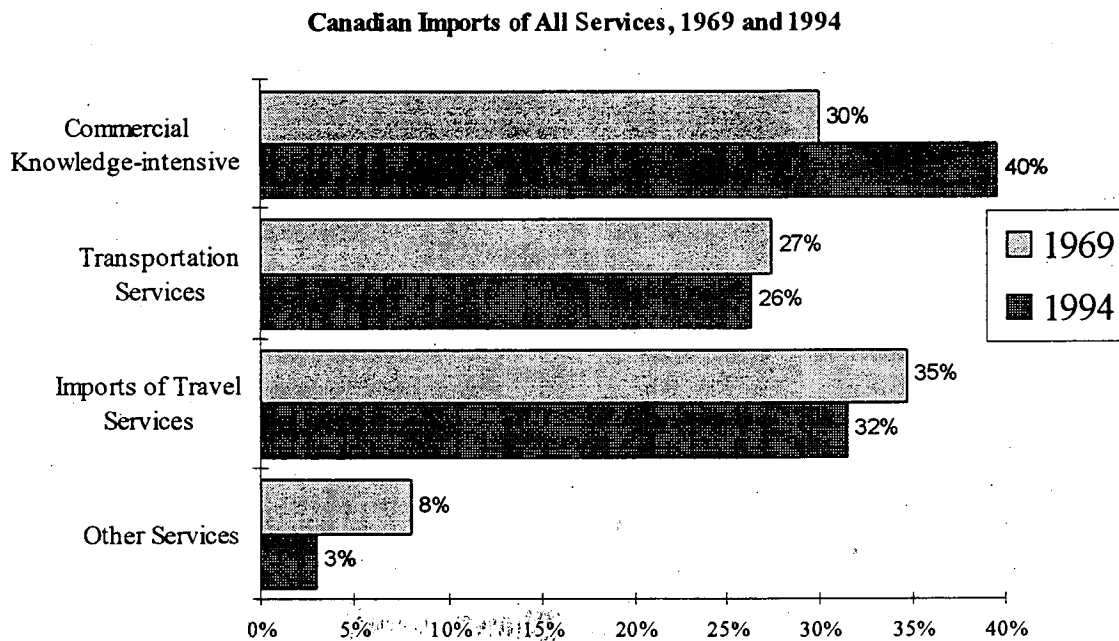
Canadian Exports of Services 1969



Canadian Exports of Services 1994



The share of commercial services in Canada's total export of services has expanded from 20% in 1969 to 37% in 1994. Likewise, the growth in imports of commercial services from 1969 to 1994 provides interesting insights. The increased purchases abroad of knowledge-intensive commercial services actually reflect the fact that Canadian workers and business have improved their ability to move into high-tech activities over this period.



The following table contrasts the “myths” with the “reality” which emerges from an analysis of recent trends in Canada's foreign trade:

Myth	Reality
Natural resources make up the bulk of Canadian exports.	Primary products accounted for only 18% of Canadian exports in 1995.
Tearing down tariff walls would force Canada to revert to a resource-based economy—where Canada traditionally has an export advantage.	The elimination of trade distortions has led to an expansion in Canada's inter-industry as well as intra-industry trade. As a result, the share of non-resource products in Canadian exports has steadily increased, contrary to gloom-and-doom predictions.

Myth	Reality
Freer trade under the FTA and NAFTA have made Canada more dependent on auto and auto-parts exports.	The share of auto and auto-parts in Canadian exports has declined since the FTA and continues on a downward trend.
Foreign corporations will not locate their production in Canada, without a tariff penalty. Without protection no resource-based economy can achieve a diversified output and export composition.	Market forces reallocate resources and facilitate industrialization over time, provided that protectionist and trade distorting policies are avoided. Access to international markets is essential.
Canadian exports compete on the backs of low-paid Canadian workers.	According to 1992 OECD data, export-oriented manufacturing industries in Canada topped those in all the OECD countries in terms of high-wage jobs. Exports support high-paying jobs in Canada.
The growth of the service sector means that well-paying manufacturing jobs will disappear and Canada will export labour-intensive services.	Knowledge-intensive activities generally have high productivity and real wages. Canadian exports of knowledge-intensive business services have been trending upward since 1969. Exports of business services sustain high real wage jobs.
Foreign-owned subsidiaries are only here to serve the Canadian market.	About 62% of business service exports go to the U.S., of which over 60% are exported through affiliates.
Foreign corporations operating in Canada do most of their R&D at home. Only a few knowledge-intensive and high real wage paying service jobs are created in Canada.	Trade in knowledge-intensive services matters, not R&D expenditures <i>per se</i> . For instance, U.S. affiliates in Canada engage in knowledge-intensive activities which they cannot obtain from their headquarters in the U.S. and which they buy from Canada for their U.S. operations.

The shift of Canadian exports from a resource-base to a more advanced industrialized economy is set to continue in the future. In the face of globalization and rapid changes in information and transportation technology, workers and firms in Canada are responding to market forces and are making the necessary structural adjustments. The upshot is that:

1. Canada's foreign trade is vigorously contributing to the speed of restructuring;
2. Canada's foreign trade pattern has shifted to a knowledge-based economy;
3. Canada is set to move up the ladder of advanced G-7 economies.

Policy discussion. The key question is whether government policy has facilitated, or obstructed, beneficial structural change in the economy. If the myths outlined above in this paper are allowed to obscure the realities, there is a danger that policymakers and bureaucrats will not formulate the forward-looking trade policy that is necessary to assure Canada's success. There is the danger that organized lobbies of well-entrenched sectoral interests could unduly influence the policy making process. Such an outcome will be to the detriment of sectors which are increasingly important for the fast evolving Canadian economy.

Given that the shift toward knowledge-intensive activities will continue:

- Government **domestic policies** should be aimed at eliminating or minimizing distortions that could hinder competitive market forces in allocating resources in Canada.
- Regulations and barriers to entry in the Canadian marketplace should be abolished.
- More private saving and investment will improve quality investment and raise productivity of workers and firms, including exporters, in Canada.

Imports are beneficial not only because they expand consumer choice but also because knowledge-intensive imports bring in new technology and know-how which can be used as inputs for high-tech goods and services for both domestic and export markets. However, only successful and competitive Canadian exporters will be able to support and create jobs in Canada.

- A sound and outward-oriented **trade policy** will help Canadian companies remain competitive and able to compete in international markets.

An efficient and effective **trade development** programme should dovetail with the changing composition of Canadian exports. It may be necessary to reassess and recast trade development programmes to reflect a Canadian economy which is exporting an increasing proportion of knowledge-intensive goods and services. New initiatives should ensure that:

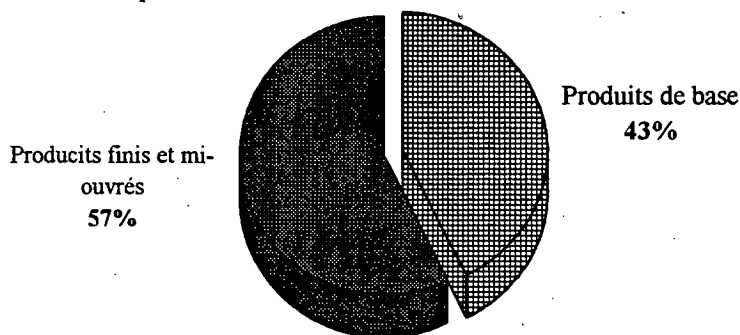
- Rent-seeking by established and dominant firms in traditional sectors does not limit access to trade promotion programmes by “up-starts” who trade in knowledge-intensive trade products.

Finally, the talk of Canada slipping into the ranks of resource-based third world economies should be given a burial. Knowledge-intensive activities will increasingly play a greater role in helping Canadians workers and firms restructure themselves to fit into an advanced industrialized economy. At the same time, the resource-sector will continue to make a significant contribution to the Canadian economy.

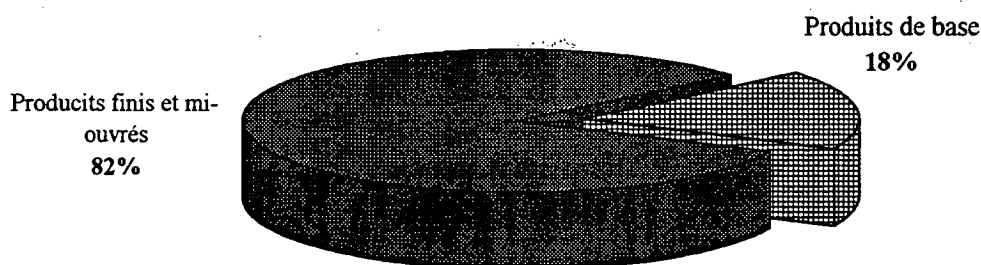
Résumé

Le Canada est-il destiné à exporter principalement et indéfiniment des produits dérivés de matières premières? Les partisans de scénarios sombres pour le Canada voudraient nous faire croire que les Canadiens sont embourbés dans les difficultés propres à une économie axée sur les ressources. Pourtant, les changements significatifs qui ont marqué la composition des exportations du Canada, de 1963 à 1995, nous font voir bien autre chose.

