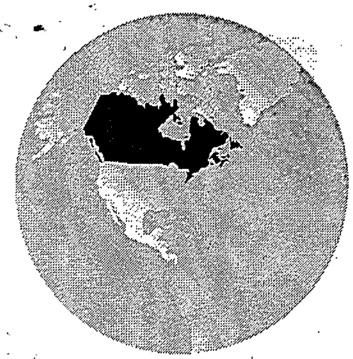
Micro-Economic Monitor

With the special report:

Canada's Regions and the Knowledge-Based Economy



— A Compelling Journey to a Promising Future —

Fourth Quarter, 1998

Micro-Economic Analysis Directorate, Industry & Science Policy Sector, Industry Canada.
This document is also available on the Internet at http://strategis.ic.gc.ca/sc_ecnmy/mera/engdoc/04.html

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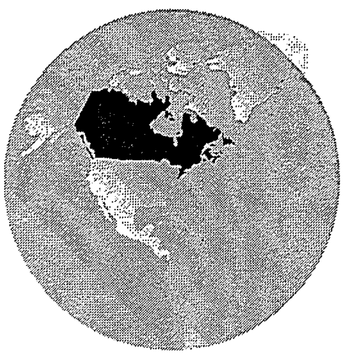

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Overview

A fourth-quarter surge boosts output growth to 3.0% in 1998...

Real GDP increased 3.0% in 1998, boosted by a strong rebound from strike-related disruptions in the fourth quarter. Output growth slowed from 3.8% in 1997.

- Business investment in Machinery & Equipment (M&E) was quite strong, spurred in particular by increased spending on computers. Investment in Non-Residential Construction also increased in 1998, albeit more slowly than in the previous year.

- Consumer spending posted a solid annual gain but weakened considerably over the last half of the year. Housing activity declined in 1998, following increases of more than 10% in the two previous periods. Consumer confidence has been shaken by the destabilizing impact of the Asian crisis on domestic financial markets.

- The economy benefited from higher real net exports in 1998. However, due to a deteriorating terms of trade (induced by lower commodity prices) Canada's trade surplus fell in nominal terms, while our deficit on the current account widened.

The economy created 453,000 net new jobs in 1998, the best year so far this decade for job creation. This strong performance – stemming mainly from sharp gains late in the year – carried over into January, with the unemployment rate falling to 7.8% (the lowest since June 1990).

Personal income rose 3.8% last year, the biggest jump in three years. Still, household finances remain fragile, with savings at a record low relative to income and debt levels at a record high.

...but slower growth is expected in 1999

The consensus private-sector forecast calls for growth of 2.5% in 1999.

- Recent gains in employment and income bode well for further increases in consumer spending, but the fragile state of household finances could limit these gains.
- The latest survey of public and private investment intentions suggest that business investment in plant and equipment will edge down this year, as lower profits (particularly in the resource sector) cut into spending plans.
- Robust growth in the U.S. economy should help support export sales in 1999. However, markets in Asia and other countries directly affected by global financial turmoil should remain weak.

On an sectoral basis, Canada's resource-based industries should continue to be affected by low commodity prices and stagnant world demand this year. Manufacturing is expected to benefit from increased consumer demand, both at home and in the U.S. Within the Service sector, Business Services will likely continue to grow at a very fast pace.

This issue's special report "Canada's Regions and the Knowledge-Based Economy – A Compelling Journey to a Promising Future" describes how well individual regions are positioned to benefit from the emergence of the knowledge-based economy (KBE). The report shows that while all regions display a strong commitment to the new economy and are making substantial progress, differences still persist in terms of each region's "readiness" for the KBE.

B

Domestic Scene

Real Economic Activity

Output growth picks up in the fourth quarter...

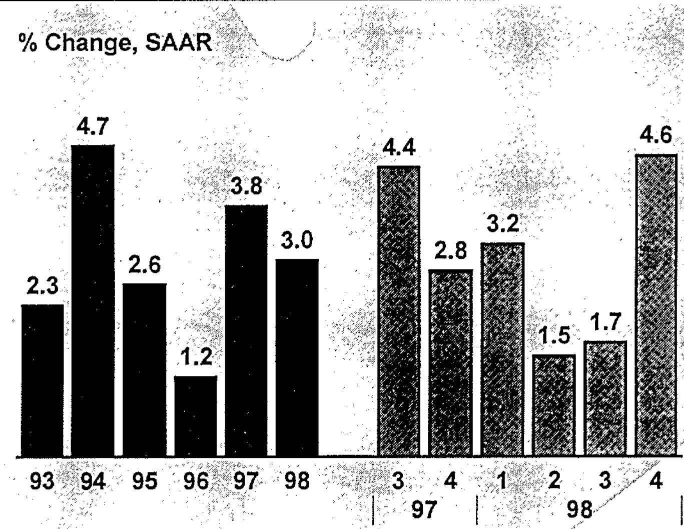
Real GDP rose 4.6% (annual rate) in the fourth quarter of 1998, rebounding strongly from a period of slow growth in the middle half of the year.

- Final domestic demand advanced 1.4%, with only a modest increase in consumer spending. M&E investment was strong, however, and the housing sector rebounded from three straight declines.

- Businesses added substantially to inventories in the fourth quarter, providing a strong boost to production. The trade sector also contributed to output growth.

For 1998 as a whole, the economy expanded by 3.0%, down from growth of 3.8% in 1997.

Real GDP Growth



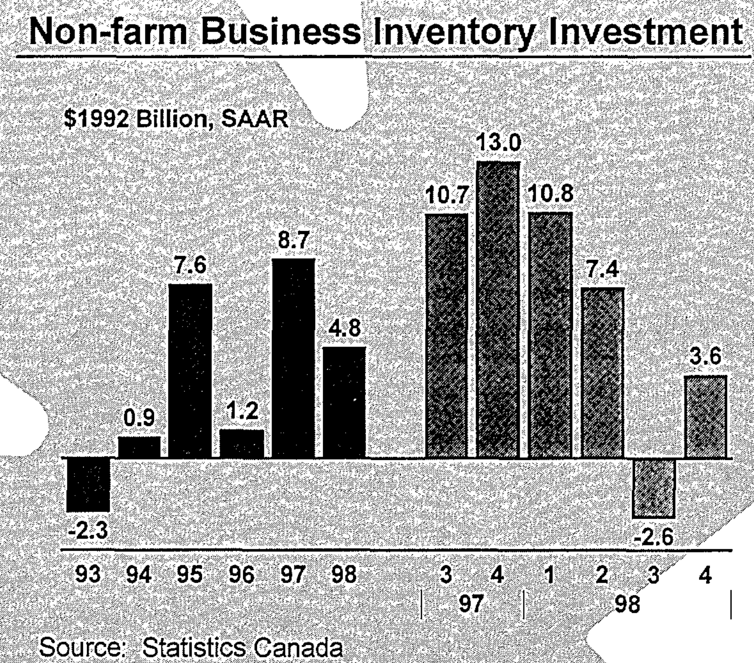
Source: Statistics Canada

...boosted by a substantial buildup of inventories...

After running down inventories in the third quarter, businesses added $3.6 billion to non-farm inventories in the fourth quarter.

- The resulting $6.1 billion swing in inventory investment accounts for approximately two-thirds of the total increase in real GDP for the quarter.

The inventory buildup was concentrated in Wholesale and Retail Trade, as Manufacturers liquidated their stocks.



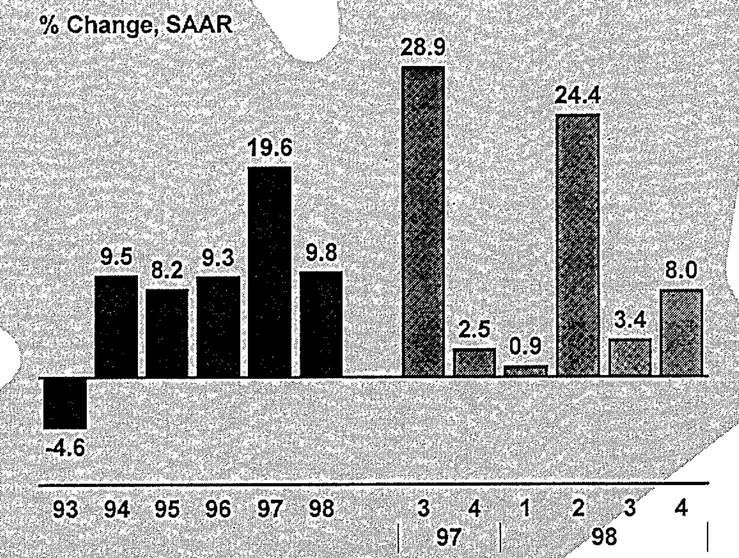
...increased investment in M&E...

Business investment in Machinery & Equipment (M&E) picked up considerably in the fourth quarter, fuelled by increased purchases of computers and other office equipment.

For the year as a whole, M&E investment increased 9.8% in 1998, a strong result but nonetheless half the increase posted in 1997.

- Investment in computers and other office equipment surged nearly 30% on the year.

Real Machinery & Equipment Investment



Source: Statistics Canada

...and higher net exports

A sharp increase in shipments of automobiles drove total exports up 16.2% (annual rate) in the fourth quarter. U.S. auto retailers rebuilt their stocks following last summer's strike at GM.

- Though imports also advanced sharply (+15.5%) in the fourth quarter, Canada's <u>real</u> trade surplus posted a modest improvement.

Export growth outpaced import growth in 1998. As a result, the trade sector contributed to output growth on the year.

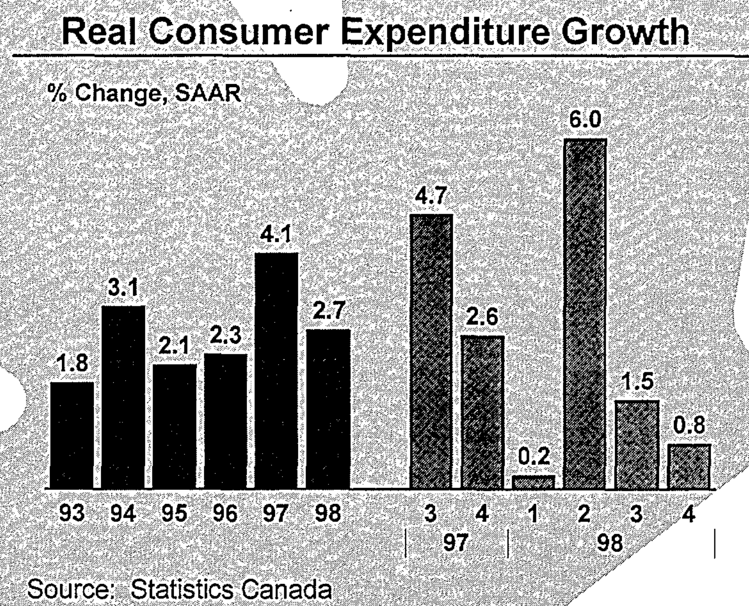
Source: Statistics Canada

However, consumer spending weakens considerably...

Following a second-quarter surge induced mainly by higher auto sales, consumer spending decelerated markedly in the last half of 1998.

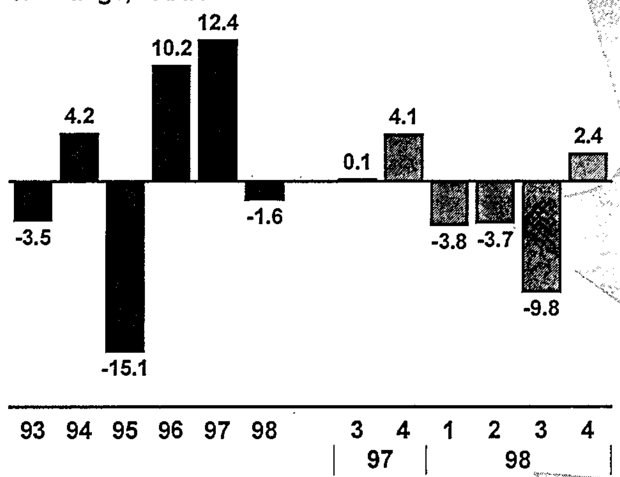
- Real consumer spending increased only 0.8% (annual rate) in the fourth quarter. Though purchases of goods fell across all major categories – durables, semi-durables and nondurables – this was offset by higher spending on services.

For 1998 as a whole, consumer spending rose 2.7%. This slowdown from the strong pace set in 1997 is consistent with lower consumer confidence and the fragile state of household finances.



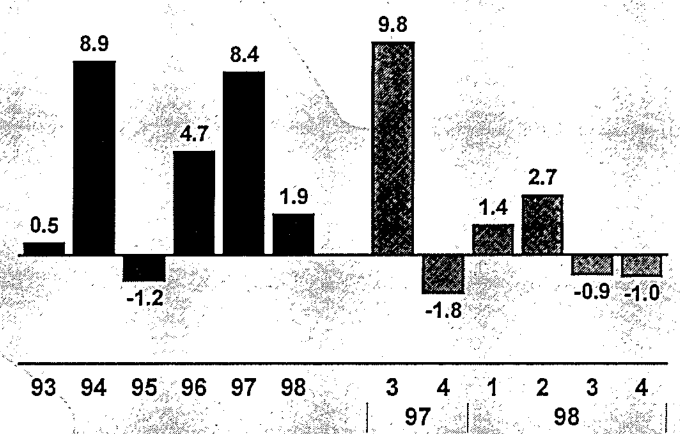
...and Non-Residential Construction falters

Real Residential Construction Growth



Source: Statistics Canada

Real Non-residential Construction Growth



Source: Statistics Canada

Spending on Non-residential Construction fell in the fourth quarter, the second straight decline. Higher spending on building construction was more than offset by lower engineering construction.

Residential Construction posted a modest rebound in the fourth quarter, with gains in both new housing construction and renovation activity. Despite the fourth-quarter advance (the first in four quarters), housing activity was down overall in 1998.