Exportations Canadiennes des Marchandises en 1963



Exportations Canadienne de Marchandises en 1995

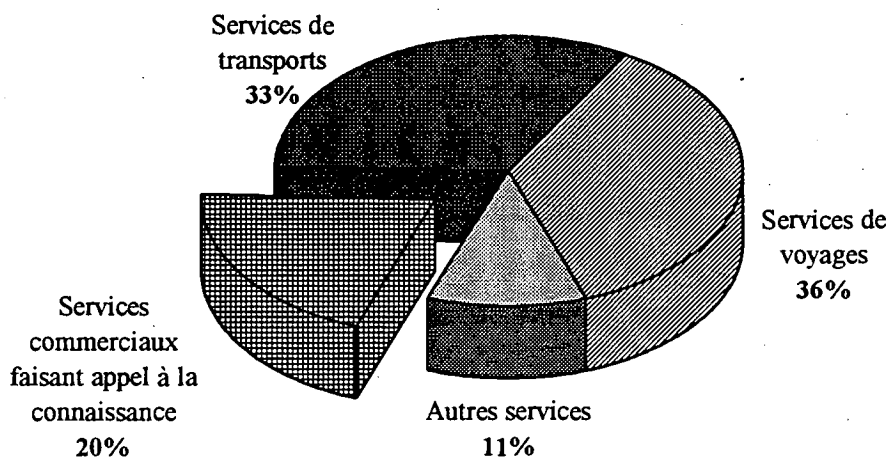


Au cours des 32 dernières années, la proportion des exportations axées sur les ressources primaires est passée de 43 à 18%, tandis que dans le cas des produits finis et semi-finis elle est passée de 57 à 82% des exportations totales de marchandises.

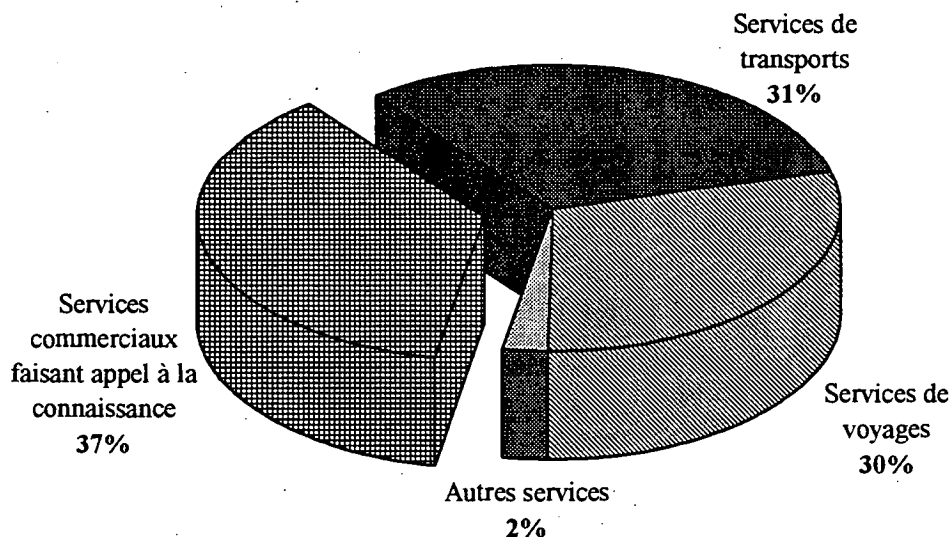
Considérons également le commerce des services du Canada. Les services commerciaux comprennent des groupes tels que les services de télécommunications et d'informatique; les services financiers et d'assurance;

les services de gestion; les services de R-D, les services liés à la propriété intellectuelle; les services de génie et d'architecture et les autres services techniques— l'achat et la vente d'activités intensives de connaissances.

Exportations Canadiennes de services en 1969



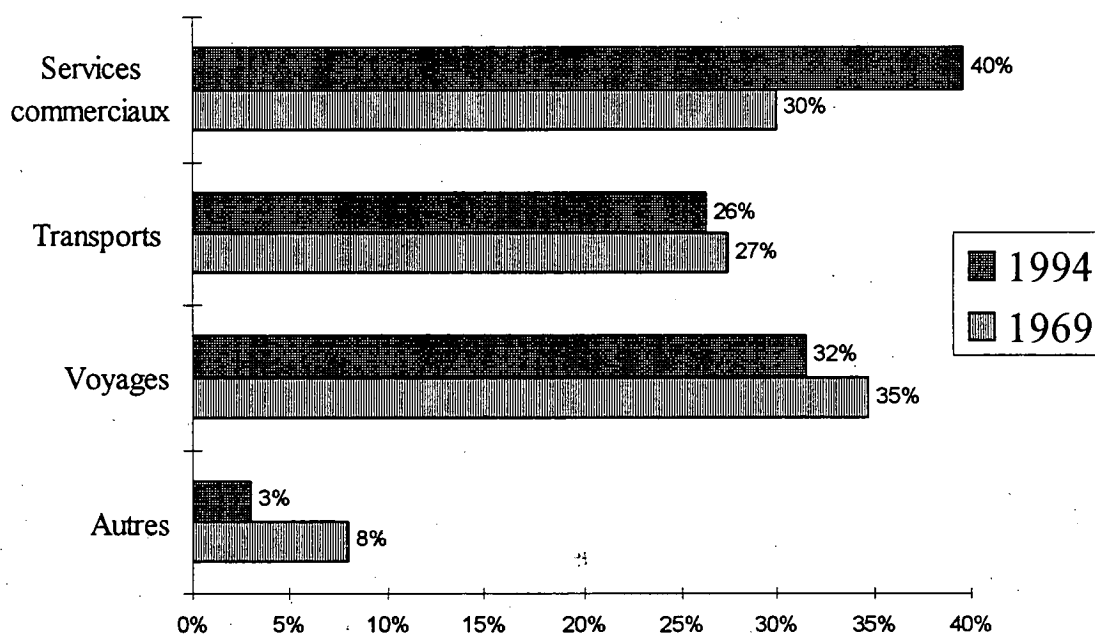
Exportations Canadiennes de services en 1994



La part des services commerciaux dans les exportations totales de services du Canada est passée de 20 %, en 1969; à 37 % en 1994. De même, la croissance des importations de services commerciaux de 1969 à 1994 nous fournit un intéressant tableau de la situation. Les achats accrus, à

l'étranger, de services commerciaux à forte intensité de connaissances reflètent actuellement le fait que les entreprises et les travailleurs canadiens ont amélioré leur capacité de se livrer à des activités de haute technologie pendant cette période.

Importations Canadiennes de services, 1969 et 1994



Le tableau suivant oppose les « mythes » aux « réalités »; ces données ressortent d'une analyse des tendances récentes du commerce extérieur du Canada.

Mythes	Réalités
Les ressources naturelles constituent la majeure partie des exportations canadiennes.	En 1995, les produits primaires n'ont représenté que 18 % des exportations canadiennes.
L'élimination des droits de douane forcerait le Canada à revenir à une économie axée sur les ressources — économie dans laquelle le Canada a toujours bénéficié d'un avantage	L'élimination des distorsions des échanges a entraîné une expansion du commerce intersectoriel et intrasectoriel du Canada. Par conséquent, la part des produits

Mythes	Réalités
en matière d'exportations.	autres que les ressources dans les exportations canadiennes a augmenté régulièrement, contrairement aux prédictions sombres qui avaient été faites.
La libéralisation du commerce en vertu de l'ALE et de l'ALENA a accru la dépendance du Canada à l'égard des exportations d'automobiles et de pièces d'automobiles.	La part des automobiles et des pièces d'automobiles dans les exportations canadiennes a diminué depuis l'entrée en vigueur de l'ALE et poursuit sa tendance à la baisse.
Les entreprises étrangères ne choisiront pas le Canada comme site de leur production, sans être soumises à l'imposition de droits. Sans protection, aucune économie axée sur les ressources ne peut parvenir à une composition diversifiée de la production et des exportations.	Les forces du marché réaffectent les ressources et facilitent l'industrialisation avec le temps, à condition qu'on évite les politiques protectionnistes et les politiques créant des distorsions des échanges. L'accès aux marchés internationaux est essentiel.
Les exportations canadiennes peuvent être concurrentielles, mais au détriment des salariés canadiens économiquement faibles.	D'après les données de l'OCDE de 1992, les industries manufacturières du Canada qui sont axées sur les exportations surpassent celles de tous les autres pays de l'OCDE pour ce qui est des emplois à salaires élevés. Les exportations soutiennent les emplois à salaires élevés au Canada.
La croissance du secteur des services signifie que les emplois bien rémunérés dans la fabrication disparaîtront et que le Canada exportera des services à forte intensité de main-d'oeuvre.	Les activités intensives de connaissances correspondent généralement à une forte productivité et à des salaires réels élevés. Depuis 1969, les exportations canadiennes de services commerciaux à forte intensité de connaissances affichent des tendances à la hausse. Les exportations de services

Mythes	Réalités
	commerciaux soutiennent des emplois commandant des salaires réels élevés.
Les filiales à propriété étrangère ne sont installées dans notre pays que pour servir le marché canadien.	Environ 62 % des exportations de services commerciaux sont destinés aux États-Unis; de ce pourcentage, plus de 60 % sont exportés par l'entremise de filiales.
Les entreprises étrangères établies au Canada effectuent la majorité de leur R-D dans leur pays d'origine. Seuls quelques emplois dans les services à forte intensité de connaissances et commandant des salaires réels élevés seront créés au Canada.	Ce qui importe, ce sont les échanges de services à forte intensité de connaissances, et non pas les dépenses de R-D proprement dites. Par exemple, les filiales américaines au Canada s'engagent dans des activités intensives de connaissances qu'elles ne peuvent obtenir de leur siège social aux États-Unis et qu'elles achètent du Canada pour leurs entreprises aux États-Unis.

Le passage des exportations canadiennes d'une économie axée sur les ressources vers une économie industrialisée plus avancée devrait se poursuivre dans le futur. Face à la mondialisation et aux changements rapides qui se produisent dans les technologies de l'information et des transports, les travailleurs et les entreprises du Canada réagissent aux forces du marché et procèdent aux changements structurels nécessaires. Les conséquences sont les suivantes :

1. le commerce extérieur du Canada contribue vigoureusement à la rapidité de la restructuration;
2. le commerce extérieur du Canada a transformé l'économie du pays en une économie basée sur l'information;
3. le Canada est prêt à gravir les échelons des économies avancées des pays du G-7.

Questions de politiques. La principale question est de savoir si la politique gouvernementale a facilité ou obstrué le changement structurel bénéfique de l'économie. Si l'on permet aux mythes énoncés plus haut d'obscurcir les réalités, les décideurs et les bureaucrates risquent de ne pas formuler les politiques commerciales tournées vers l'avenir qui sont nécessaires pour assurer la réussite du Canada. On court le danger que des lobbies d'intérêts sectoriels bien implantés puissent indûment influencer le processus d'élaboration des politiques. Un tel résultat nuirait aux secteurs qui ont de plus en plus d'importance pour une économie canadienne en évolution rapide.

Si l'on suppose que le passage vers des activités intensives de connaissances va se poursuivre,

- les **politiques intérieures** du gouvernement devraient viser à éliminer ou à réduire au minimum les distorsions qui pourraient empêcher les forces concurrentielles du marché de répartir les ressources au Canada;
- les règlements et les obstacles qui entravent l'accès au marché canadien devraient être abolis;
- des économies et des investissements privés plus importants amélioreront les investissements de qualité et accroîtront la productivité des travailleurs et des entreprises, y compris des exportateurs, au Canada.

Les importations sont bénéfiques non seulement parce qu'elles élargissent l'éventail de choix des consommateurs, mais aussi parce que les importations intensives de connaissances sont assorties de nouvelles technologies et d'un nouveau savoir-faire qui peuvent servir d'intrants pour les biens et services de haute technologie, sur le marché intérieur comme sur le marché des exportations. Toutefois, seuls les exportateurs canadiens qui sont concurrentiels et réussissent seront en mesure de soutenir et de créer des emplois au Canada.

- Une **politique commerciale** saine et axée sur l'extérieur aidera les entreprises canadiennes à demeurer compétitives et aptes à soutenir la concurrence sur les marchés internationaux.

Un programme efficace d'**expansion du commerce** devrait concorder avec la composition en évolution des exportations canadiennes. Il pourrait

être nécessaire de réévaluer et de reformuler les programmes d'expansion du commerce de manière à refléter une économie canadienne qui exporte une proportion croissante de biens et services à forte intensité de connaissances. Les nouvelles initiatives devraient faire en sorte que :

- la poursuite du profit par de grandes entreprises déjà établies dans des secteurs traditionnels n'empêche pas les entreprises qui « démarrent » et se spécialisent dans les produits axés sur les connaissances d'avoir accès aux programmes de promotion du commerce.

Enfin, il faut mettre un terme à la conception selon laquelle le Canada glisse dans les rangs des économies du tiers monde axées sur les ressources. Les activités intensives de connaissances joueront un rôle de plus en plus grand pour aider les entreprises et les travailleurs canadiens à se recycler pour s'adapter à une économie industrialisée de pointe. En même temps, le secteur des ressources naturelles continuera de contribuer de façon significative à l'économie canadienne.

1. Introduction

This paper asks:

- Does Canada's trade performance fit the perception that Canada is bound to remain primarily an exporter of natural resources?
- What is the pattern for the share of Canada's total exports of resource-based goods and services vs. exports of manufactures?
- What policy implications emerge when new facts leave old perceptions in the dustbin of history?

The composition of Canadian firms' exports depends, in addition to the availability of raw materials, on their access to a suitably skilled labour force, quality inputs, machines and materials, and an overall well-tuned and open domestic economy.

The composition of a country's exports or imports does not matter, provided that people and firms are able to earn high real incomes. New knowledge and advanced technologies are a source of higher productivity, which translates into higher real incomes in the country.³ The manufacturing sector is often seen as using cutting-edge knowledge and technology, and as supporting high paying jobs. Hence, there is a common perception that a shrinking manufacturing base is bound to push down real incomes in the country. This argument, however, has validity only in certain limited circumstances.

Natural resources are assets with which countries such as Argentina, Australia, New Zealand, Canada and others are abundantly endowed. Most people believe that the kind of labour needed for felling trees, digging for metals and minerals, and drilling for oil and gas does not require the level of skill needed by manufacturing industries. This is not necessarily true, however. In fact the exploitation of natural resources is increasingly a high-skill and capital-intensive process. To achieve higher productivity, firms in

³ Productivity is the value of goods and services produced per hour of work. Productivity growth, essential for higher living standards, comes about mainly through time-saving innovations, more and better equipment, greater new knowledge, advanced skills and more efficient organizations.

the resource-based sector continually update their capital stock, which embodies new knowledge and advanced technology. Trade in natural resource-based goods and services, therefore, can also support high real incomes.⁴

In Canada, as for other industrialized countries, the shift to a post-industrial or knowledge-based economy has been marked by an increase in the service sector share of GDP. The performance of the service sector is increasingly important for policymaking. Yet, scanty data render the service sector an unknown frontier. Many policymakers believe productivity growth to be either negligible or modest in the service industry. Service jobs are considered to be low paying because productivity and knowledge-content in services is also perceived to be low.

One purpose of this paper is to demonstrate that it is natural for a mature economy to see the relative contribution of its natural resource-based economy decline, as its manufacturing and service sectors expand. This has been true for Canada, where exporting firms have been successful in changing the composition of Canadian exports from largely natural resource-based exports to largely exports of knowledge-intensive goods and services.

In short:

- Canada has not fallen from the ranks of other advanced industrial countries and is not, as many think, fast slipping back to where we will be earning our living by exporting primarily resource-based goods and services.
- As Canada has become more integrated in the world economy over the last two decades, Canadian firms and workers have moved into producing, importing and exporting a larger share of manufactured products.
- The Canadian economy is dynamic, flexible and has had the capacity to restructure itself so as to move away from its initial resource-base to become an advanced and knowledge-based economy.

⁴ One popular example is that the value-added content in potato chips tends to be higher than in DRAM computer chips. Do you bring in more money exporting computer chips (a high-technology product) or potato chips (a natural resource-based product)?

- The question of whether the export share of services or end-products will continue to increase is not central to whether the economy will continue to support high real income jobs. What matters is the high level of advanced and knowledge-intensive activities that increase productivity of Canadian workers. In the future, firms and workers in Canada should be able to respond to opportunities and incentives emerging in international markets by engaging in more knowledge-intensive activities as they have in the transition from a resource-based to a modern economy. High productivity activities will continue to translate into high real-wage jobs for Canadian workers.

Gloom-and-doom scenarios for the future of the Canadian economy are neither consistent with past trends nor with current facts. Our analysis shows that firms and people in Canada, over the past three decades, have adapted well to these international opportunities and challenges. We see positive signs in the Canadian economy that this trend will continue. In the future, the expansion of our international trade will continue to support high real income jobs in Canada.

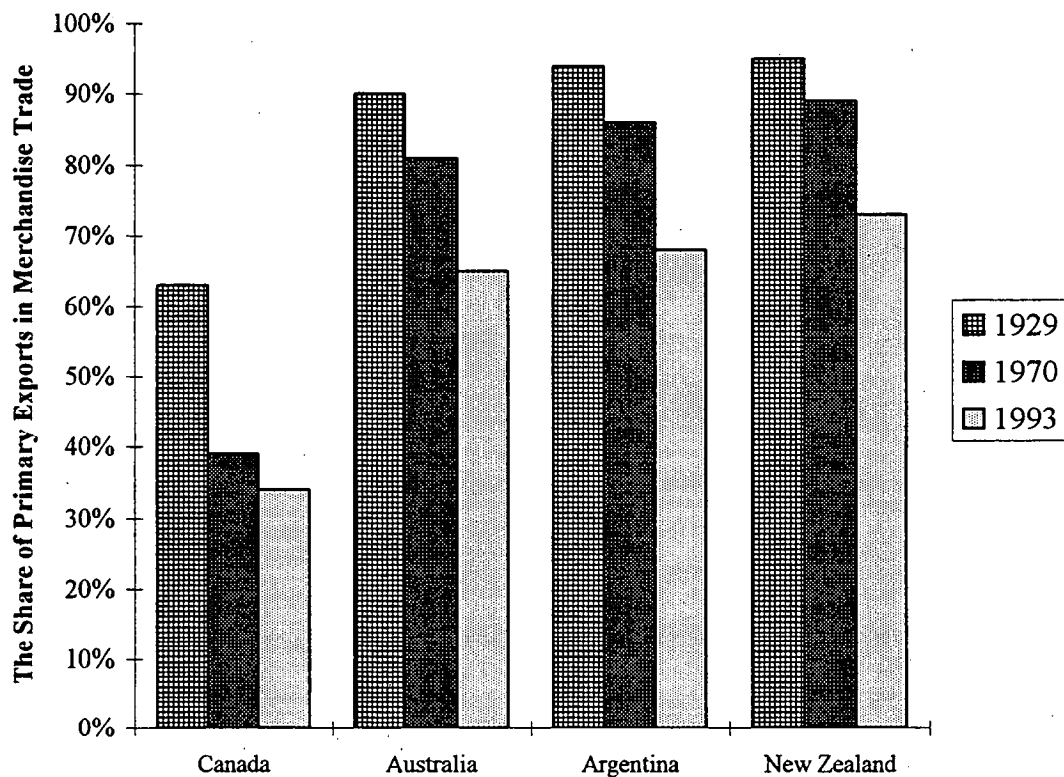
2. Prosperity and diversity in a natural resource-based economy

The experience of countries with rich endowments of natural resources in sustaining long term economic growth has been mixed. Canada has been successful in transforming its resource-based economy to an advanced economy. Nonetheless, some commentators pessimistic about Canada have extrapolated the structural changes taking place in the 1990s as representing forces pushing the Canadian economy onto a stagnant plateau of low-incomes that they consider characteristic of resource-based developing countries.