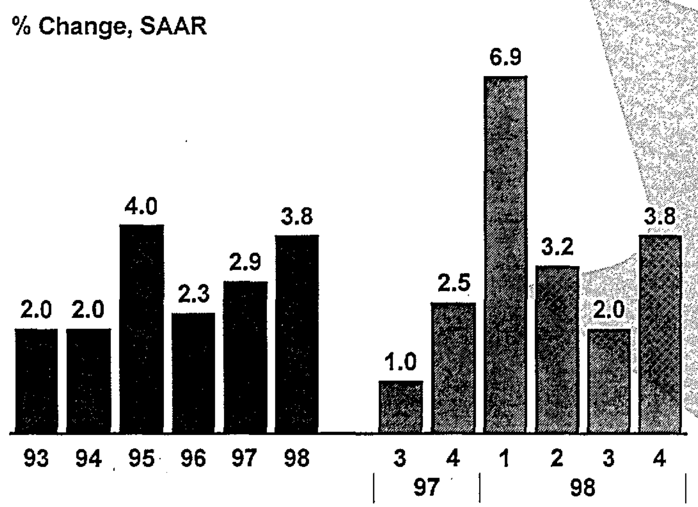
C

Domestic Scene

Income Side

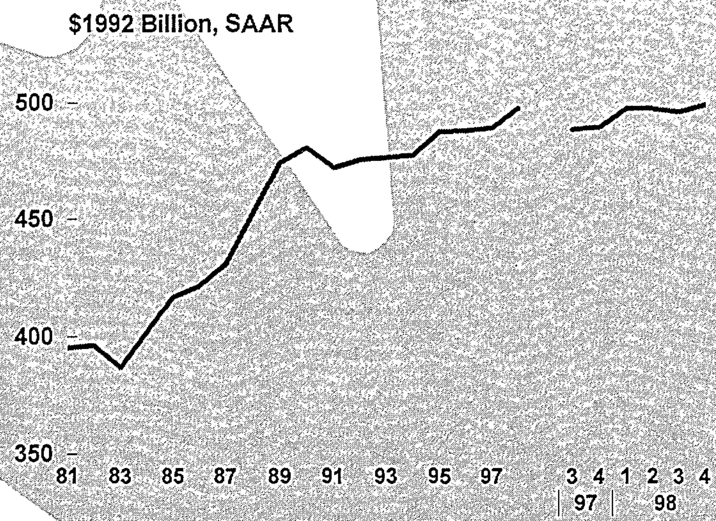
Despite stronger growth in personal income...

Personal Income Growth



Source: Statistics Canada

Real Personal Disposable Income*



*Converted to real dollars using the chain price index for personal expenditure on goods and services.
Source: Statistics Canada and Industry Canada

Personal income rose 3.8% (annual rate) in the fourth quarter of 1998, boosted by the resolution of labour disputes in a number of industries and gains in unincorporated business income.

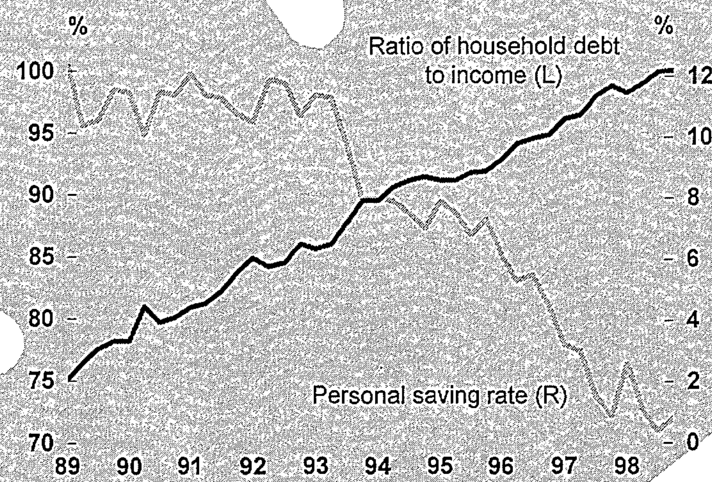
For 1998 as a whole, personal income was also up 3.8%, the biggest jump in three years. However, a bigger increase in income tax collections and other transfers to government cut into personal income growth in 1998. Disposable income therefore rose only 3.1%, although this still represents the largest annual increase since 1995.

...household finances remain fragile

Income gains outpaced consumer spending in the fourth quarter, pushing up the saving rate 0.4 percentage points to 0.8%.

On the other hand, the ratio of household debt to income edged up 0.1 percentage point to 100.0%, due to increases in both consumer and mortgage credit.

Personal Debt and Savings Rate



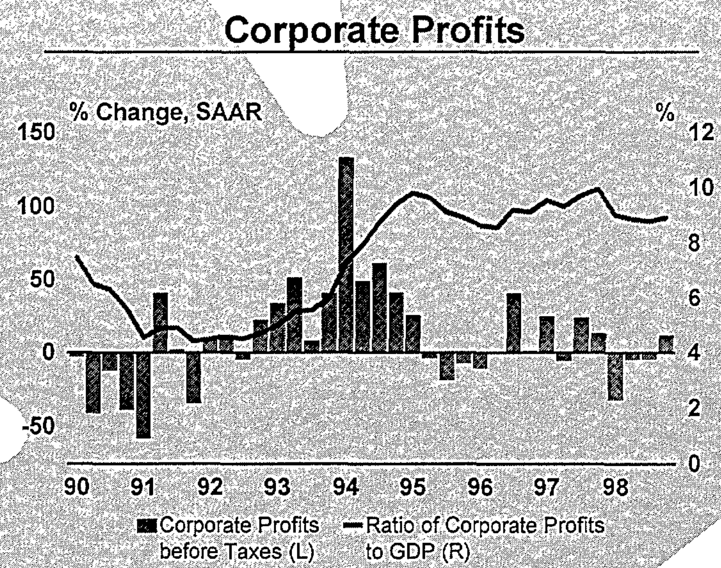
Source: Statistics Canada

Profits rebound late in the year but are down on an annual basis

Corporate profits fell sharply in the first three quarters of the year, hit hard by low prices for key commodities.

Although profits rebounded somewhat in the fourth quarter, earlier losses resulted in a 5.3% drop in profits overall in 1998.

- Given the weaker profit picture, recent increases in investment have been financed by a rise in corporate borrowing.



Source: Statistics Canada

D

Domestic Scene

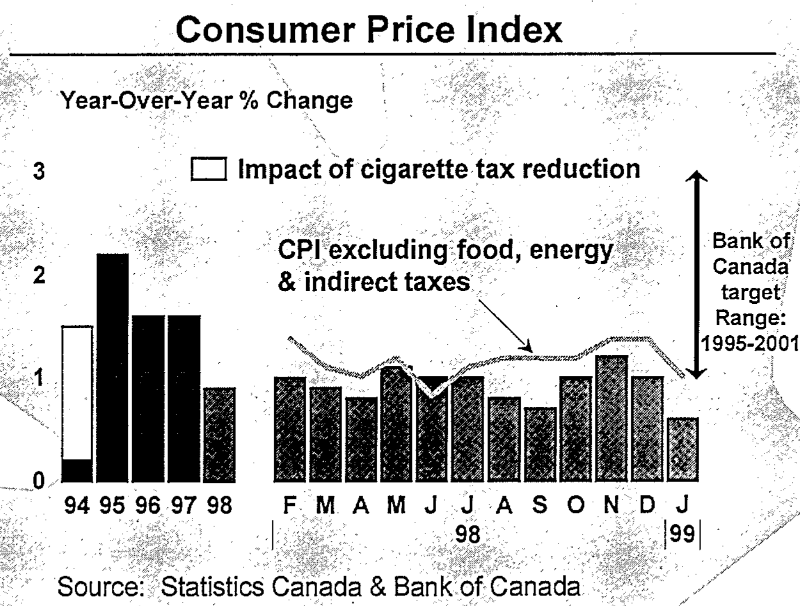
Price Movements

Inflation continues to fall...

Consumer prices increased by 0.9% in 1998. Except for 1994 (when cigarette tax reductions cut into measured inflation), this is the lowest annual rate of inflation since the mid-1950s.

CPI inflation decreased further to 0.6% in January. And, average prices in all four Atlantic provinces were down on a year-over-year basis.

- The "core" inflation rate – excluding the volatile food and energy components as well as the impact of indirect taxes – fell to 1.0%, the bottom end of the 1- 3% target range set jointly by the Bank of Canada and the Department of Finance.

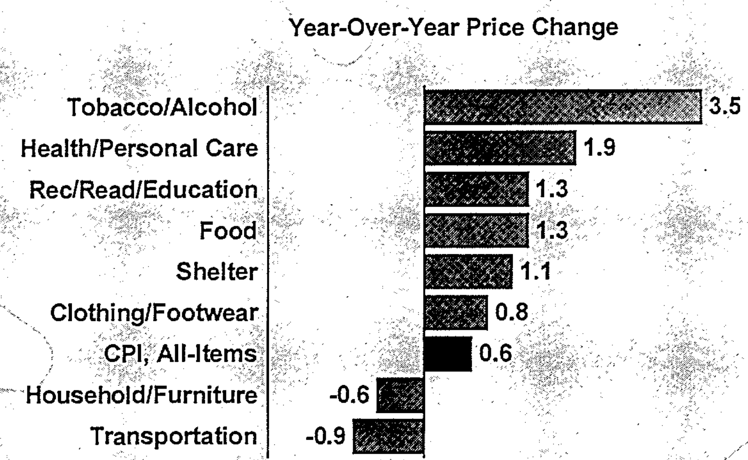


....aided by lower Transportation and Household costs...

Substantial year-over-year price declines for long-distance telephone services, computer equipment, gasoline and other fuel oils have helped keep inflation low.

Upward pressure on the average price level has come from higher costs for food, piped gas and cable TV. Rising tuition fees and property taxes have also contributed to the increase in the CPI.

Components of CPI: January 1999



Source: Statistics Canada

...and sharply-lower prices for key commodities

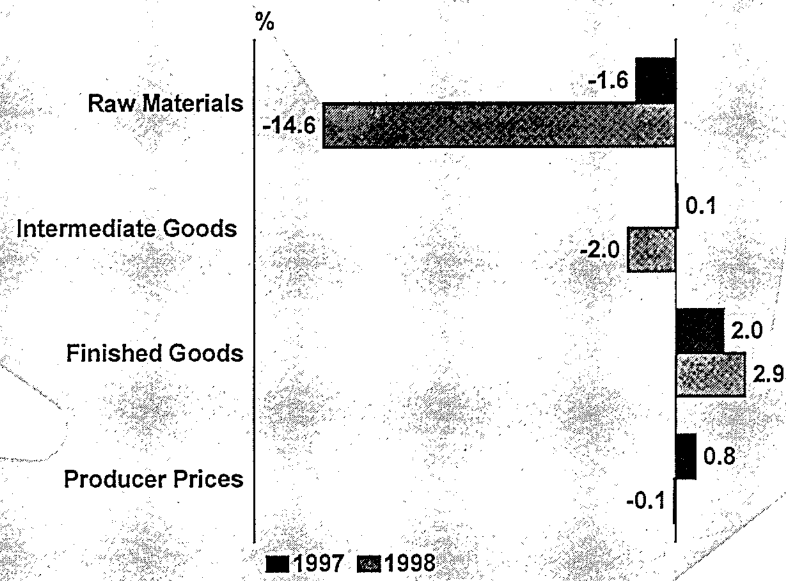
The Asian crisis and global oversupply have resulted in a sharp fall in commodity prices. Manufacturers paid nearly 15% less for raw materials in 1998, the biggest annual decline in twelve years.

- Crude oil prices fell 27% in 1998, and hog prices plunged 35%. Lower prices for copper, nickel and zinc led to a 13% drop in prices for non-ferrous metals, while wood prices were down 15% on the year.

Industrial product prices – the price received by producers at the factory gate – edged down 0.1% in 1998.

- If not for the substantial weakening of the Canadian dollar, this decline would have been larger (-2.1%). A lower dollar raises the Canadian-dollar price of products commonly quoted in U.S. dollars.

Price Chain



Source: Statistics Canada

E

Domestic Scene

Labour Situation

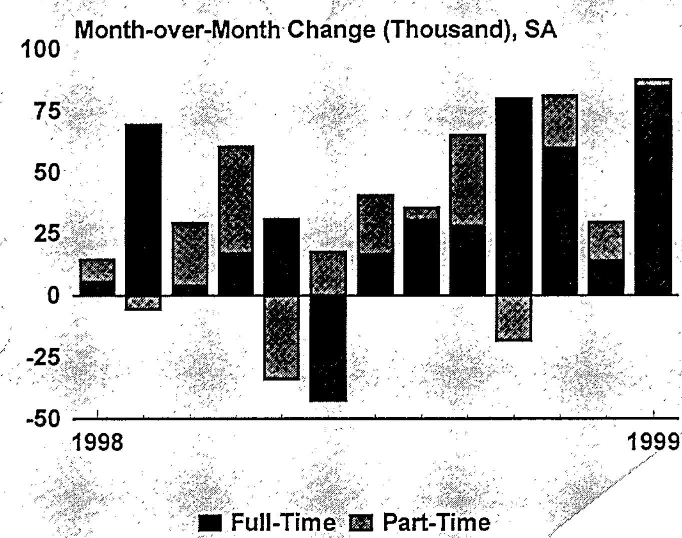
A strong job performance in 1998 carries over into January...

1998 was the best year so far this decade for employment growth, with a net increase of 453,000 jobs. Fully 300,000 of these jobs were created in the last six months of the year.

- **Just over two-thirds of the employment gains were full-time positions.**
- **Moreover, following an extended period of weakness dating back to the mid-1980s, youth employment surged 145,000 in 1998.**

The labour market momentum established over the last half of 1998 was sustained early into 1999, with the addition of 87,000 new jobs in January (nearly all full-time).

Employment Growth



Source: Statistics Canada

...with gains in both the private and public sectors

The private sector remains by far the largest engine of job growth in the economy.

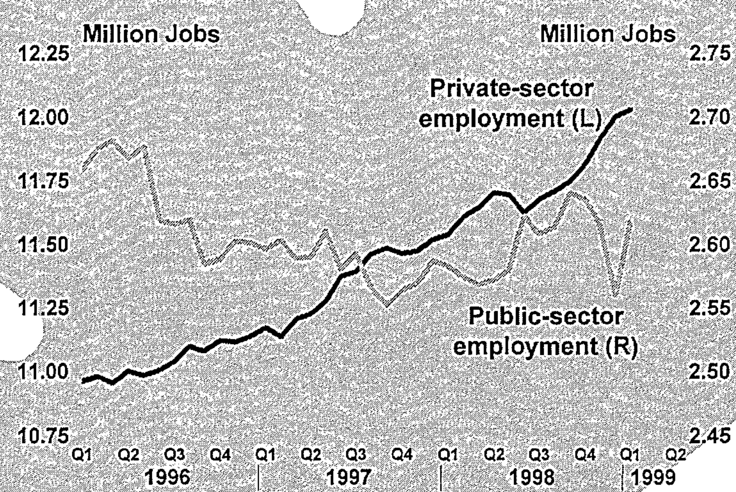
- Since the beginning of 1998, there have been substantial gains both in paid private-sector employment (+391,00) and self-employment (+120,000).