Historically, a number of people have held the view that Canada is destined to remain a resource-based economy. The well-known **staple thesis** posits that economic growth in Canada has been tied to a sequence of exports of staple and primary products, i.e., fish and furs in the 17th and 18th centuries, timber in the 19th century, foodstuffs (principally wheat) in the 19th and 20th centuries, and minerals (including base and precious metals, pulp and paper, oil and natural gas) in the 20th century. The thesis holds that staple exports financed the development of the rest of the economy. For instance, the wheat sector boom between 1886 and 1914, helped real GDP in Canada to grow by 150% while the population increased from 5.1 to 7.9 million.

Facts do not support the conclusion that resource-based economies are not likely to diversify and move into manufactures and services. True, the government of Sir John A. Macdonald adopted the National Policy in 1879 to encourage a shift from the export of primary goods to the development of industrial sector. However, as discussed below in section 3, as the growth in resource and non-resource sectors expands the size of our GDP, the share of the primary sectors declines.

Chart 1: Falling Primary Exports in Resource Economies



This characteristics holds for Canada as well as a number of other countries. For example, consider in Table 1 below the experience of Argentina, Australia and New Zealand—all resource-based economies.

Table 1: Comparative figures for four resource-based economies

	Canada	Australia	Argentina	New Zealand
GDP per capita: (1990\$)				
1870	2,640	3,801	1,311	3,115
1929	4,799	5,095	4,367	5,289
1973	13,644	12,485	7,970	12,575
1994	18,350	17,107	8,373	15,085
Exports per capita (current \$ and exchange rates)				
1870	15	60	16	41
1929	111	93	78	176
1973	1,195	708	130	874
1992	4,714	2,427	371	2,878
Primary exports as a share of merchandise exports				
1929	63%	90%	94%	95%*
1970	39%	81%	86%	89%
1993	34%	65%	68%	73%

Sources: A. Madison, *Monitoring the World Economy 1820-1992*, OECD, 1995.
 Primary exports: 1929 figures are from Diaz-Alejandro (*Essays on the Economic History of the Argentine Republic*, New Haven, CT: Yale University Press, 1970) and others from the World Development Report, 1995; * refers to 1965 data.

In real per capita income, Australia and New Zealand were better off than Canada in 1870, which in turn had higher standard of living than Argentina. By 1929, both Argentina and Canada were closing-in on Australia and New Zealand. By 1973, Canada had overtaken Australia and New Zealand in real per capita income. While Canada has maintained its lead in

1994, the growth in real per capita incomes in Argentina has fallen considerably behind Australia and New Zealand's performance.

Let us turn to a description of the dependence on resource-based trade of these four countries. In 1929, primary exports accounted for 90% or more of the merchandise exports of Australia, Argentina and New Zealand, while 63% of Canada exports were primary exports. Interestingly, by 1993 the share of primary goods in Canadian exports had dropped by almost a half to 34% whereas for Argentina and Australia the shares dropped only by roughly a quarter and still less for New Zealand. In other words, all four resource-based economies exhibited a declining proportion of primary exports as they experienced economic growth from 1929 to 1994. Canada has been more successful in diversifying its exports than Argentina, Australia and New Zealand. Why?

Consider the openness to trade as proxied by per capita exports of a country. While real per capita exports from Canada grew over 25 fold from 1870 to 1992, the same growth was less than ten times for Australia and only three fold for Argentina. Thus, a resource-based economy with a freer trade orientation, such as Canada, can exhibit greater diversity in its export bundle and achieve more sustained growth in its real per capita income.

While tariff and related trade policies (such as exchange rates and controls) did protect domestic manufacturing, this protection did not choke-off the emergence of a competitive manufacturing sector. In the inter-war years, the growth of the mining sector in Canada generated substantial downstream industries such as smelting, refining, the fabrication of non-ferrous metals and machines. In the post-Second World War period, the refining of petroleum and natural gas was a source of industrial growth in Canada. As a result, the successful resource-based growth of the Canadian economy has also been accompanied by a shift to increased exports of manufactured goods. This is not to say that the resource sectors are no longer or will not continue to be an important part of the Canadian economy.

In sum, our evidence shows that the share of primary products in the exports of resource-based economies declines as economic growth takes hold. To some extent, the diversification of the export bundle can be attributed to a country's export orientation. What explains these observations?

3. Changes in the Composition of Trade: Some Formal Views

The popular **Heckscher-Ohlin theory** of international trade argues that the composition of a country's trade is determined by its **supply capabilities**, which reflect differences in factor proportions across countries. For Canada, the Heckscher-Ohlin model would predict that because of its relatively low cost of natural resources, Canada is likely to export resource-intensive goods—supporting the view that Canada will forever be dependent on exports of natural resources.

Removing tariffs on manufactures moves a country to dependence on natural resources. Prior to 1988, Canada used tariffs to persuade foreign corporations to locate manufacturing in Canada. Some observers have argued that the removal of this tariff wall under the FTA, NAFTA and the Uruguay Round would mean that tariff-induced manufacturing would shrink in Canada. Interestingly, the Heckscher-Ohlin theory also supports the view that freer trade would return Canada to our historical dependence on exporting natural resources.

However, supply capabilities and comparative advantage evolve over time and consumer demand may change as well. For instance, as economic growth allows developing countries to catch-up to the real per capita income levels of advanced countries, consumer tastes across such countries for goods and services may converge.

Intra-industry trade. Economic progress, in boosting the convergence of real consumer incomes, also generates **demand for product variety and quality**. For example, North Americans import a variety of cars from Asia, while Asians buy different varieties of cars manufactured in North America. Consequently, trade in the same overall product category (or within the same industry classification, i.e., **intra-industry trade**) grows as real incomes converge internationally.

Economic growth in an initially resource-based economy leads to intra-industry trade in manufactured goods in a number of phases.

- First, the growth in real per capita income from exports of resources generates demand for products enjoyed by consumers in other advanced countries. To service these imported products a parts-manufacturing and servicing industry also develops in the resource abundant country.

- Second, combining imported and local inputs, and new knowledge, domestic manufacturing strives to produce competitive new product variants and qualities.
- Finally, some of these product varieties are exported as manufactured or processed products and services from the natural resource rich country.
- Over time, it is likely that the share of non-natural resource exports will increase, although the country may still be a significant exporter of resource products.

4. The Role of Primary Products in Canada's Exports

This section builds on the following picture.

Chart 2: Canadian Merchandise Exports in 1963

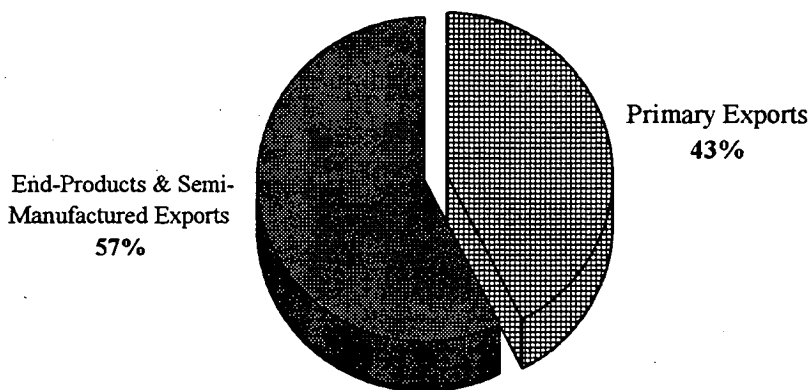
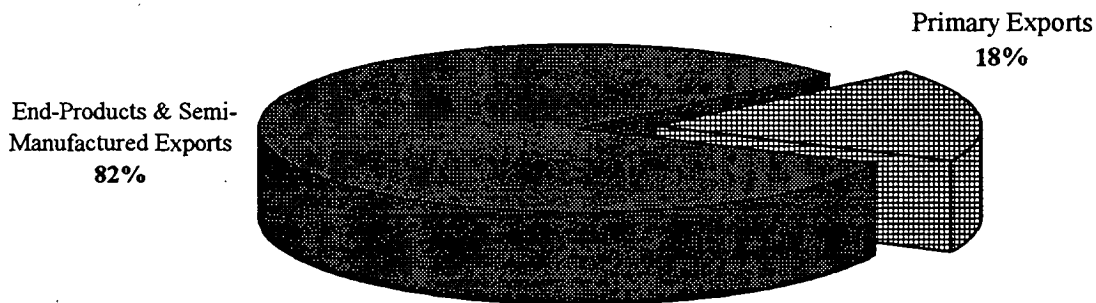


Chart 3: Canadian Merchandise Exports in 1995



One way to assess the importance of resource-based products in Canada's export composition is to compile exports in broad product categories. Statistics Canada data can be aggregated into, for instance, four product groups: (1) agriculture and food products,⁵ (2) crude materials, (3) semi-manufactured and (4) end-product exports. The percentage of each category of total Canadian exports from 1963 to 1995 is presented in Table 2 below. The last column in Table 2 reports the percentage share of end-products made up of auto and auto-parts.

Table 2: Percentage Share of Products in Canada's Merchandise Exports

Year	Domestic exports (billions)	Agriculture & food	Crude materials	Semi-manufactures	End-Products	Auto-& parts in end-products
1963	\$6.8	21.5	21.0	45.7	11.5	-
1968	\$13.3	12.1	18.5	36.4	32.7	63.1
1973	\$24.9	12.7	20.2	33.1	33.8	64.6
1978	\$52.3	10.1	16.9	36.7	36.1	66.5
1983	\$88.2	11.8	16.2	34.0	37.8	63.8
1988	\$134.9	8.7	12.9	35.9	42.0	60.9
1993	\$177.6	7.8	12.3	32.1	46.8	57.2
1995	\$247.8	6.8	11.0	34.2	46.9	52.8

Source: Statistics Canada, Cansim Data-Base, matrix 3888 and 3686.

⁵ Agriculture and food includes exports of live animals, feed, food, beverages and tobacco. The end-products commodity grouping by Statistics Canada includes products such as: aircraft, engines; parts, office machines and equipment; motor vehicles, trucks, parts; transportation equipment; drilling mining machinery; footwear; apparel; and industrial machinery. See Statistics Canada catalogues 65-001 and 65-003.

In 1963, exports of primary goods, calculated by adding agriculture, food and crude materials products, totalled \$2.9 billion, or 42.5% of total exports; whereas semi-manufactured and end-product exports were \$3.9 billion, or 39%. By 1985, exports of primary goods had risen ten fold to \$29 billion but had declined as proportion of total exports to 25%. By 1995, Canada exported over \$44 billion worth of primary goods but their importance in the overall export picture had fallen to a mere 17.8%; whereas in 1995, Canada exported over \$201 billion worth of semi-manufactured and end-products or 81.1% of total exports.

Exports of auto and auto-parts. In the popular media there is an understanding that manufacturing activities in Canada are primarily and increasingly due to our exports of auto and auto-parts. While the auto sector does figure prominently in Canada's exports (exports of some \$61.3 billion in 1995), it is declining in importance. In 1968, it accounted for about 63% of our total exports of end-products, by 1995 the exports of auto and auto-parts had declined to 53% of overall exports of end-products. The last column in Table 2 tells this story. This trend has emerged despite an increase in the share of end-products in total exports from 32.7% in 1968 to about 47% in 1995.

5. Primary Products in Canadian Imports

The discussion in this section builds on the following charts.

Chart 4: Canadian Merchandise Imports in 1963

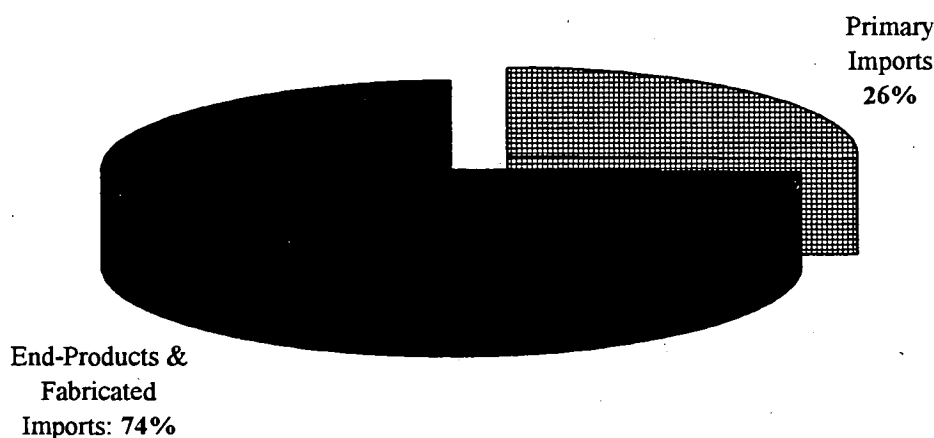
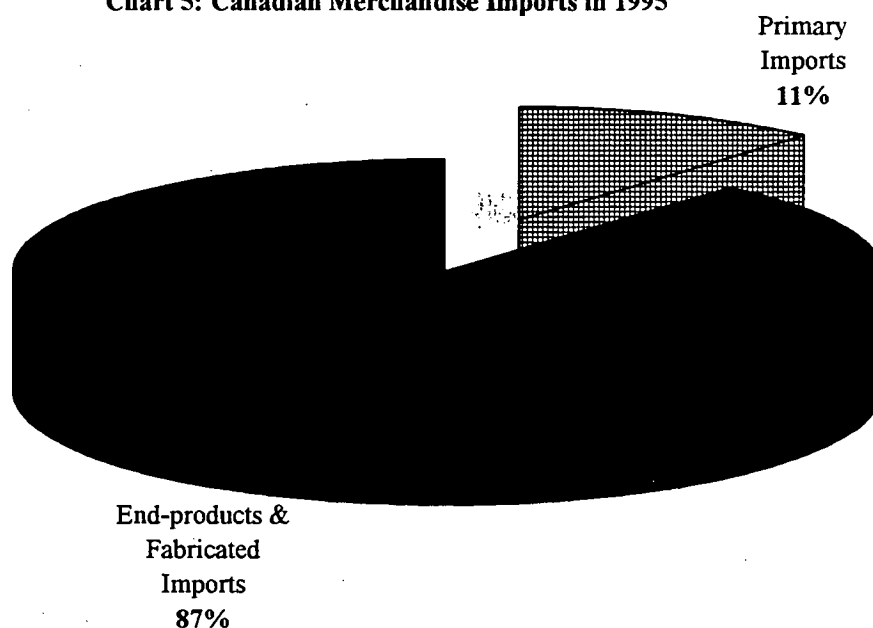


Chart 5: Canadian Merchandise Imports in 1995



In Table 3, we have aggregated the Statistics Canada data on Canadian imports into four categories: (1) agriculture and food products,⁶ (2) crude materials, (3) fabricated products and (4) end-product imports. The middle four columns in Table 3 present the percentage of each category of total Canadian imports from 1963 to 1995. The last column in Table 3 reports the percentage share of end-product imports made up of auto and auto-parts.

⁶ Agriculture and food includes exports of live animals, feed, food, beverages and tobacco.

Table 3: Percentage Share of Products in Canadian Merchandise Imports

Year	Domestic imports (billions)	Agriculture & food	Crude materials	Fabricated-Products	End-Products	Auto-& parts in end-products
1963	\$6.6	11.9	13.7	--	48.4	-
1968	\$12.4	7.4	9.1	19.7	61.6	39.4
1973	\$23.3	8.5	8.7	18.4	63.4	41.1
1978	\$50.1	7.5	11.7	17.5	62.5	42.8
1983	\$75.5	6.6	9.6	18.6	63.9	39.8
1988	\$131.2	5.4	5.3	19.2	68.0	37.7
1993	\$170.0	6.0	5.3	18.8	67.4	35.0
1995	\$225.7	5.5	5.5	19.4	67.2	33.3

Source: Statistics Canada, Cansim Data-Base, matrix 3888 and 3686.

In 1963, imports of primary goods, as defined in the annex, totalled \$1.7 billion, or 25.6% of total imports; whereas end-product imports were \$3.2 billion. By 1985, imports of primary goods had risen eight fold to \$13.8 billion but had declined as proportion of total Canadian imports to 13%. By 1995, Canada imported about \$25 billion worth of primary goods but their importance in the overall picture had fallen to a mere 11%; whereas in 1995, Canada imported over \$195 billion worth of fabricated and end-products or 86.6% of total imports.

Imports of auto and auto-parts. The auto sector does figure prominently in Canada's imports (imports of some \$50.5 billion in 1995), it is declining, particularly since 1985, in importance. In 1968, auto and auto-parts accounted for about 39.4% of our total imports of end-products, by 1995 the imports of auto and auto-parts had declined to 33.3% of overall imports of end-products. The last column in Table 3 tells this story. This trend has

emerged despite an increase in the share of end-products in total imports from 61.6% in 1968 to about 86.6% in 1995.

We can glean the following points from our discussion of Canada's merchandise exports and imports:

- The share of primary products in Canada's overall exports has declined steadily from 43% in 1963 to about 18% in 1995, while semi-manufactured and end-products rose from 57% to over 81% during the same period.
- The share of primary products in Canada's overall imports has declined steadily from 26% in 1963 to 11% in 1995, while fabricated and end-product imports totalled about 87% of the overall Canadian imports in 1995.
- The fall in the share of primary exports and imports, and the increase in trade of end-products reflects the success of the Canadian economy in restructuring and diversifying to create a larger manufacturing base that can absorb more advanced technology.
- Contrary to the predictions of the Heckscher-Ohlin trade model, the lowering and removal of tariffs under the FTA and NAFTA has not pushed Canada to export more primary resource products. Rather, the theory of **intra-industry trade** seems better at explaining the increase in the share of non-resource products in Canada's exports.
- Exports and imports of auto and auto-parts are significant in sustaining the manufacturing base in Canada, but the relative share of this sector in overall exports of end-products has declined over the past few decades.
- This trend points to an increase in the share of new (and non-resource-based) lines of business in first establishing themselves in Canada and then successfully competing for international markets abroad.

6. Intra-Industry Trade: Canada's Export Performance in Manufactures

The growth in intra-industry commerce is also reflected in the overall bundle of goods and services Canada trades with the rest of the world. The increase in export intensity for Canadian manufacturing industries requires an increase in the use of both domestic and imported intermediate manufactured goods as well as commercial services.