And, reversing a five-year trend decline, the number of workers in the public sector showed some signs of an upturn in 1998.

- Indeed, if not for a sharp drop in December (subsequently recouped in January), public sector employment was on track to record its biggest gain since 1991.

- Job growth in Health, Social and Educational Services has been particularly strong.

Employment: Private vs. Public



Source: Statistics Canada

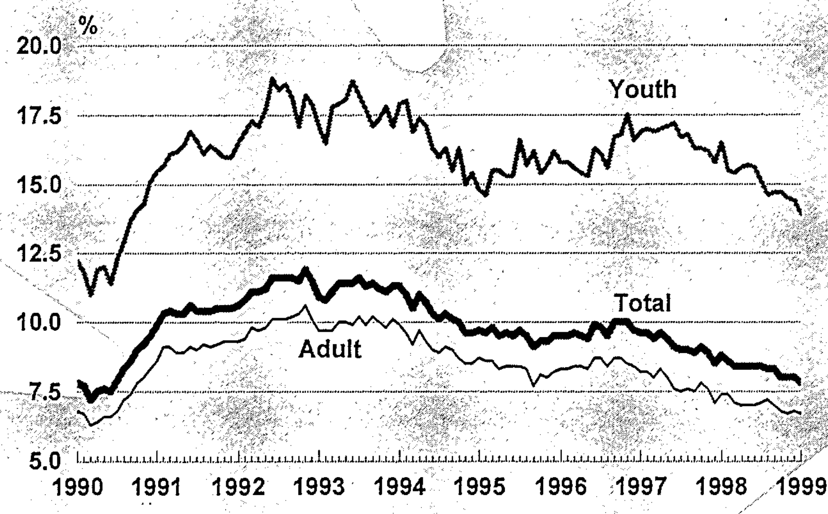
Canada's unemployment rate dips below 8%...

The national unemployment rate fell 0.2 percentage points to 7.8% in January, its lowest level since June 1990.

- **Reflecting strong employment gains, the <u>youth</u> unemployment rate has fallen 1.9 percentage points over the past year, reaching 13.9% in January.**

- **By comparison, the unemployment rate for <u>adults</u> has dropped by a relatively modest 0.4 points to 6.7%.**

Unemployment Rates



Source: Statistics Canada

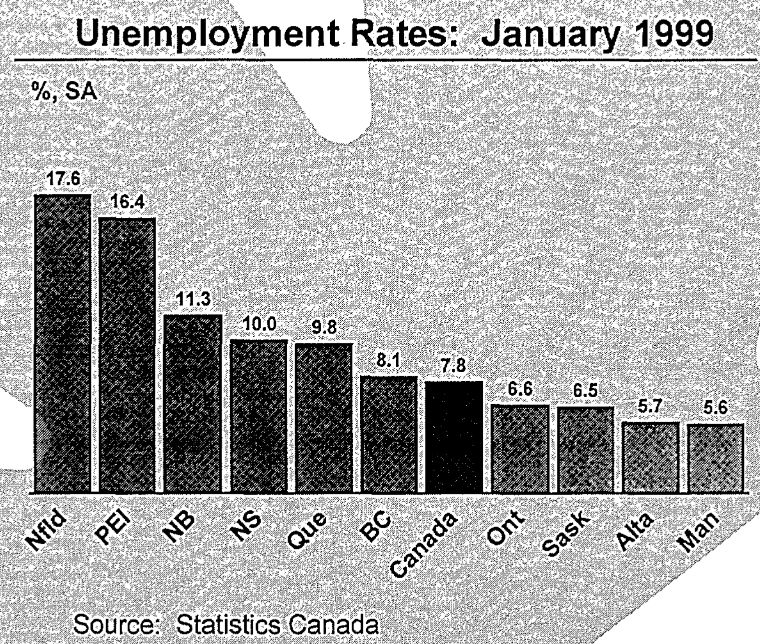
...and is down in most provinces

Employment increased in every province but Prince Edward Island in 1998.

- In fact, job growth exceeded 3.0% in New Brunswick, Ontario, Alberta, British Columbia and Quebec.

The largest year-over-year declines in provincial unemployment rates were in New Brunswick, Nova Scotia and Ontario.

- Despite job growth, unemployment rates increased on a year-over-year basis in Newfoundland, Saskatchewan and Manitoba. In these provinces, increases in the labour force outpaced growth in employment.



F

Domestic Scene

Financial Variables

Short term rates remain stable...

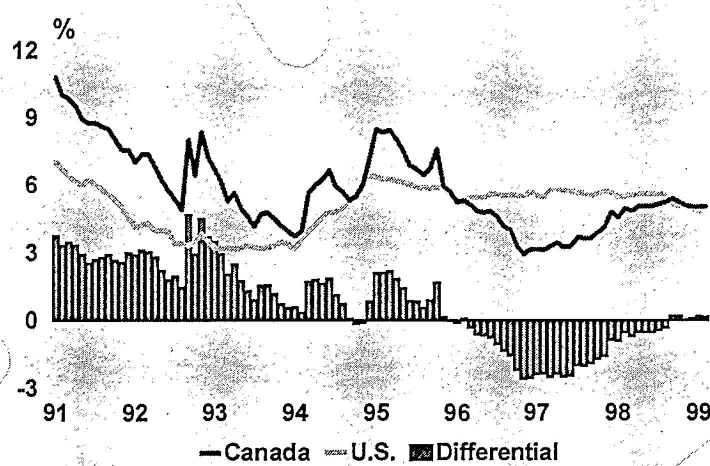
The Bank of Canada raised the trend-setting Bank Rate 100 basis points in August to defend the falling dollar. The central bank has subsequently clawed back 75 basis points of this increase, matching rate reductions in the U.S.

Since November, however, short-term interest rates have remained virtually unchanged in Canada.

- However, the Canada-U.S. spread has widened slightly, as global financial turmoil has pushed down U.S. rates.

Some analysts predict that the Federal Reserve will soon be forced to raise its Federal Funds rate to combat an overly robust U.S. economy. This could put upward pressure on Canadian rates.

Short-Term Interest Rates



Last data point plotted: February 1999

Source: Bank of Canada, 90-day Commercial Paper, last Wednesday in the month

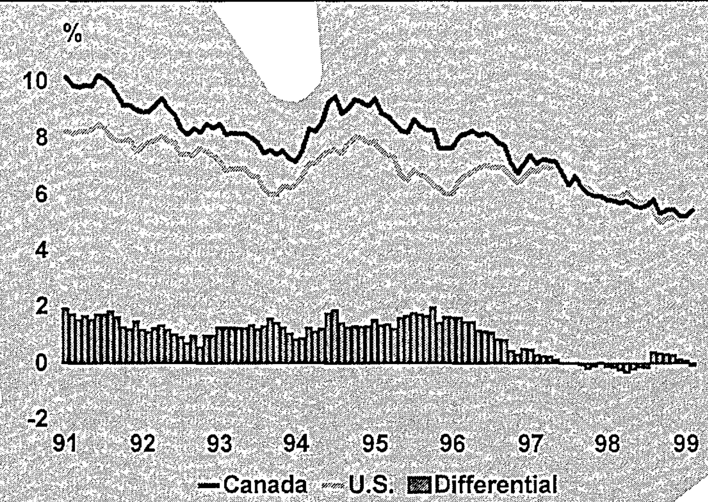
...but the threat of higher U.S. rates pushes up bond yields...

Long-term rates edged up at the end of February in response to a series of economic releases pointing to stronger-than-expected growth in North America.

- As the bond market sell-off has been more pronounced in the U.S., Canadian long-term rates are now below U.S. rates for the first time since July.

Higher long-term rates have put upward pressure on mortgage rates. The 5-year mortgage rate, after falling to a record low 6.6% in December, increased by 30 basis points in January and a further 25 points late in February.

Long-Term Interest Rates



Last data point plotted: February, 1999

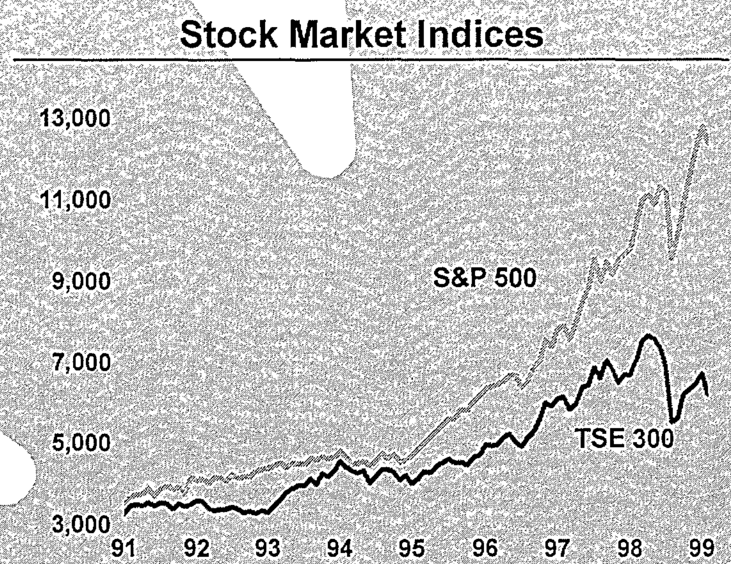
Source: Bank of Canada, Government long-term bond, last Wednesday in the month

F-2

...sparks a sell-off in the stock markets...

Higher bond yields have dampened the appeal of holding equities. Fears of slowing profit growth, particularly in the high-tech sector, have also weakened stock prices.

The TSE 300 hit a four-month low on March 3, erasing the solid gains recorded earlier in the year. Despite a subsequent rebound, as of March 5th stock prices were still down on the year.



Last data point plotted: February, 1999

Source: Statistics Canada

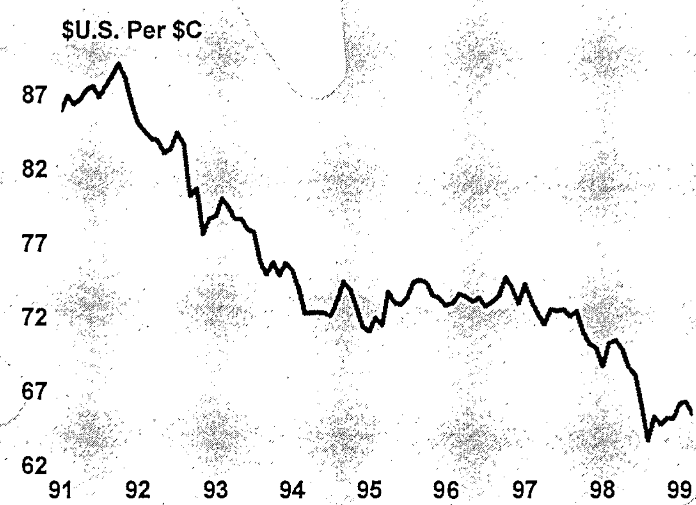
...and puts renewed pressure on the Canadian dollar

The Canadian dollar has gradually recovered since hitting an all-time low of US63.31¢ in late August.

Indeed, in early February, buoyed by renewed optimism for the Asian economies and larger-than-expected interest rate cuts in Europe, the dollar broke the US67¢ barrier for the first time since July.

- At the beginning of March, however, concern over Canada's widening current account deficit and a possible U.S. rate hike put renewed downward pressure on the dollar, dropping it below the US66¢ mark.

Canada-U.S. Exchange Rate



Last data point plotted: March 3, 1999

Source: Bank of Canada

G

Domestic Scene

Fiscal Track

The federal budget is in the black for the second straight year

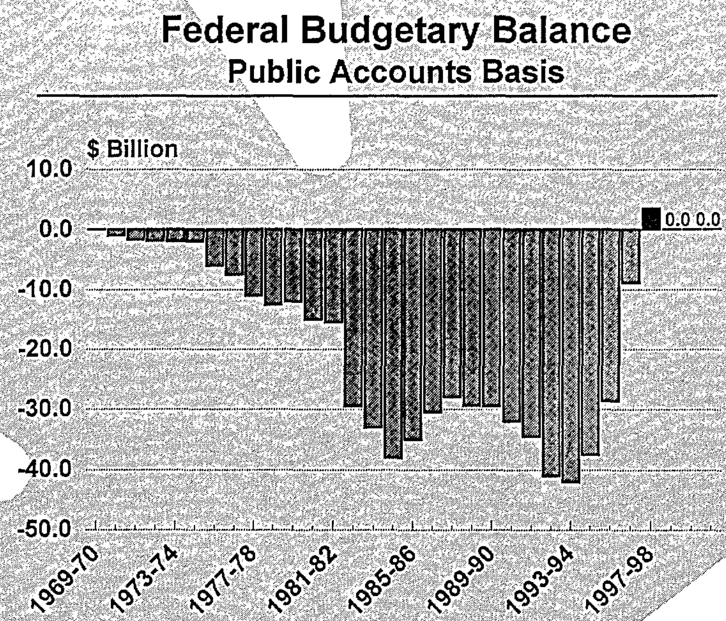
Following a $3.5 billion surplus last fiscal year (the first in 28 years), Finance Minister Martin has announced that a balanced budget – or better – is expected in the current 1998-99 fiscal year.

- With projections of balanced budgets over the next two years, this means four straight years of budgets in the black – for only the third time since Confederation.

- By the accounting standards used by most other countries, the federal government will post a financial surplus of $11.5 billion this year.

Continuing economic growth and the use of the Contingency Reserve (if not needed) to pay down the debt will lower Canada's debt-to-GDP ratio to just below 62% by 2000-01. This compares to a peak of 71% in 1995-96.

Four provinces and one territory are also expected to post balanced budgets or surpluses this fiscal year.



Source: Department of Finance Canada

H

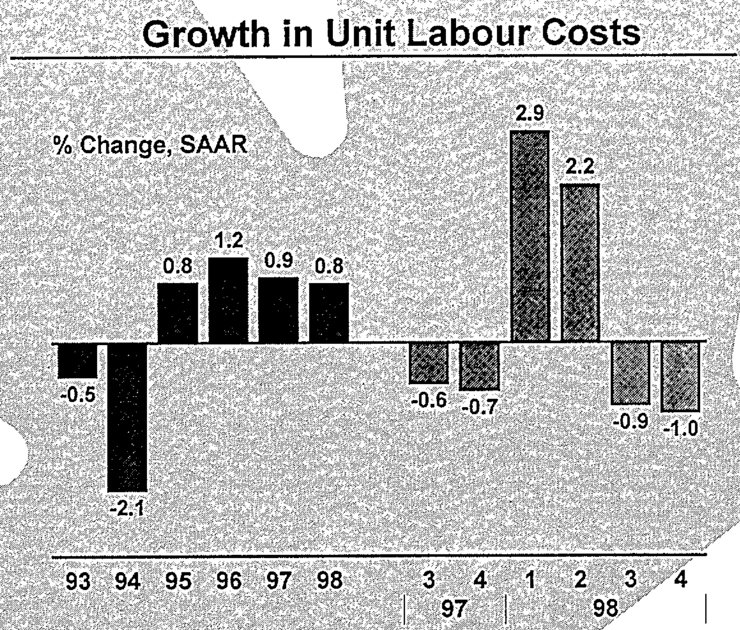
Domestic Scene

Competitiveness

Unit labour costs rise only slightly in 1998...

Unit labour costs declined in the last two quarters of 1998, as output expanded at a faster pace than the total wage bill.

On an annual basis, unit labour costs were up a modest 0.8% in 1998, roughly the same rate of increase as in the previous year.



Source: Industry Canada calculations

H-1

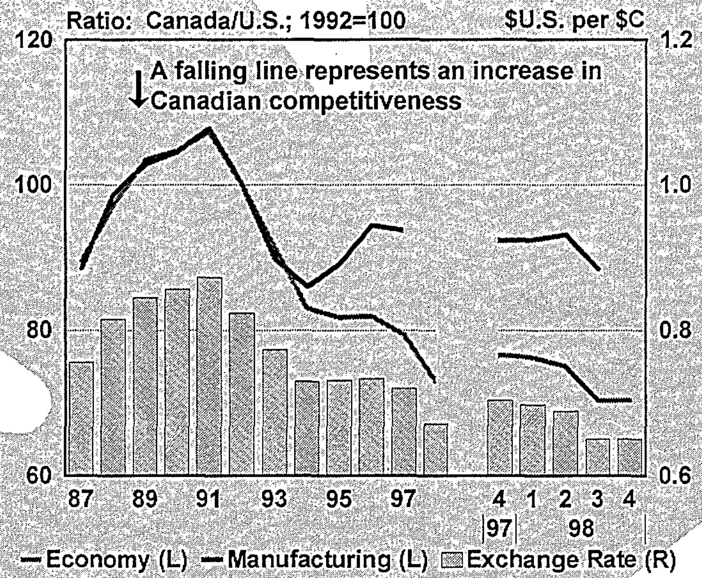
...and Canada's competitiveness improves with the falling dollar

At the economy-wide level, and on a common currency basis, Canadian unit labour costs fell 8.1% relative to those in the U.S. in 1998.

- This improved competitive position was due mainly to the sharp drop in the value of the Canadian dollar. The dollar averaged US72¢ in 1997, but fell to US67¢ in 1998.

- However, Canadian firms were also more successful in controlling costs, with unit labour costs rising more slowly in Canada than in the U.S. (+0.8% versus +2.3%).

Unit Labour Cost Comparison ($US)



Note: Quarterly manufacturing ULC for 1998Q4 are not yet available.
Source: Bureau of Labor Statistics, Industry Canada & Statistics Canada

I

Domestic Scene

International Accounts

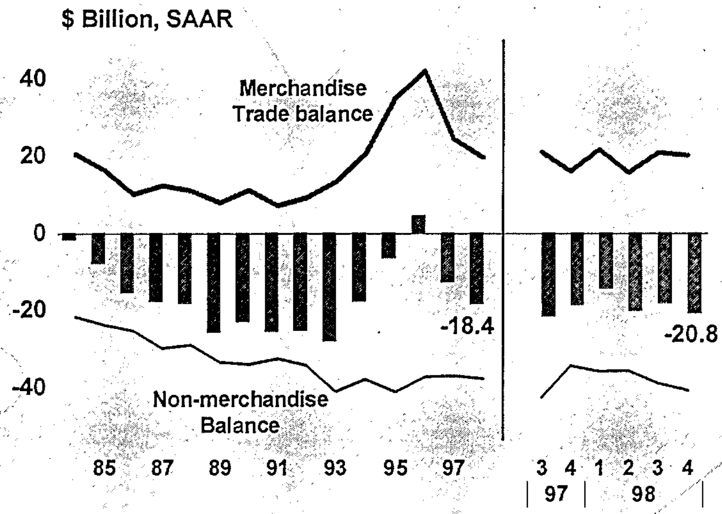
The current account deficit widens in 1998...

A smaller trade surplus and higher payments to foreign direct investors resulted in a slight widening of Canada's current account deficit in the fourth quarter.

For 1998 as a whole, the current account deficit rose $5.6 billion to $18.4 billion.

- After posting a rare surplus in 1996, this marks the second straight year in which Canadian residents spent more than they earned from abroad.

Current Account & Trade Balances



The merchandise trade balance represents net exports of goods.

The non-merchandise trade balance represents net exports of services plus net receipts of investment income and transfers.

Source: Statistics Canada

...due mainly to a lower surplus on trade in goods

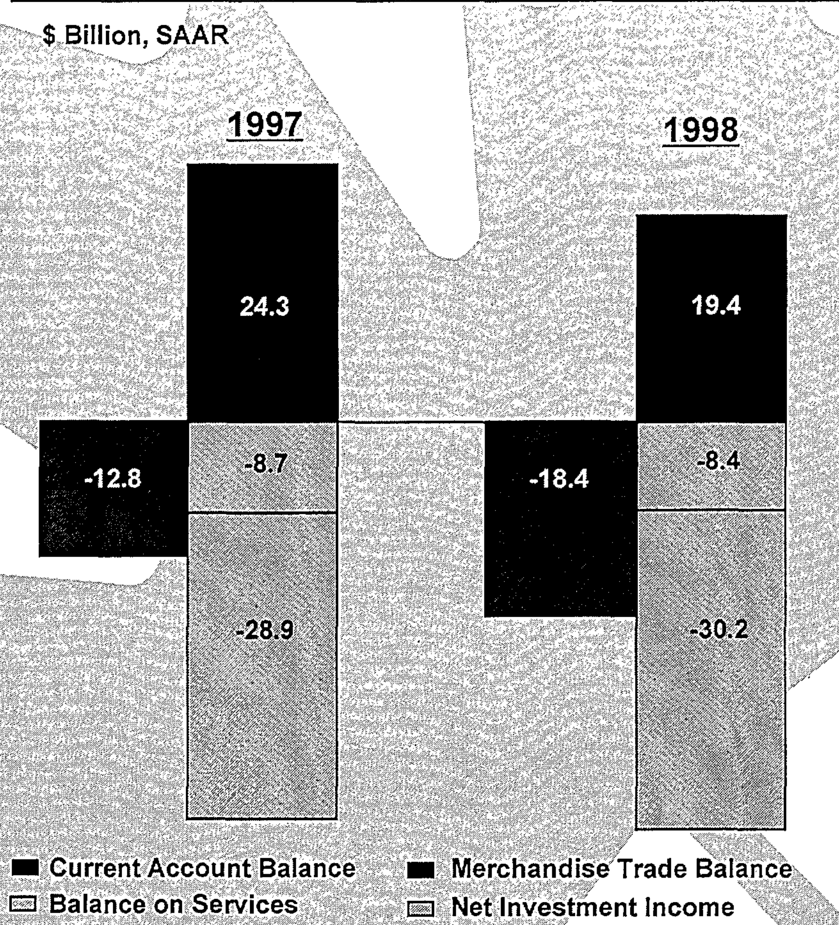
The deterioration in Canada's current account position that occurred in 1998 was due mainly to a lower merchandise trade surplus (nominal basis).

- Widespread import gains outpaced exports, reducing Canada's trade surplus to $19 billion – compared to a record $42 billion surplus two years ago.

Canada's deficit on investment income also widened in 1998, with the weak dollar boosting interest payments on foreign-currency denominated debt.

A sharp fall in Canada's travel deficit was offset by increased deficits in other components of the Services balance.

Main Components of the Current Account



Source: Statistics Canada

Solid export growth, particularly to the U.S. market...

On a balance of payments basis, merchandise exports rose 7.4% in 1998, fuelled by strong demand from the robust U.S. economy.

- Exports to the European Union also increased on the year, but shipments to Asia fell sharply as the region struggled with financial crisis.

On a commodity basis, the strong rise in exports to the U.S. market increased the share of higher value-added goods in total exports.

- Exports of M&E, Automotive Products and Other Consumer Goods registered strong gains in 1998, while resource-based exports were generally weak.

Merchandise Exports, 1998

	$ Billion	% Change, 1997-98
Total	323.4	7.4
By Trade Partner		
U.S.	270.6	11.2
Japan	9.6	-20.0
E.U.	17.8	7.0
All Others	25.4	-12.6
By Principal Commodity		
Agricultural & Fishing Products	25.2	2.0
Energy Products	23.4	-12.8
Forestry Products	35.5	1.7
Industrial Goods & Materials	57.4	3.2
Machinery & Equipment	78.8	15.9
Automotive Products	79.2	13.1
Other Consumer Goods	12.5	17.2

Source: Statistics Canada

...cannot keep pace with widespread import growth

Import gains were widespread in 1998, both across major trading partners and for most major commodities.

Regional trade balances were strongly affected by shifting trade patterns in 1998.

- Canada's surplus with the U.S. rose $3.8 billion to $36.4 billion.
- Our net position with Japan fell from a surplus of $3.4 billion in 1997 to near balance in 1998 – the impact of lower exports was amplified by higher imports.
- The trade deficit with the European Union was little changed in 1998, but increased sharply against all other countries.

Merchandise Imports, 1998

	$ Billion	% Change, 1997-98
Total	304.0	9.8
By Trade Partner		
U.S.	234.2	11.1
Japan	9.7	11.0
E.U.	25.4	5.3
All Others	34.7	4.6
By Principal Commodity		
Agricultural & Fishing Products	17.3	10.8
Energy Products	8.7	-17.8
Forestry Products	2.5	5.2
Industrial Goods & Materials	60.3	10.9
Machinery & Equipment	101.6	11.4
Automotive Products	66.8	10.1
Other Consumer Goods	34.6	16.8

Balance by Trade Partner, 1998

	$ Billion	Change, 1997-98
Total	19.4	-4.8
U.S.	36.4	3.8
Japan	-0.0	-3.4
E.U.	-7.6	-0.1
All Others	-9.4	-5.2

Source: Statistics Canada

J

Domestic Scene

Sectoral Overview

1998 ends on a high note in most sectors...

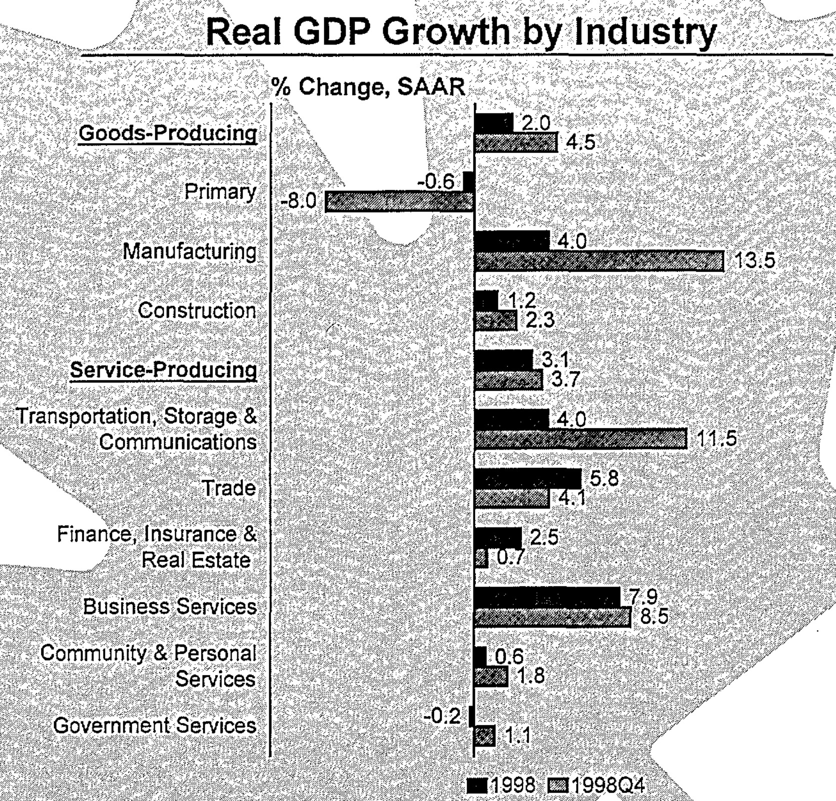
Output in the Goods-producing industries advanced strongly in the fourth quarter, rebounding from two consecutive declines. On an annual basis, output rose 2.0% in 1998.

- Manufacturing industries closed out the year strongly, buoyed by a strike-related rebound and surging U.S. demand. Factory output was up a whopping 13.5% in the fourth quarter of 1998 and 4.0% overall on the year.

- The Primary industries performed poorly throughout 1998. Weak overseas demand and higher global production have depressed commodity prices and held back production.

The Service sector continued to expand in 1998, posting advances in each quarter.

- Output advanced 3.1% in 1998, boosted by strong demand for Business Services (particularly Computer Services related to fixing the Y2K bug) and Trade.



Source: Statistics Canada

...as Services spark the best year for job creation this decade...

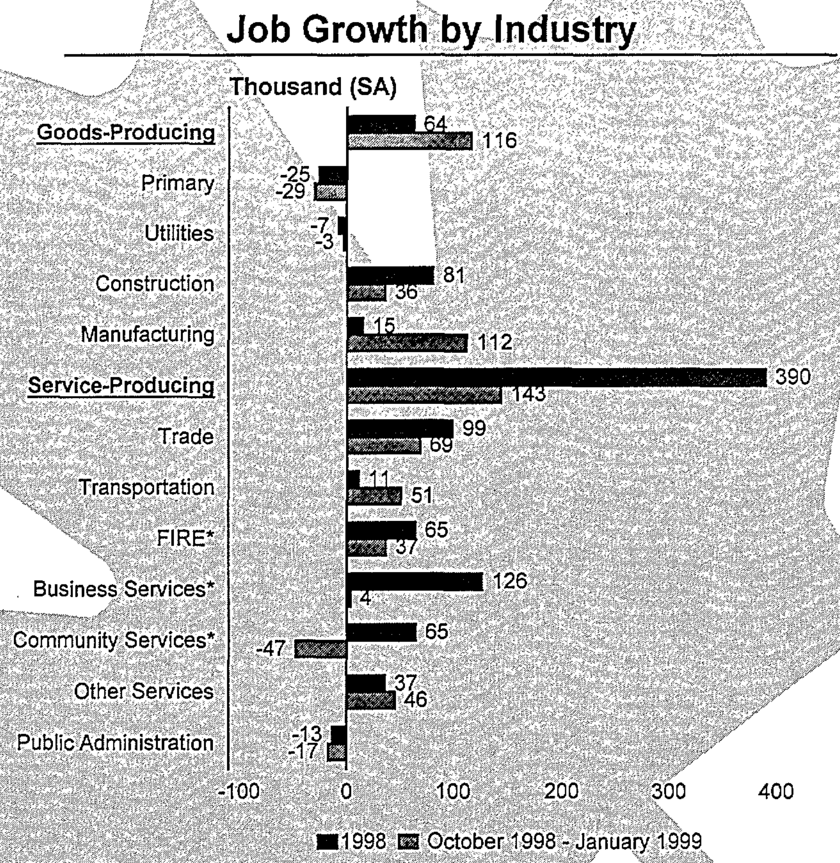
The Service-producing industries were the main engine of job creation in 1998 (+390,000).