Intra-industry trade in manufactures. Import penetration is defined by the OECD as the ratio of manufacturing imports to consumption of manufactured goods (domestic production minus exports plus imports). Export intensity is defined as the ratio of exports to domestic production of manufactured goods.

Table 4:**Import Penetration Rates for Manufacturing Industries (percent)**

	1970	1980	1990	1992
OECD Average	23.1	28.2	35.2	33.7
Canada	24.6	30.7	37.3	40.0
Australia	16.3	21.5	23.7	25.9
New Zealand	32.4	35.6	36.2	38.5
U.S.	5.3	8.9	14.8	16.0

Export Intensity for Manufacturing Industries (percent)

	1970	1980	1990	1992
OECD Average	22.3	28.3	33.9	33.3
Canada	25.9	30.2	35.7	38.0
Australia	11.5	16.1	12.5	15.2
New Zealand	31.5	35.5	33.1	36.5
U.S.	5.5	9.4	11.6	13.2

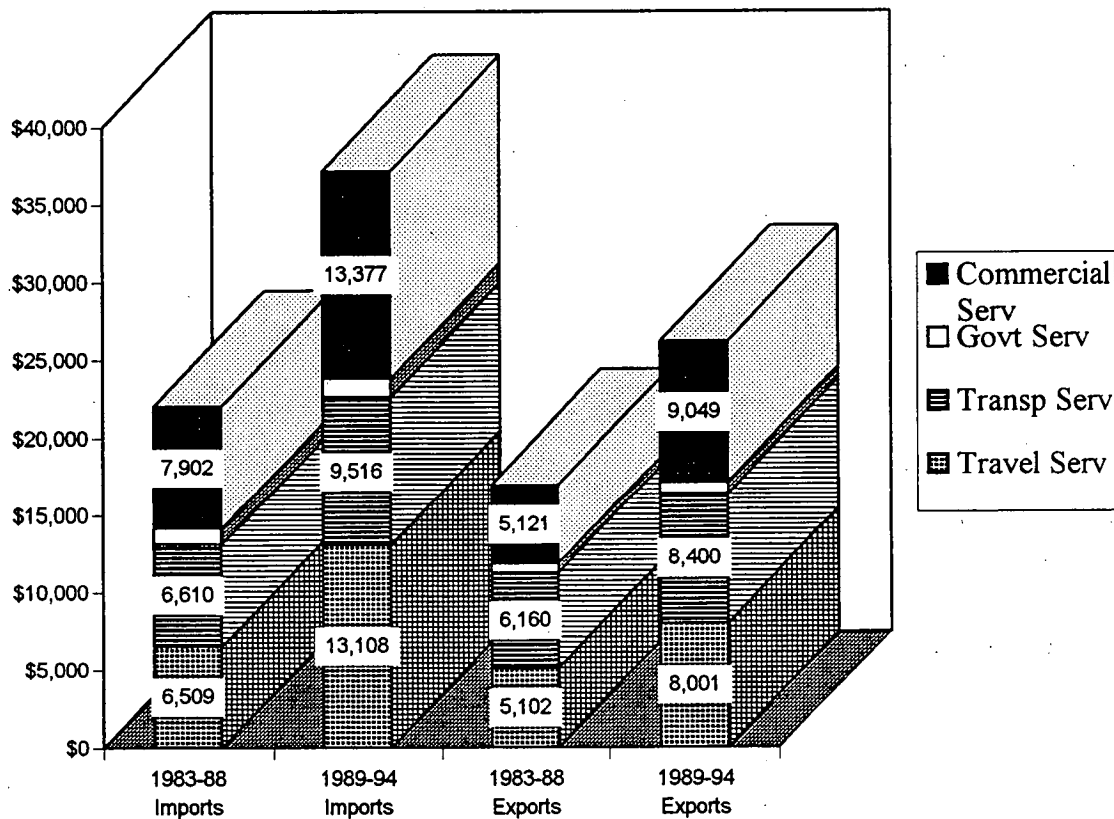
Source: OECD, *OECD Economies At A Glance*, 1996, p.66.

Table 4 above demonstrates clearly that there is an upward trend in both import and export orientation of domestic manufacturing in the U.S., Australia, New Zealand, Canada and the OECD country average. The era from 1970 to 1992, was characterized by freer trade and the growth of intra-industry trade which largely accounts for this upward trend.

7. Trade in Canadian commercial services: The growth of the knowledge-intensive base

Growing share of business services. In the 1989-94 period Canada's total international trade in services grew significantly from the 1983-1988 period. Travel services averaged about 30%, transportation services about 32%, government services 3%. Commercial (business) services grew to over 34% in 1989-94, up from an average share of 30% in the 1983-88 period. This is illustrated in Chart 4 below.⁷

Chart 4: Composition of Canadian Services Trade, 1983-88 and 1988-94

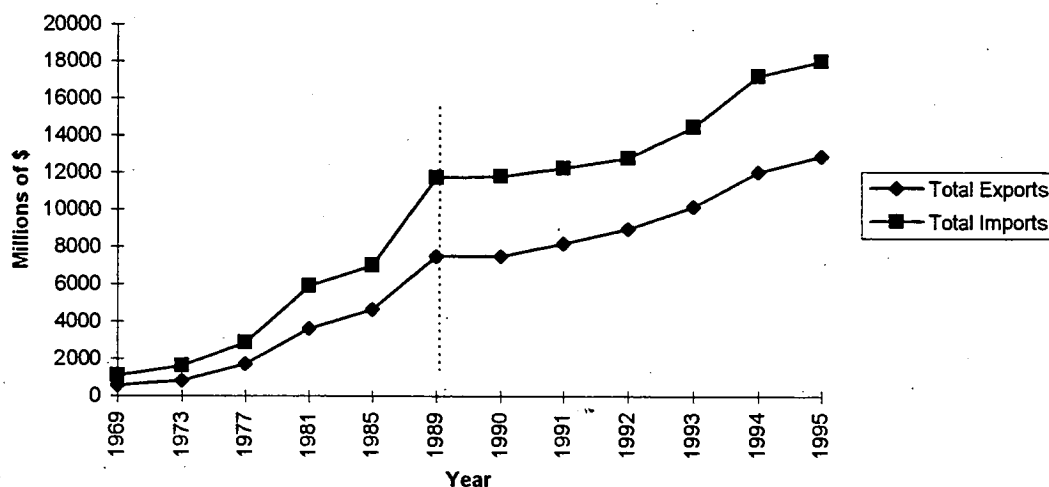


⁷ Source: For charts 4 to 8, Statistics Canada, catalogues 67-510 and 67-203, various issues.

7.1 Intra-industry Trade in Business Services.

Chart 5 below presents evidence of an upward trend in Canada's imports and exports of commercial services for the 1969 to 1995 period. Since 1969, Canada has consistently run a trade deficit in commercial services. What does this pattern imply for the resource or non-resource base of Canadian businesses?

Chart 5: Total Canadian Exports and Imports of Commercial Services

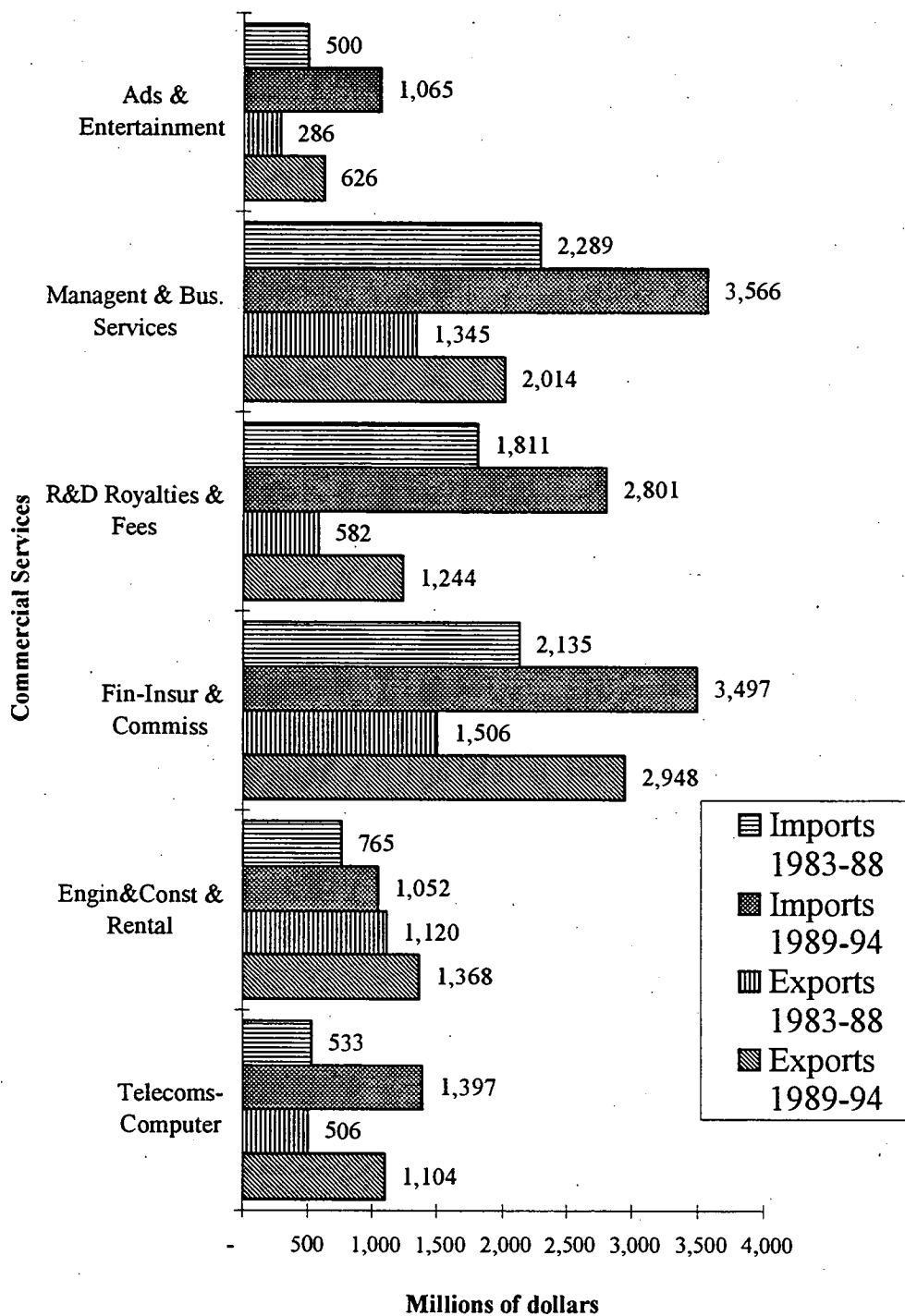


During 1989-94, Canadian exports of all commercial services grew at the average year-over-year rate of 9%. In the absence of detailed data on trade in services by industry, we have compiled Canadian commercial services trade by categories and present their recent behaviour in Chart 6 below. We define the categories (as well as their export and import shares) as follows:

- **Tele-computers:** represents trade in communication, computer and information services. (This category had an average share of 12% in Canadian exports of all commercial services during the 1989-94 period, relative to its 10% share during the 1983-88 years. However, the import share also increased to about 10.5% during 1989-94 from its 6.5% share during the 1983-88 period.)

- **Engin&Const&Rental:** consists of architectural, engineering and other technical services, and income from renting equipment. (The share of this category dropped from an average of 23.5% in total Canadian exports of commercial services during 1983-88 to 15% during the 1989-94 period. At the same time, the import share also decreased to about 7.5% during 1989-94 from its 10% level during the 1983-88 period.)
- **Fin-Insur & Commiss:** made up of insurance and other financial services and commissions earned. (The annual average share of this category rose to 32.5% during the 1989-94 period from an average share of 29% in total Canadian exports of commercial services during the 1983-88 period. Nonetheless, the import share remained unchanged at about 26% during the 1983-88 and 1989-94 periods.)
- **R&D Royalties & Fees:** combines research and development services, royalties and fees on intellectual property, such as patents. (The share of this category increased from an average of 11% in total Canadian exports of commercial services during 1983-88 to 14% during the 1989-94 period. However, the import share declined to about 21% during the years of 1989-94 from its 23% share during the 1983-88 period.)
- **Manage & Bus Serv:** represents management services and miscellaneous services to business. (The share of this category dropped from an average of 26.5% in total Canadian exports of commercial services during the years of 1983-88 to about 23% during the 1989-94 period. The import share also decreased to about 27% during 1989-94 from its 29.5% share during the 1983-88 period.)
- **Ads&Entertain:** made up of advertising and related services, audio-visual services, and personal, cultural and recreational services. (The annual average share of this category rose to about 7% during the 1989-94 period from its average share of 5% in total Canadian exports of commercial services during the years of 1983-88. However, the import share increased to 8% during the years of 1989-94 from its 6.5% share during the 1983-88 period.)

Chart 6: Composition of Canadian Trade in Commercial Services, 1983-88 and 1989-94



By their nature, services cover the spectrum of activities that range from the knowledge-intensive to labour-intensive. You will notice that Canadian businesses have been exporting, as well as importing, commercial services in the same category. For instance, Canadian exports of telecommunications, computer and information services have gone up, and so have their imports. A similar pattern emerges in other categories as well. What explains this pattern? It is intra-industry trade in commercial services.

You will also notice in the description of the categories above that almost all of them cover trade in knowledge-intensive services. The growth in Canadian imports of services indicates that we are increasing our purchases of knowledge-intensive inputs. A good proportion of these knowledge services are used as intermediate inputs by skilled workers in Canada to make high-technology products.

By combing their advanced knowledge-base with domestically produced and imports of knowledge-intensive goods and services, Canadian workers and corporations are able to improve, consolidate and diversify their expertise. In time they achieve comparative advantage in a number of knowledge-intensive activities and begin exporting advanced services and goods from Canada. Consequently, the overall deficit on the service account in knowledge-intensive activities should not be viewed negatively.

During the 1989-94 period, half of the trade in Canadian imports and exports of commercial services was accounted for by two groups: insurance, financial services and commissions; and, management services and miscellaneous services to business. During the same period, the categories of: computer and information services; R&D, royalties and fees; insurance and financial and non-financial trading commissions; and architectural, engineering and other technical services categories, expanded their exports at an average growth rate of 10% or more. This trend attests to the success of Canadian business in achieving comparative advantage in the export of knowledge-intensive commercial services.

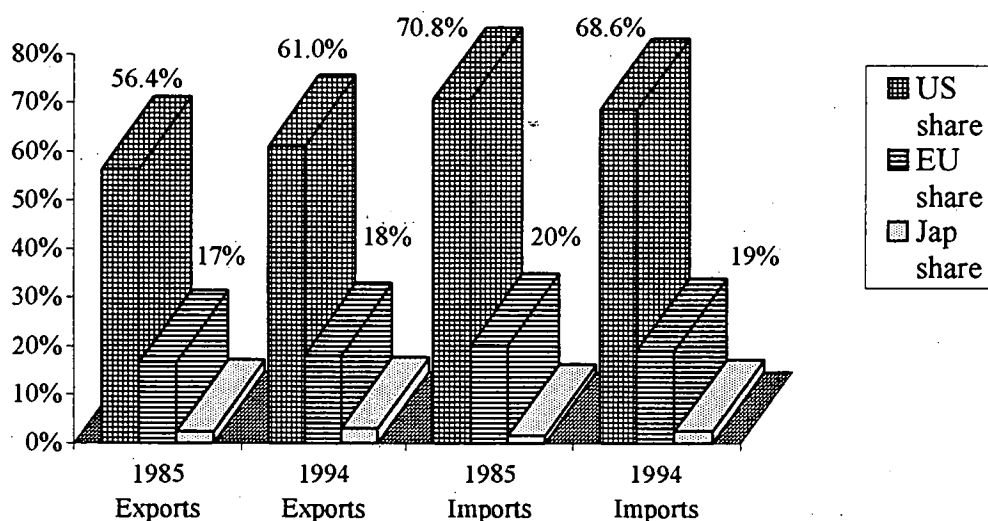
7.2 Canada's Major Partners in Service Trade

During the 1985-95 period, about 83% of Canada's exports of commercial services went to the U.S., Europe and Japan. These countries are characterized by advanced knowledge-base and industries. Canadian exports of knowledge-intensive services have been successful in sustaining their

penetration of these markets. Relative to the 1985-89 period, when about 57% of all Canadian exports of commercial services went to the U.S.; in the 1990-95 period the proportion of all our service exports to the U.S. increased to over 62%. Such an expansion in sales of Canadian knowledge-based services to a technologically advanced economy is an indication that our workers and companies are competitive.

On average, about 91% of all our imports of commercial services, during the years of 1985-95 also came from the U.S., Europe and Japan. These countries have been the major source of new technical know-how for Canada. Over the same period, our purchases from the U.S. averaged about 70% of our total imports of commercial services. This is illustrated in Chart 7 below.

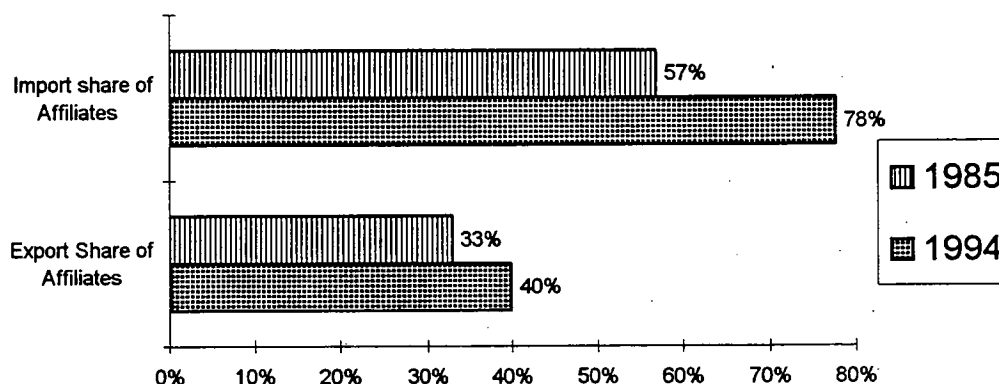
Chart 7: Canadian Commercial Services Trade, Country Shares, 1985 and 1994



7.3 Intra-firm Trade in Commercial Services

In the past, some analysts have argued that foreign corporations operating in Canada do most of R&D at their head offices abroad, and therefore, only a few high-tech and high real-wage jobs are created in Canada. However, as far as trade in commercial services is concerned, such a claim does not find much support since 1985 (see Chart 8 below).

Chart 8: Share of Canada's Commercial Services Trade by Affiliates, 1985 and 1994



The importance of both imports and exports of commercial services through affiliates has gone up in 1994 relative to 1985. The import side reflects the ability of people working in these affiliates to make use of knowledge-intensive services for profit-making opportunities. Most Canadians working for the affiliates are not “hamburger flippers.” Apart from benefiting domestic production, some of the imported commercial services actually help to increase Canadian exports of goods and services.