- **Mirroring trends in output, over half of these new jobs were in Business Services (particularly computing and engineering) and Trade.**

Employment in the Goods-producing sector was up 64,000 in 1998.

- **Significant job losses in the Primary industries were more than offset by a sharp rise in the number of Construction workers (following three years of weakness).**

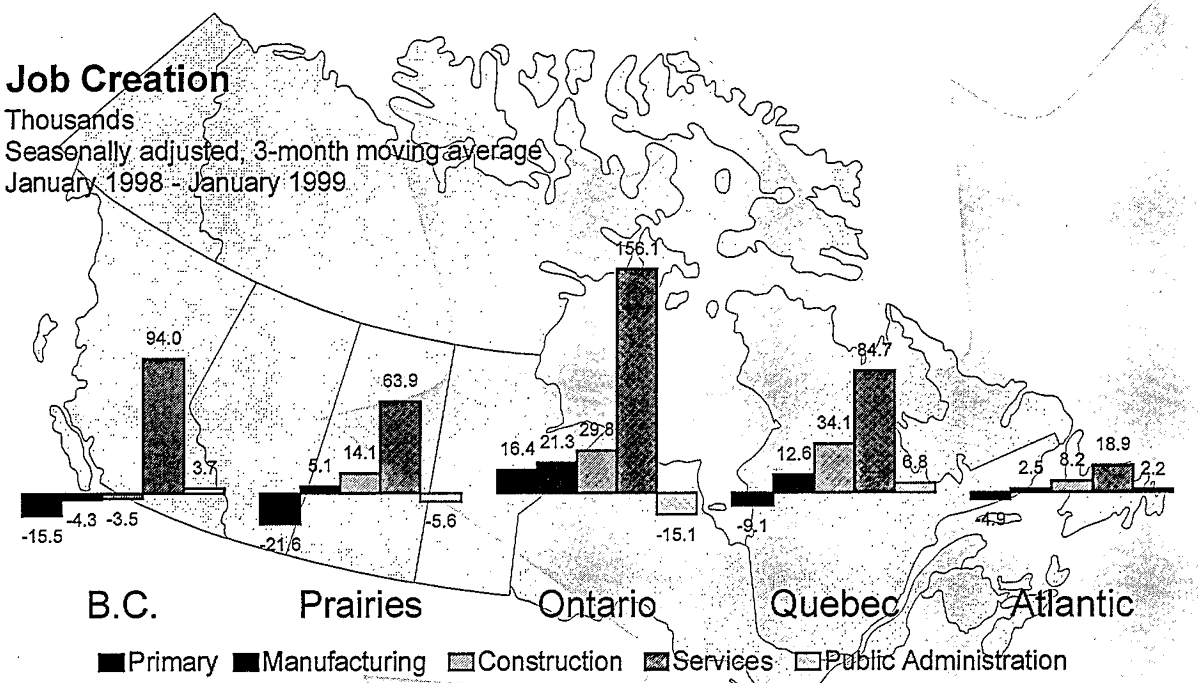
- **Employment in Manufacturing was little changed on the year, but gained momentum in the fourth quarter that carried over into January.**



Source: Statistics Canada

*FIRE: Finance, Insurance, Real Estate and Leasing
Business Services: Management, Administrative, Professional, Scientific & Technical Services
Community Services: Educational Services, Health & Social Assistance.

...with substantial gains in all regions



Gains in the Service sector far outweighed job losses in the Goods-producing industries of British Columbia, the Prairies and Atlantic Canada in 1998.

In Ontario and Quebec, the Goods sector also contributed to overall employment growth, albeit to a lesser extent than Services.

Still, wage settlements remain stable

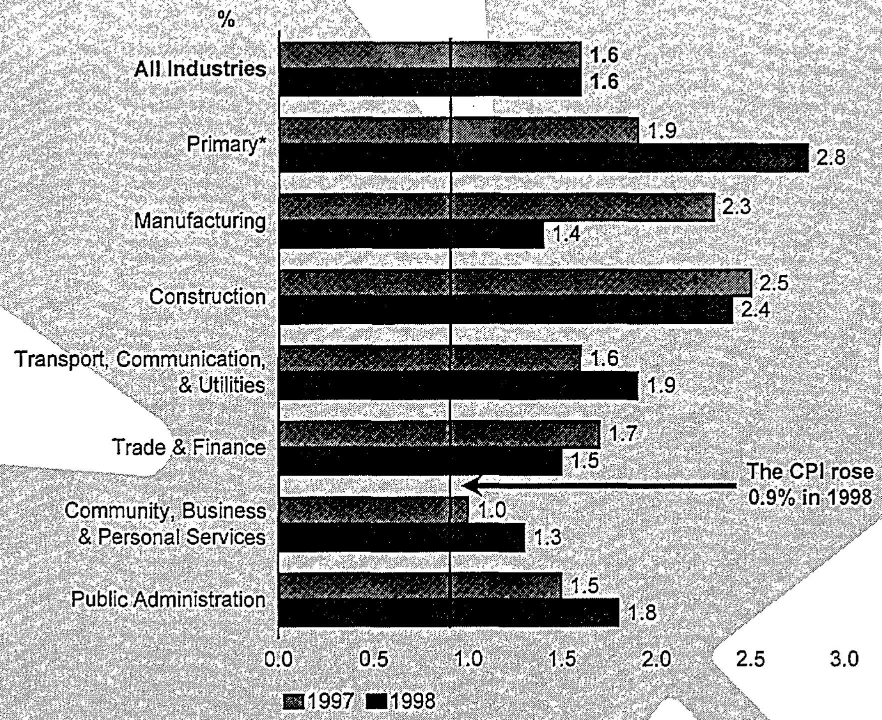
Major wage settlements averaged 1.6% in 1998. This is the same as in 1997, but higher than increases of 0.9% in both 1995 and 1996.

- Wage settlements outpaced increases in the CPI in all major industry groups in 1998.

Excluding the Primary sector (whose results are based on one settlement), the highest average wage settlement was in Construction (+2.4%).

Wage settlements were below average in Community, Business & Personal Services and Manufacturing. Indeed, Manufacturing was the only industry to experience a significant slowdown in wage settlements in 1998.

Wage Settlements by Industry



Effective average annual adjustments in base wage rates from major collective bargaining agreements.

*Based on one settlement involving 700 employees.

Source: Human Resources Development Canada

Profits surge in the fourth quarter but decline on an annual basis...

Corporate operating profits increased 15% in the fourth quarter of 1998, but declined 4.8% on an annual basis. Sixteen of 30 major industry groups reported lower profits in 1998.

The collapse of world oil prices drove down profits in the Petroleum & Natural Gas industry by 39% in 1998. Excluding this industry, corporate profits were little changed in 1998.

- Other resource-based industries also suffered, although the lower value of the Canadian dollar partly offset the steep decline in global commodity prices.

The Motor Vehicle industry had a good year, as strong U.S. demand for Canadian-built automotive products contributed to a 5% increase in profits in 1998.

Profits in the Consumer Goods & Services industry were also up strongly.

Corporate Operating Profits

	Level ($M) 98Q4	98Q3-98Q4 ($M)	98Q3-98Q4 (%)	97-98 (%)	Profit Margins (%) 98Q4
Food (including food retailing)	1347	129	10.6	8.5	3.0
Beverages & Tobacco	855	369	75.9	14.8	20.0
Wood & Paper	1153	-8	-0.7	35.2	5.8
Petroleum & Natural Gas	1926	-403	-17.3	-39.1	7.0
Other Fuels & Electricity	402	-1	-0.2	-13.0	20.4
Chemicals & Textiles	1421	-338	-19.2	5.4	6.7
Iron, Steel & Related	336	-137	-29.0	-6.6	7.1
Non-Ferrous Metal & Primary Metal	467	134	40.2	-44.0	8.1
Fabricated Metal	479	-36	-7.0	-1.6	4.6
Machinery & Equipment*	645	61	10.4	-4.4	4.8
Motor Vehicles & Parts	3207	1553	93.9	4.7	5.8
Other Transportation Equipment	593	276	87.1	-1.1	10.3
Household Appliances & Electrical	129	-45	-25.9	4.0	2.5
Electronic Equip. & Computer Serv.	1633	407	33.2	19.9	9.5
Real Estate Developers & Operators	1045	-259	-19.9	-2.0	9.2
Building Materials & Construction	333	280	528.3	-37.7	3.2
Transportation Services	394	-65	-14.2	-29.6	3.1
Printing, Publishing & Broadcasting	716	10	1.4	5.4	8.3
Telecom Carriers, Postal/Courier	1266	71	5.9	-0.5	17.3
Business Services	686	212	44.7	29.6	7.8
Other Services**	632	164	35.0	-11.2	4.7
Consumer Goods & Services	1429	203	16.6	17.8	3.8
Total Non-Financial	21103	2574	13.9	-5.4	6.0
Total Finance & Insurance	7616	1189	18.5	-3.1	18.2
Total - All Industries	28719	3762	15.1	-4.8	7.3

* Except Electrical Machinery
** Accommodation, Food & Beverage, Educational, Health & Recreational Services

Source: Statistics Canada

...fuelling lower investment plans

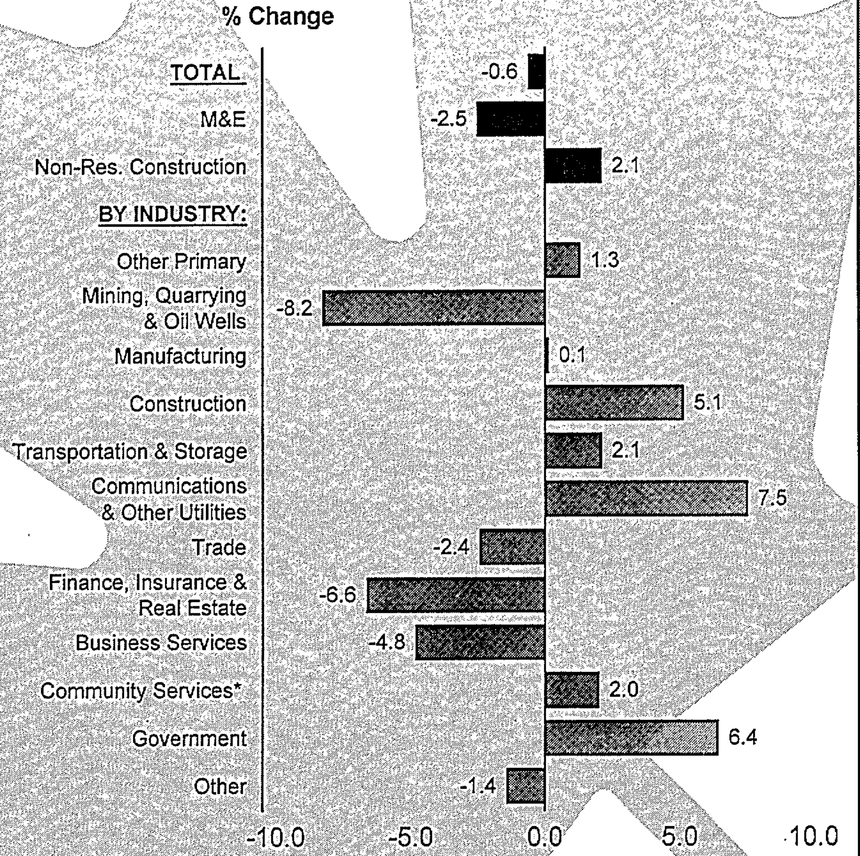
After increasing an average 5.4% per year since 1994, investment in plant & equipment is expected to edge down 0.6% in 1999.

Spending on Non-Residential Construction should increase 2.1% in 1999. However, this will be offset by an expected 2.5% fall in M&E investment.

- **The drop in M&E investment is due mainly to planned spending reductions by leasing companies, as automakers are expected to focus on selling rather than leasing vehicles. Excluding this industry, M&E investment intentions would be flat on the year.**

Elsewhere, the Communications industry will continue to invest heavily in new technologies. However, low oil prices will lead to the second straight drop in investment in the oil patch. Following six consecutive yearly gains, Manufacturers' spending plans for 1999 are virtually unchanged from 1998.

1999 Investment Intentions by Industry (Plant & Equipment)



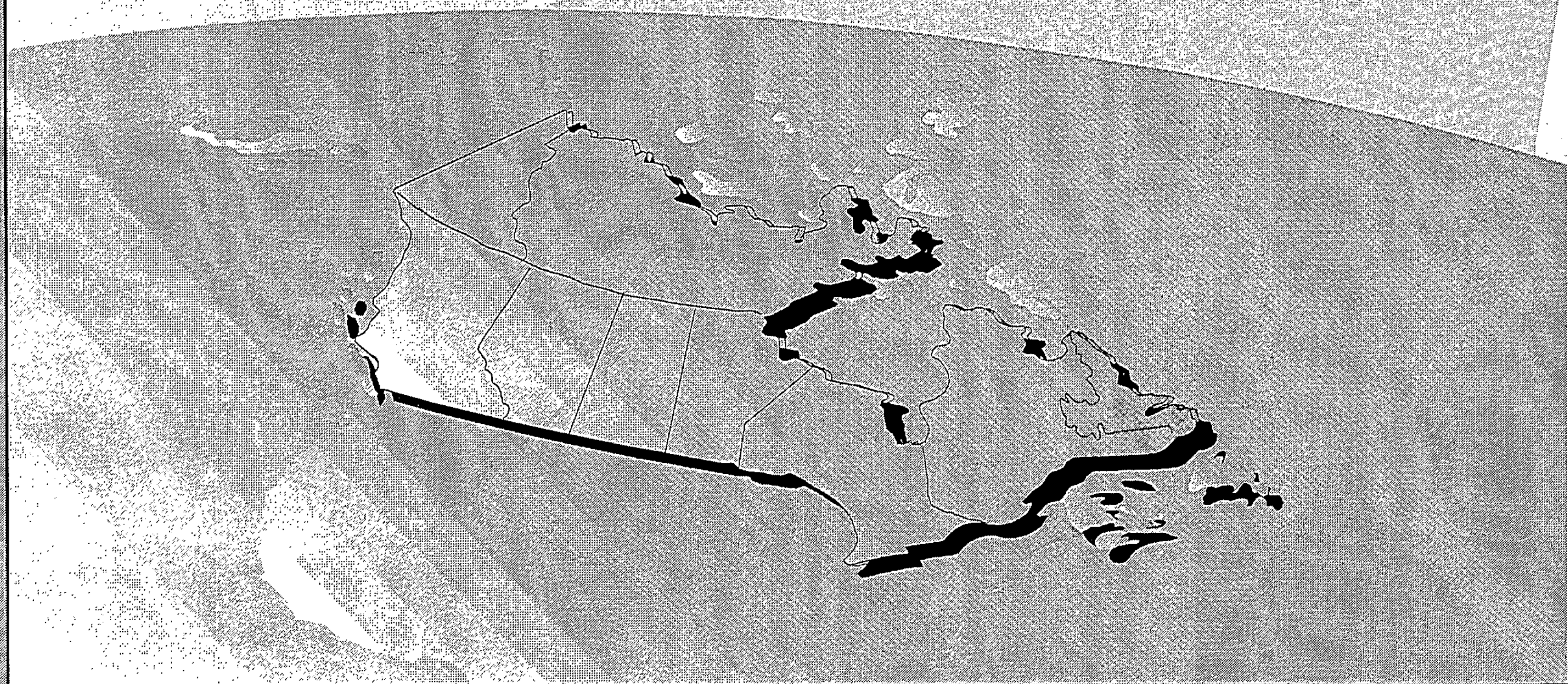
Source: Statistics Canada
Survey of public and private investment intentions

* Educational and Health & Social Services

K

Canada's Regions and the Knowledge-Based Economy

— A Compelling Journey to a Promising Future —



Introduction

Canada is well poised to take advantage of the emerging opportunities brought about by the knowledge-based economy (KBE). We have a first-class technological infrastructure and a strong technological environment — indeed, by some measures, Canada has the best combination of infrastructure and people in the world!

However, focusing only on the national scene can give an incomplete picture. How are our individual regions faring? Are they equally well positioned to benefit from the new economy? And what are the strengths and weaknesses of individual regions?

These are important questions, and Canada's successful transition into a first-class KBE will ultimately depend on the progress of our regions. In that vein, this report shows how individual regions are preparing for future growth by assessing their KBE readiness.

L

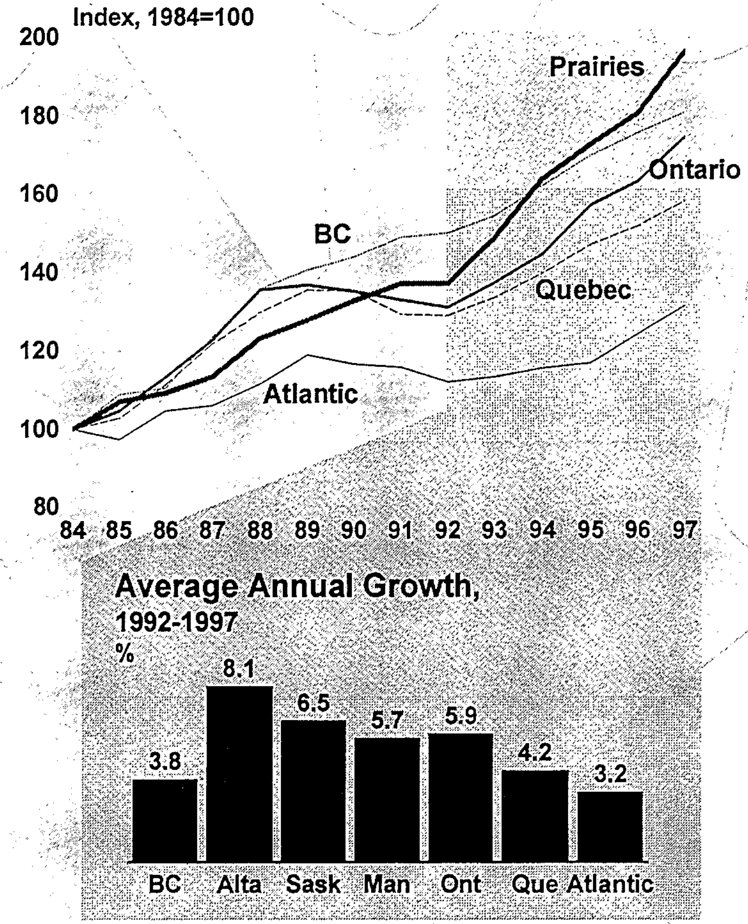
A Compelling Journey to a Promising Future

While all regions are focusing more on the KBE...

High-knowledge activity is increasing in all regions, albeit at different speeds.

- The high-knowledge sector in the Prairies and Ontario has been growing particularly fast in recent years.

High-Knowledge* Output Growth



* For a discussion of the high-knowledge industrial classification, see the Annex.
Source: Industry Canada calculations based on Statistics Canada data

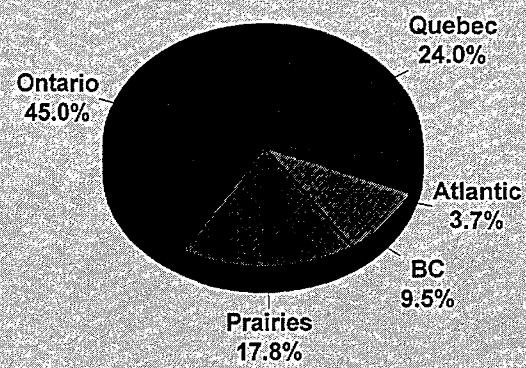
...high-knowledge activity is still largely concentrated in Ontario...

Ontario accounts for nearly half of all high-knowledge output in Canada, followed by Quebec which contributes about a quarter.

Central Canada's high proportion of KBE activity reflects its industrial structure.

- Manufacturing and Business Services sectors represent the lion's share of the high-knowledge industries, and these are concentrated in Central Canada.

Share of High-Knowledge Activity*, 1997



* Based on Real GDP at factor cost.
Source: Industry Canada calculations based on data from Statistics Canada

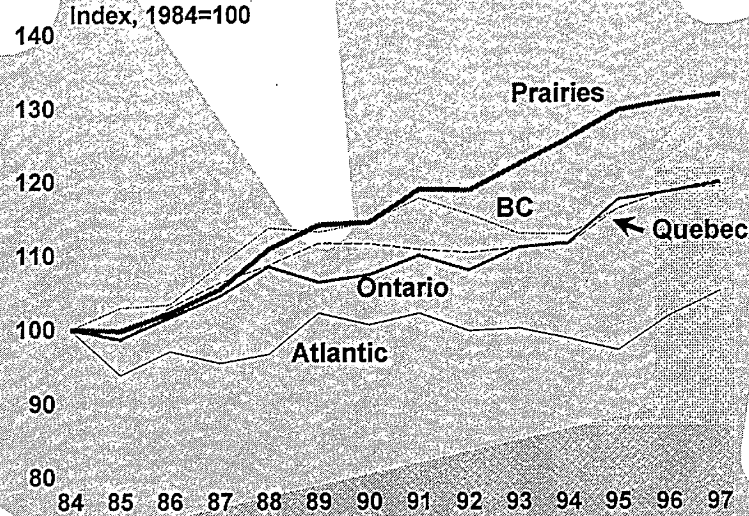
...and knowledge intensity is increasing most rapidly in the Prairies

The amount of high-knowledge activity as a share of total economic activity is rising across all regions.

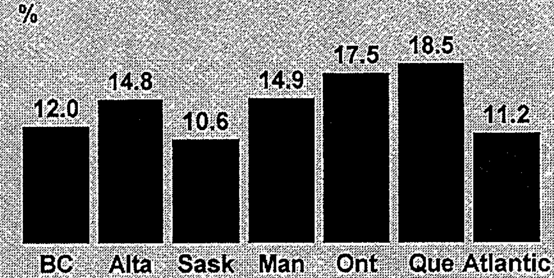
However, gains are especially strong in the Prairie provinces.

The importance of the KBE sector in provincial economic activity is highest in Central Canada, followed by Manitoba and Alberta.

High-Knowledge Share of Business Output



High-Knowledge Share of Business Output, 1997



Source: Industry Canada calculations based on data from Statistics Canada

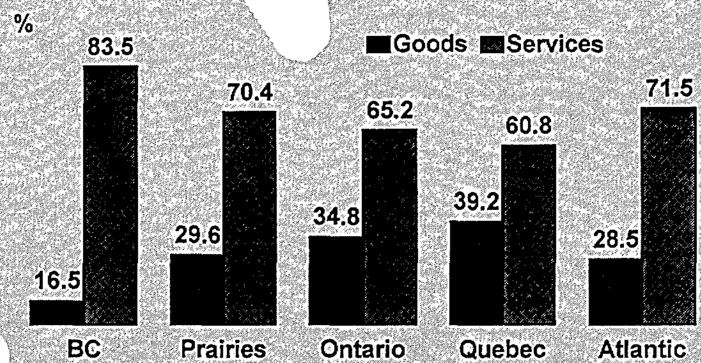
The KBE is more balanced among Goods and Services in Central Canada...

The composition of the KBE differs across regions. Central Canada's knowledge economy is more balanced between the goods and services sectors.

- Goods-producing industries account for more than a third of total knowledge employment.

In western provinces, particularly BC, and Atlantic Canada, the knowledge economy is concentrated in the Services sector — with over seven out of ten jobs.

Knowledge* Employment Shares, 1997



* Knowledge employment is defined as employment in high-knowledge industries. High-knowledge industries are listed in the Annex.
Source: Industry Canada calculations based on Statistics Canada data

...but the top knowledge industries are quite similar across regions

The shape of knowledge activity within the Goods and the Services sectors does not vary significantly across regions.

In the Services sector, the top four knowledge industries are the same across regions.

- **Of these, Other Business Services accounts for more than 30% of all knowledge employment. Engineering, Computer and Management Services round out the top 4 industries.**

Major goods-producing knowledge industries are Pharmaceuticals, Electrical Power, Machinery and Communications Products. Aircrafts and Parts manufacturing is important in Quebec and Atlantic Canada.

Top Knowledge* Industries, 1997

	BC	Prairies	Ontario	Quebec	Atlantic
Goods:					
Pharmaceuticals	✓	✓	✓	✓	✓
Electrical Power	✓	✓	✓	✓	✓
Machinery	✓	✓	✓		✓
Communications Products	✓	✓	✓	✓	
Aircrafts & Parts				✓	✓
Services:					
Other Business Services**	✓	✓	✓	✓	✓
Engineering Services	✓	✓	✓	✓	✓
Computer Services	✓	✓	✓	✓	✓
Management Services	✓	✓	✓	✓	✓

* Knowledge employment is defined as employment in high-knowledge industries; Top four industries in the Goods and Services sectors
** Other Business Services include: Employment Agencies & Personnel Suppliers, Accounting & Bookkeeping Services, Advertising Services, Office of Lawyers and Notaries and Other Business Services.
Source: Industry Canada calculations based on Statistics Canada data

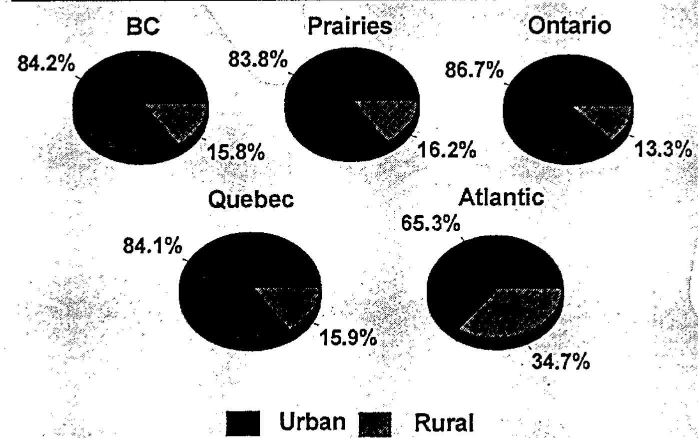
The KBE remains essentially an urban phenomenon

High-knowledge activity is largely concentrated in urban areas across all regions.

- From BC to Quebec, more than eight high-knowledge jobs out of ten occur in urban centres.

- In Atlantic Canada, the region with the highest proportion of rural workers, knowledge activity is concentrated in urban areas — with two-thirds of all high-knowledge jobs.

Urban and Rural Shares* of High-Knowledge Employment, 1997



* Urban share of high-knowledge employment refers to the share of total high-knowledge employment found in Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs) with more than 20,000 population. Rural share of high-knowledge employment refers to the share of high-knowledge employment found outside these areas.

Source: Industry Canada calculations based on Statistics Canada data

M

How are Regions Adjusting to the KBE?

What does it take to succeed in the KBE?

Strong economic fundamentals, a skilled and innovative workforce and an appropriately large technological infrastructure are key to success in the new economy.

The next section will examine how the regions in Canada are faring in terms of their "readiness" for future growth in the KBE.

- ☑ Proper macro fundamentals
- ☑ A skilled workforce
- ☑ An outward orientation
- ☑ An innovation culture
- ☑ Information and communications infrastructure

The economic climate is favourable across regions...

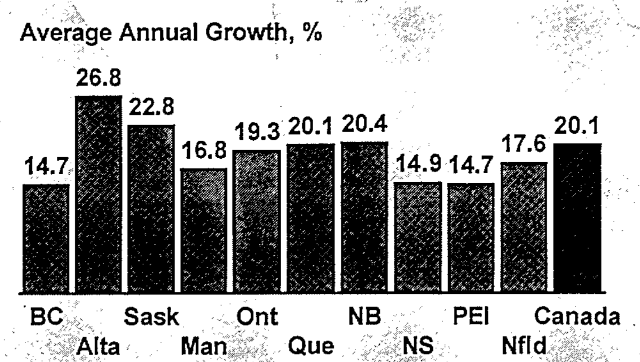
Strong profits and sustained economic growth are key elements for increased investment and a flourishing KBE.

- Corporate profits have been particularly strong over the 1992-1997 period.