The upward trend in the share of exports of commercial services by affiliates indicates that they do engage in knowledge-intensive activities at their Canadian operations. Their services are not only useful in Canada but are also competitive internationally and are exported to other corporate locations abroad.

In sum, the growth in Canadian imports of knowledge-intensive services has facilitated the transfer of new knowledge and technical know-how from foreign advanced industrialized economies to businesses in Canada. The sustained growth in exports of knowledge-intensive services from Canada to other advanced industrialized economies in the world is an indicator that workers and companies in Canada have been successful in restructuring from resource-based to knowledge-intensive activities.

7.4 Characteristics of Canadian Export Manufacturing Industries

One important test of the affect of the reallocation of resources on economic welfare is the kind of affect it has on jobs in the country. This paper has argued that the relative share of primary products in Canadian exports has

steadily declined. The export-orientation of Canadian manufacturing and service industries has taken on a higher profile in the Canadian labour market. Some characteristics of manufacturing industries specializing in exports in 1992 are contrasted for Australia, New Zealand, the OECD, the U.S. and Canada in Table 4 below.

Relative to the OECD average in 1992, Canada's manufactured export industries reflected higher resource-intensity, had a lower science-based and lower specialized (niche) supplier links than those in the U.S.. However, for Australia and New Zealand the resource-intensity was many times higher, and both the science-based linkages and the niche suppliers were lower than Canada's.

Table 5: Export Specialization for Manufacturing Industries by Type, 1992

Industry-type	Resource-intensive	Scale-intensive	Science-based	Specialized-supplier	Labour-intensive	High-wage	Medium-wage	Low-wage
OECD Index	100	100	100	100	100	100	100	100
Canada	153	148	55	50	33	123	93	76
Australia	360	48	40	35	120	52	88	198
New Zealand	438	42	12	22	106	16	54	314
U.S.	88	82	178	110	62	118	95	82

Source: OECD, *OECD Economies At A Glance*, 1996, p.68.

In 1992, Canadian manufacturing exports also exhibited higher benefits of scale-intensity or economies of scale in production relative to the OECD average, Australia and New Zealand, and even the U.S.

The labour-intensity in export-oriented Canadian manufacturing industries in 1992 was lower, not only relative to the U.S., but also to the

OECD average, Australia and New Zealand. One implication of this low labour-intensity is that in 1992 the Canadian export manufacturing industries topped all the OECD countries in the high-wage job category—higher even than the U.S.. As a consequence, the concentration of low-wage industries in manufacturing exports was lower in Canada than the U.S. and significantly lower than the OECD average, Australia and New Zealand. Canada was about even with the U.S. with regard to medium-wage job industries which manufacture products for export abroad.

The overall picture for the Canadian economy that emerges from the analysis in this paper is fairly promising. The relative decline in importance of primary exports has been accompanied by expansion in export-oriented manufacturing and service industries that support high-wage and knowledge-intensive jobs in Canada. The transformation of the Canadian export and import sector from a resource-based one to an exporter or importer of advanced and knowledge-based goods and services means that Canadian exports and imports increasingly support high real wages and quality jobs in Canada.

8. Balancing the Resource-Base and Knowledge-Base Sectors

The arguments set forth in this paper can be summarized as follows.

Myth	Reality
Natural resources make up the bulk of Canadian exports.	Primary products accounted for only 18% of Canadian exports in 1995.
Tearing down tariff walls would force Canada to revert to a resource-based economy—where Canada traditionally has an export advantage.	The elimination of trade distortions has led to an expansion in Canada's inter-industry as well as intra-industry trade. As a result, the share of non-resource products in Canadian exports has steadily increased, contrary to gloom-and-doom predictions.
Freer trade under the FTA and NAFTA have made Canada more dependent on auto and auto-parts exports.	The share of auto and auto-parts in Canadian exports has declined since the FTA and continues on a downward trend.
U.S. corporations will not locate their production in Canada, without a tariff penalty. Without protection no resource-based economy can achieve a diversified output and export composition.	Market forces reallocate resources and facilitate industrialization over time, provided protectionist and trade distorting policies are avoided. Access to international markets is essential.
Canadian exports compete on the backs of low-paid Canadian workers.	According to 1992 OECD data, export-oriented manufacturing industries in Canada topped all those in the OECD countries in terms of high-wage jobs. Exports support high-paying jobs in Canada.

Myth	Reality
The growth of the service sector will mean that well-paying manufacturing jobs will disappear and Canada will export labour-intensive services.	Knowledge-intensive activities generally have high productivity and real wages. Canadian exports of knowledge-intensive business services have been trending upward since 1969. Exports of business services sustain high real wage jobs.
Foreign-owned subsidiaries are only here to serve the Canadian market.	About 62% of business service exports go to the U.S., of which over 60% are exported through affiliates.
Foreign corporations operating in Canada do most of their R&D at home. Only a few knowledge-intensive and high real wage paying service jobs are created in Canada.	Trade in knowledge-intensive services matters, not R&D expenditures <i>per se</i> . For instance, U.S. affiliates in Canada engage in knowledge-intensive activities which they cannot obtain from their headquarters in the U.S. and which they buy from Canada for their U.S. operations.

9. Policy Implications

In the face of globalization and rapid changes in information technology and transportation costs, workers and firms in Canada are responding to market forces and are making the necessary structural adjustments. The key question is whether government policy has facilitated, or obstructed, beneficial structural change in the economy. The optimal policy response should promote the efficiency and speed with which workers and companies in the marketplace complete the transition process.

In Canada, the shift in the trend from the resource-based exports in the past to more advanced manufactured exports in the 1980s and 1990s is set to continue. Nonetheless, the Canadian resource sectors will continue to make important contributions to the living standard of Canadians. In relative terms,

the dynamism in the Canadian economy is likely to come increasingly from knowledge-intensive activities rather than from resource products alone.

Domestic policies. The structural change in Canada's trade in goods and services is a reflection of changes that are an outgrowth of the interaction between the Canadian economy and the world economy. As our access to international markets expands in a more liberal trading system, the ability of Canadian-based firms to increase their export business will increasingly depend on the flexibility of the domestic economy to restructure. Resources must be able to move speedily out of declining industries and into activities where Canadian firms can become competitive and chalk-up better trade performances.

In general, trade policy is mostly an ineffective or blunt instrument for correcting distortions in domestic policies or for the (mis)allocation of resources and incentives through the political process. Profit and money making opportunities guide market participants to hire workers and produce goods and services. For the most part, markets do a good job in delivering resources to their most beneficial address. Given that the shift toward knowledge-intensive activities will continue, government policies should accommodate and facilitate beneficial structural changes in the Canadian economy.

- Domestic government policies should be aimed at minimizing or eliminating distortions that would hinder market forces in allocating resources.
- Regulations and barriers to entry in the Canadian marketplace should be demolished.

In a knowledge-based global economy, raising productivity growth has to be one key policy objective. It is essential that workers in Canada are equipped to use new technology and information to raise productivity. Priority should be given to education reform to improve our secondary and higher education system. Tax and budget reforms can encourage more private saving and investment, and improve quality of investment. The reforms should enlarge productive capacity, raise productivity and provide Canadian firms additional room for trade expansion.

Trade policy. Trade policy in a knowledge-based and advanced industrialized economy must reflect the importance of both the import and export sides of the trade coin. Imports are beneficial not only because they expand consumer choice but also because knowledge-intensive imports transfer new technology and know-how which can be used as inputs for high-tech goods and services for domestic and export markets. Continuing growth in exports produced by Canadian workers, managers and companies is essential to pay for incremental imports. Therefore, access to distortion-free markets abroad is indispensable for the expansion of knowledge-intensive exports from Canada. To assure Canadian companies and workers the advantages of unhindered international markets in goods, capital and services, we must keep our markets open as well. Such a trade policy will allow Canadian companies to remain competitive and in-shape to contest international markets. Only successful and competitive Canadian exporters will be able to support and create jobs in Canada.

- A sound and outward-oriented **trade policy** will help Canadian companies remain competitive and able to contest international markets.

Trade development. An efficient and effective trade development programme should dovetail with the changing composition of Canadian exports. It may be necessary to reassess and recast trade development programmes to reflect a Canadian economy which is exporting an increasing proportion of knowledge-intensive goods and services, but would not neglect our strong performers in the resource sectors.

By their very nature, knowledge-intensive goods and services tend to be complex whether sold as final products or intermediate inputs. Different sets of skills may be necessary to understand and effectively promote the output of more advanced industries than was necessary for the promotion of resource-products. Established sectors often have a much larger presence on the policy scene, simply because companies in these industries have been around that much longer and have established good connections with policymakers. On the other hand, new sectors that are fighting to establish their comparative advantage in international markets are often comprised of little-known, new, small and medium-sized "start-up" companies. The issue is whether each incremental dollar spent in trade development would bring a higher return to the Canadian economy from a firm in the new sector or from one in the established sector? Depending on the answer, a reallocation of

development efforts may be required. New initiatives should take into account that

- Rent-seeking by established and dominant firms in traditional sectors does not limit access to trade promotion programmes by up-starts in knowledge-intensive trade activities.

Finally, the talk of Canada slipping into the ranks of resource-based third world economies should be given a burial. While the resource-sector will continue to make a significant contribution to the Canadian economy, knowledge-intensive activities will increasingly play a greater role in helping Canadian workers and firms restructure themselves to fit into an advanced industrialized economy.

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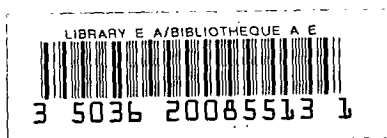
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