- All regions should post sustained growth this year and next, with the exception of BC — which should soon show modest signs of improvement after bearing the brunt of the Canadian impact of the Asia crisis.

Moreover, all governments have significantly improved their fiscal situation — leaving all regions better positioned to seize opportunities flowing from the new economy.

Corporate Profits Growth, 1992-97



Source: Statistics Canada

Budget Balance as a Proportion of GDP*

	1992-93 (%)	1997-98 (%)
British Columbia	-1.9	-0.1
Alberta	-4.6	2.6
Saskatchewan	-2.8	0.1
Manitoba	-2.3	0.3
Ontario	-4.4	-1.1
Quebec	-3.2	-1.1
New Brunswick	-1.9	0.4
Nova Scotia	-3.4	0.2
Prince Edward Island	-3.5	-0.2
Newfoundland	-2.7	-0.1
Federal	-5.9	0.4

* Public accounts basis (a negative number indicates a deficit)
Source: Department of Finance

...allowing for a general public commitment to the new economy

Indeed, recent federal and provincial budgets include a number of initiatives which focus on innovation, information technologies and human capital.

Selected KBE Initiatives

Federal (1998 and 1999 Budgets)

- Innovation
  - Canadian Foundation for Innovation
  - Technology Partnerships Canada
  - Industrial Research Assistance Program
- Connectedness:
  - Community Access Program
  - SchoolNet
  - Smart Communities Development Project
- Human Capital:
  - Financial assistance for students
  - Tax relief for life-long learning
  - Support for advanced research and graduate students

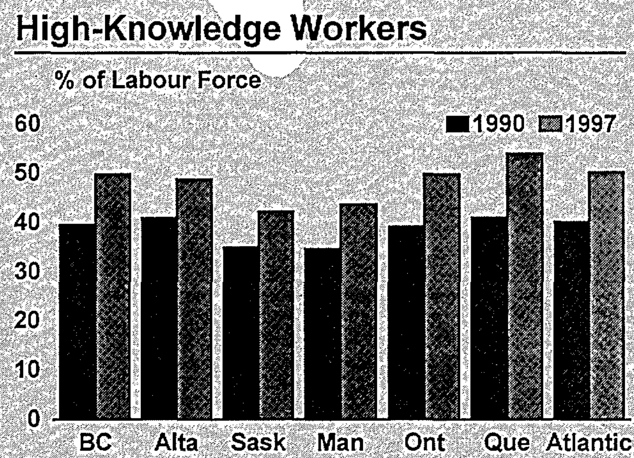
Provincial (1998 Budgets)

- New Economic Strategy (Nova Scotia, Quebec)
- Increased R&D Initiatives (Manitoba, Ontario, Saskatchewan)
- Science & Technology Funding (Alberta, Manitoba, Newfoundland, Ontario, Saskatchewan)
- High Skill Initiatives (BC, New Brunswick, Ontario)

All regions are also increasingly well-endowed in skilled labour...

Human capital has a crucial role in the knowledge economy — skilled and educated workers are needed to maximize the benefits of new technologies.

- **In this regard, all regions are well prepared as they are similarly well-endowed in knowledge workers.**



Source: Industry Canada calculations based on Statistics Canada data

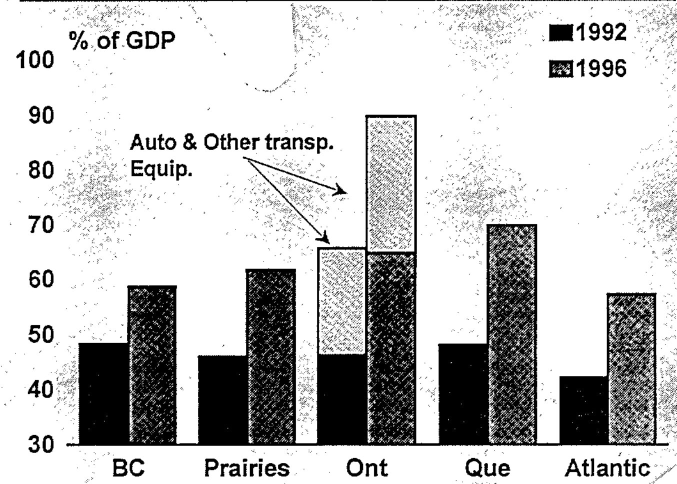
...and increasingly open to the rest of the world

Openness to trade is necessary if economies are to exploit their competitive advantages and become more efficient and richer.

- **Trade (exports plus imports) represents 90% of Ontario's GDP, compared to an average of 64% for the rest of Canada. This discrepancy can be attributed, however, to the important share of autos and other transportation equipment in Ontario's international trade.**

- **All provinces have increased their trade-orientation over the 1992-1996 period.**

Trade in Goods and Services*



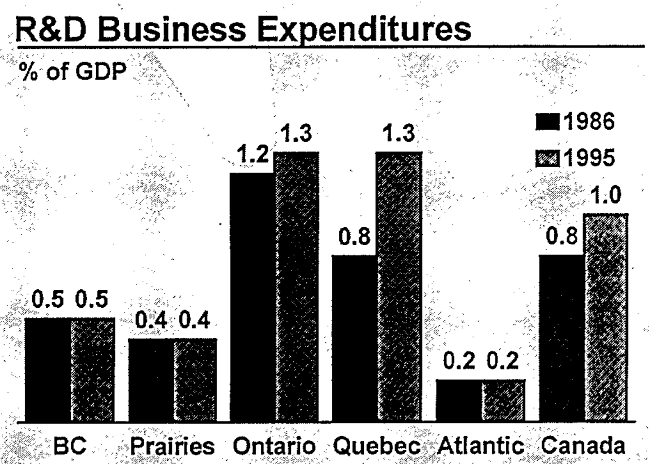
* (Exports + Imports)/GDP

Source: Statistics Canada

But Ontario is more innovative — it leads in R&D...

R&D spending relative to GDP is highest in Central Canada.

More than half of Canadian R&D expenditures in 1995 took place in Ontario, and almost another 30% in Quebec.



Regional Share of R&D Business Expenditures, 1995

BC	Prairies	Ontario	Quebec	Atlantic	Canada
7.2	7.8	55.3	28.4	1.3	100.0

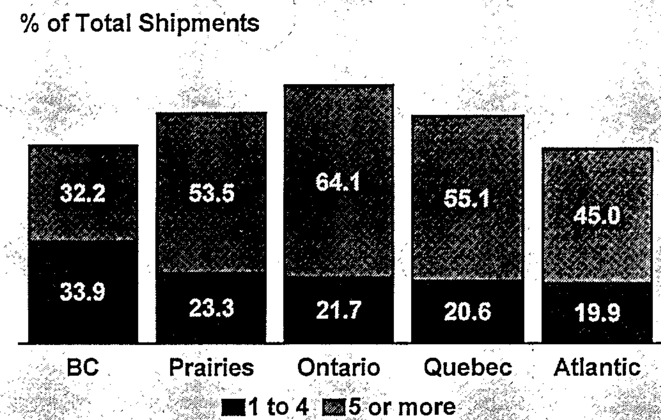
Source: Industry Canada calculations based on Statistics Canada data; Statistics Canada

...in technology adoption...

The use of advanced technologies is greatest in Ontario, followed by the Prairies and Quebec.

- Ontario is distinct in its high percentage of firms using multiple advanced technologies.

Number of Advanced Technologies Used Manufacturing Sector, 1993



Source: J. Baldwin and D. Sabourin, *Technology Adoption in Canadian Manufacturing*, Statistics Canada, 1995.

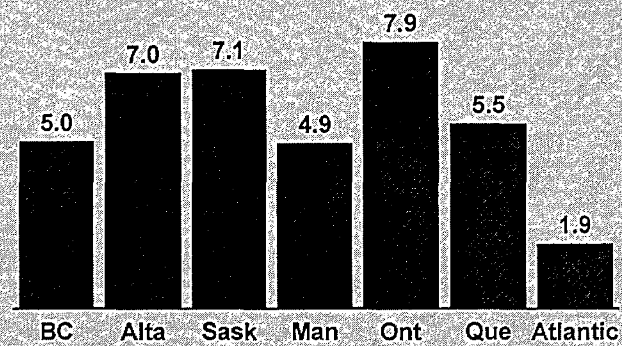
...in inventiveness...

Ontario and the Prairies are also more "inventive" as measured by patents granted.

- In relative terms, they are granted three to four times as many patents as Atlantic Canada.

Patents Granted 1993-1995

Per 100,000 Workers



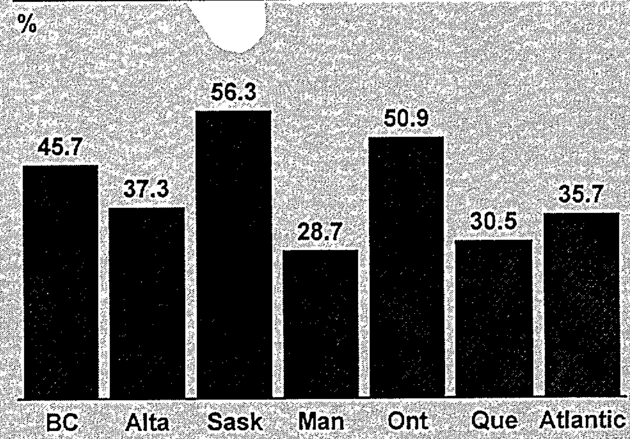
Source: Industry Canada, Canadian Intellectual Property Office

...and formal training within the workplace

Firms in Saskatchewan and Ontario are more likely to offer formal training to workers, followed by firms in BC and Alberta.

Formal training by firms is lowest in Manitoba and Quebec.

Percentage of Establishments with Formal Training, 1995



Source: G. Betcherman, J.N. Leckie and K. McMullen, *Developing Skills in the Canadian Workplace: The Results of the Ekos Workplace Training Survey*, CPRN Study W / 02, 1997.

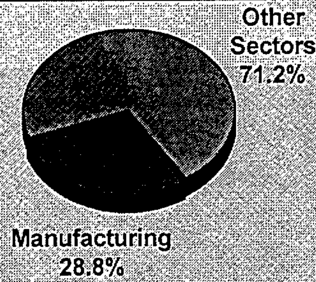
Ontario benefits from its industrial structure...

Higher R&D spending and more formal training by firms in Ontario partly reflects the province's industrial make-up — including a strong manufacturing sector and a high concentration of large firms.

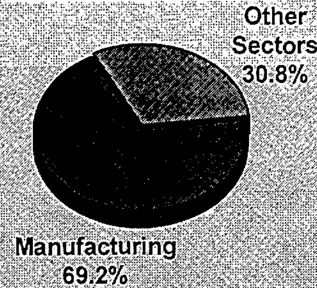
- The manufacturing sector invests more than other sectors in R&D.

- Evidence also shows that large firms invest more in R&D and provide more formal training.

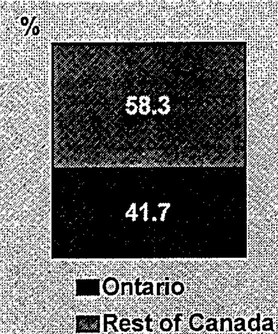
Share of Output*, Ontario, 1995



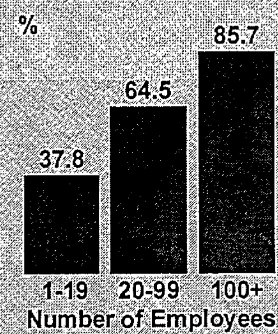
Share of R&D Expenditures*, Ontario, 1995



Regional Share of Large Firms*, 1996



Incidence of Training by Firm Size, 1995



* Business Sector

Source: Statistics Canada; G. Betcherman, J.N. Leckie and K. McMullen, *Developing Skills in the Canadian Workplace: The Results of the Ekos Workplace Training Survey*, CPRN Study W / 02, 1997.

...and the presence of more foreign subsidiaries

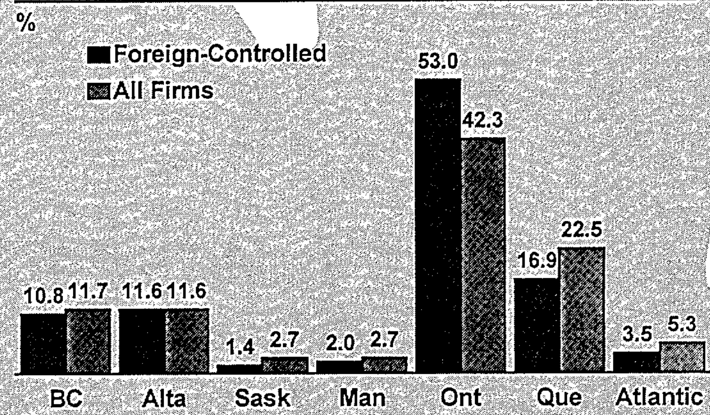
Foreign subsidiaries are heavily concentrated in Ontario — where more than half of all revenues of foreign subsidiaries in Canada originate.

Foreign-controlled firms are much more trade-oriented than domestic firms.

- Exports as a share of total sales of foreign-controlled firms is about twice that of domestic firms. For imports, this ratio is nearly three times greater.

Foreign subsidiaries are also recognized as an important channel for the adoption of world-class technologies.

Provincial Share of Corporate Revenue 1991



Source: Industry Canada calculations based on Statistics Canada data

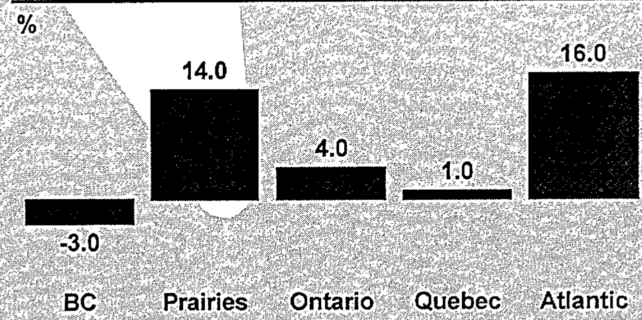
However, the Prairies are adopting new technologies faster...

The Prairie and Atlantic provinces have seen the largest increase in their use of advanced technologies.

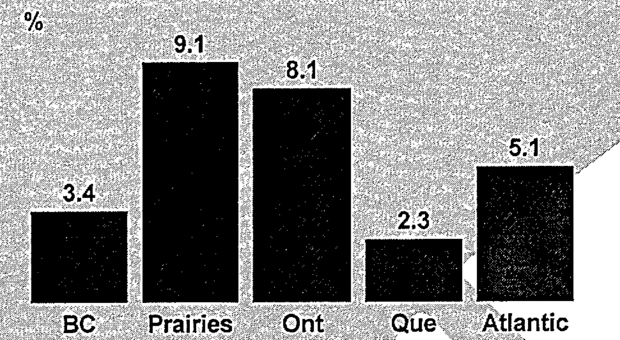
Furthermore, from 1992 to 1997, the Prairies posted the strongest growth in M&E investment, particularly in high-knowledge industries.

- However, Quebec and BC lagged in technology adoption.

Change in the Use of at Least One Advanced Technology, 1989 to 1993*



Growth in M&E Investment, Average Annual Growth, 1992-1997



* Given the small size of the sample in BC, the possibility that there was no change between 1989 and 1993 cannot be ruled out.
Source: J. Baldwin and D. Sabourin, *Technology Adoption in Canadian Manufacturing*, Statistics Canada, 1995; Statistics Canada.

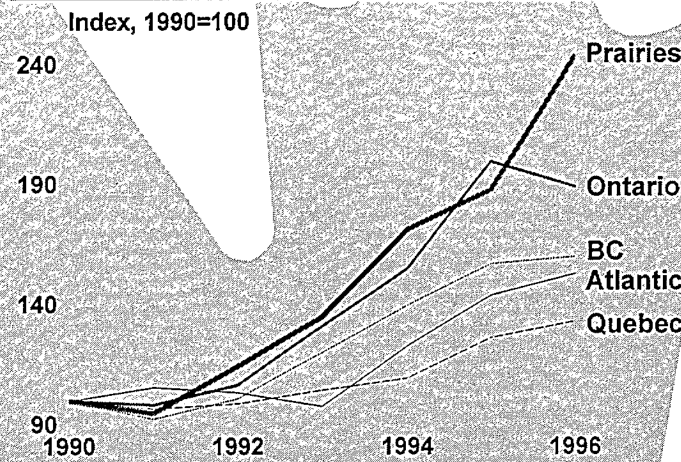
...especially foreign technologies

Since the beginning of the 1990's, the Prairies have led all regions in the growth of M&E imports, followed by Ontario.

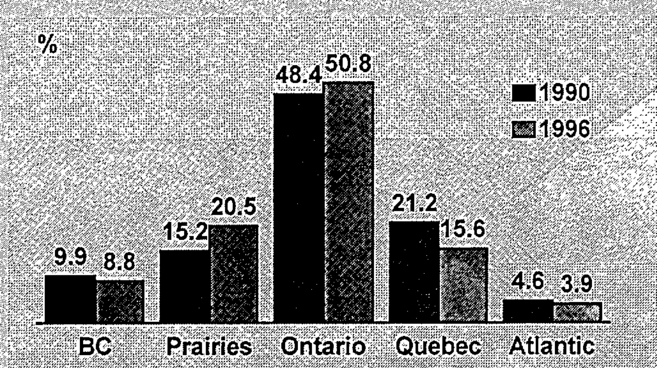
The pace of foreign M&E investment was slowest in Quebec.

- As a result, Quebec's share of international M&E has been declining steadily.

International M&E Imports



Share of International M&E Imports

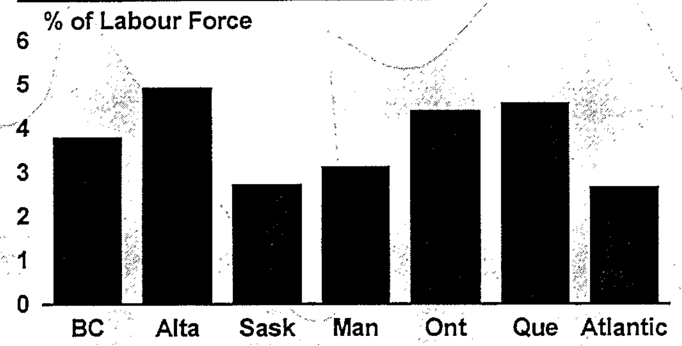


Source: Statistics Canada

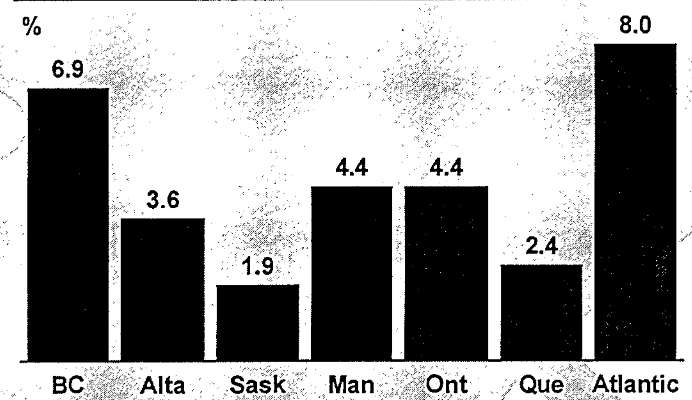
All regions show growth in "high-knowledge" education...

Although the Prairies, Ontario and Quebec still have a higher relative share of engineers and scientists, enrollment in other provinces is picking-up sharply.

Scientists and Engineers*, 1997



Annual Growth in Sciences & Engineering* Post-Secondary Enrollment, 1990/91-1996/97



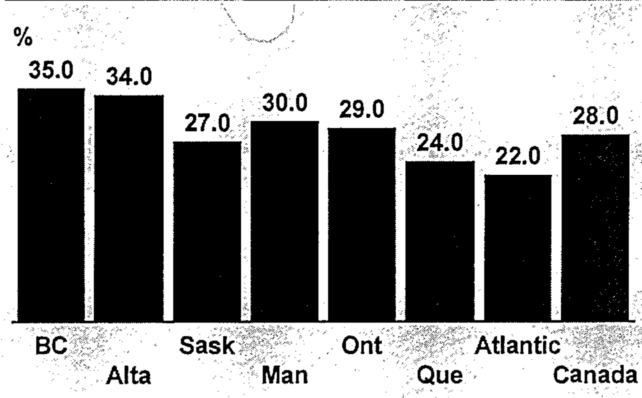
* Sciences & Engineering includes Agricultural and Biological Sciences, Engineering and Applied Science, and Mathematics and Physical Sciences at the undergraduate level and of Engineering & Applied Sciences and Natural Sciences & Primary Industries at the community college level.
Source: Industry Canada calculations based on Statistics Canada data

...with Western Canada leading in life-long learning...

Adult training, which refers to education and training activities beyond regular formal education, is highest in BC and Alberta.

- It is well below the national average in Atlantic Canada and Quebec.

Participation Rates* in Adult Training 1993



* Share of adult population (17 and over) pursuing some education and training activities

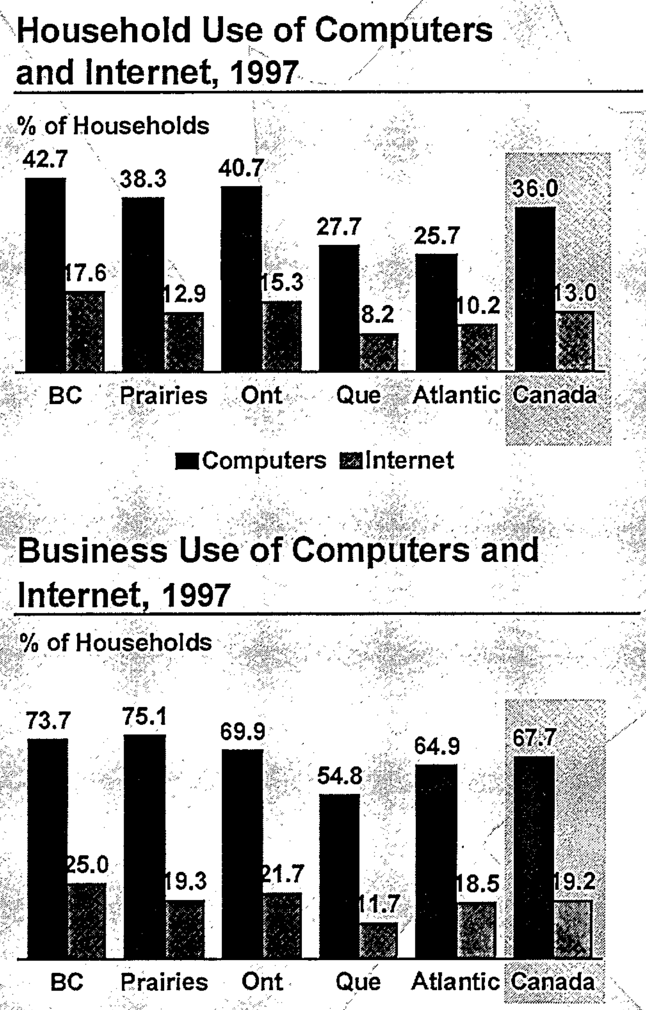
Source: Statistics Canada, Education and Training Survey, 1997

...and connectedness

In provinces west of Quebec, a higher share of households use computers and surf the Internet.

- This partly reflects their traditionally higher income per capita.

Business use of computers and the Internet is also higher in Ontario and the western provinces.



Source: Statistics Canada

Common key challenges include attracting investment...

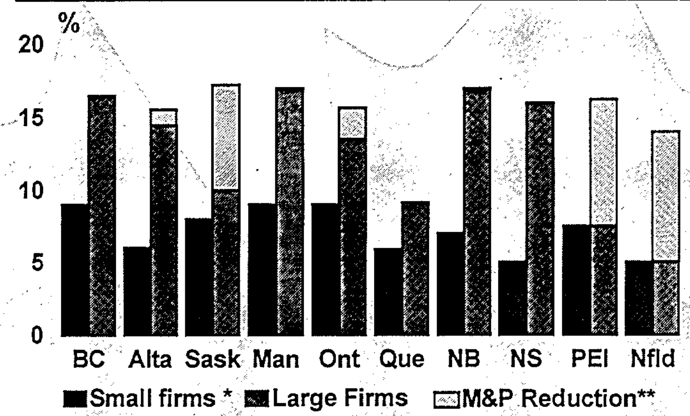
The level of corporate income tax (CIT) is an important determinant of a firm's decision to invest.

CIT rates vary considerably across provinces.

- Half the provinces offer lower CIT rates for small firms and for manufacturing and processing firms.
- Large non-manufacturing firms face the lowest CIT rate in Quebec and the highest rate in Saskatchewan.

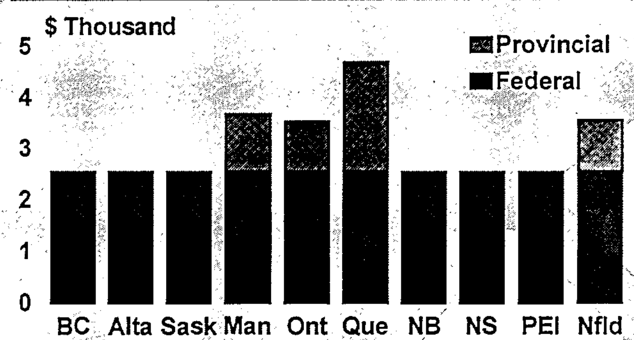
Note, however, that in some provinces low corporate tax rates are accompanied by provincial payroll taxes.

Provincial Corporate Income Tax Rate



*Applies to the first $200,000 of active business income of Canadian-controlled private corporations. Some provinces provide tax holidays for new small enterprises.
**Rate reduction applicable to profits from manufacturing and processing activities
Source: KPMG

Payroll Taxes by Province*



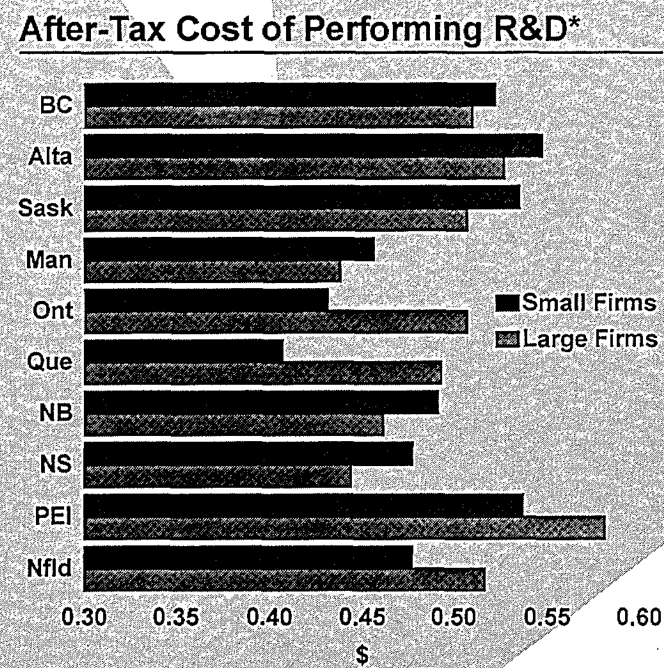
* Figures include employer portion of federal EI premiums, CPP/QPP premiums and provincial payroll taxes based on wages of $50,000. Excludes Worker's Compensation Premiums (WCB)
Source: KPMG

...closing the innovation gap...

OECD analyses suggest that Canada has an innovation gap when compared to the U.S., despite Canada's more generous R&D tax treatment.

The after-tax costs of $1 of R&D, while generally low, do vary significantly across provinces.

- **For small firms, they vary from $0.41 in Quebec to $0.55 in Alberta.**
- **For large firms, they range from a low of $0.44 in Manitoba to a high of $0.58 in PEI.**



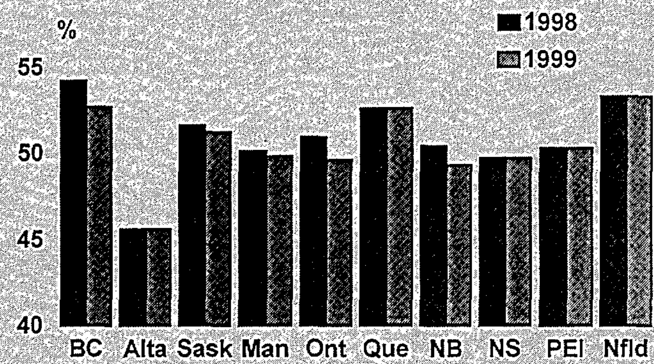
* After Tax Cost of performing $1.00 of R&D
Source: Conference Board of Canada, 1997 and 1998

...and retaining skilled workers

Differences in provincial personal income tax rates can influence the decision of mobile, knowledge workers to locate in a particular province.

The highest personal income tax rates are in Newfoundland, Quebec and BC, while Alberta has the lowest rate.

Top Combined Personal Tax Rates on Salary*



*Generally applies to incomes above $64,000
Source: Deloitte & Touche, Tax Breaks, June, 1998

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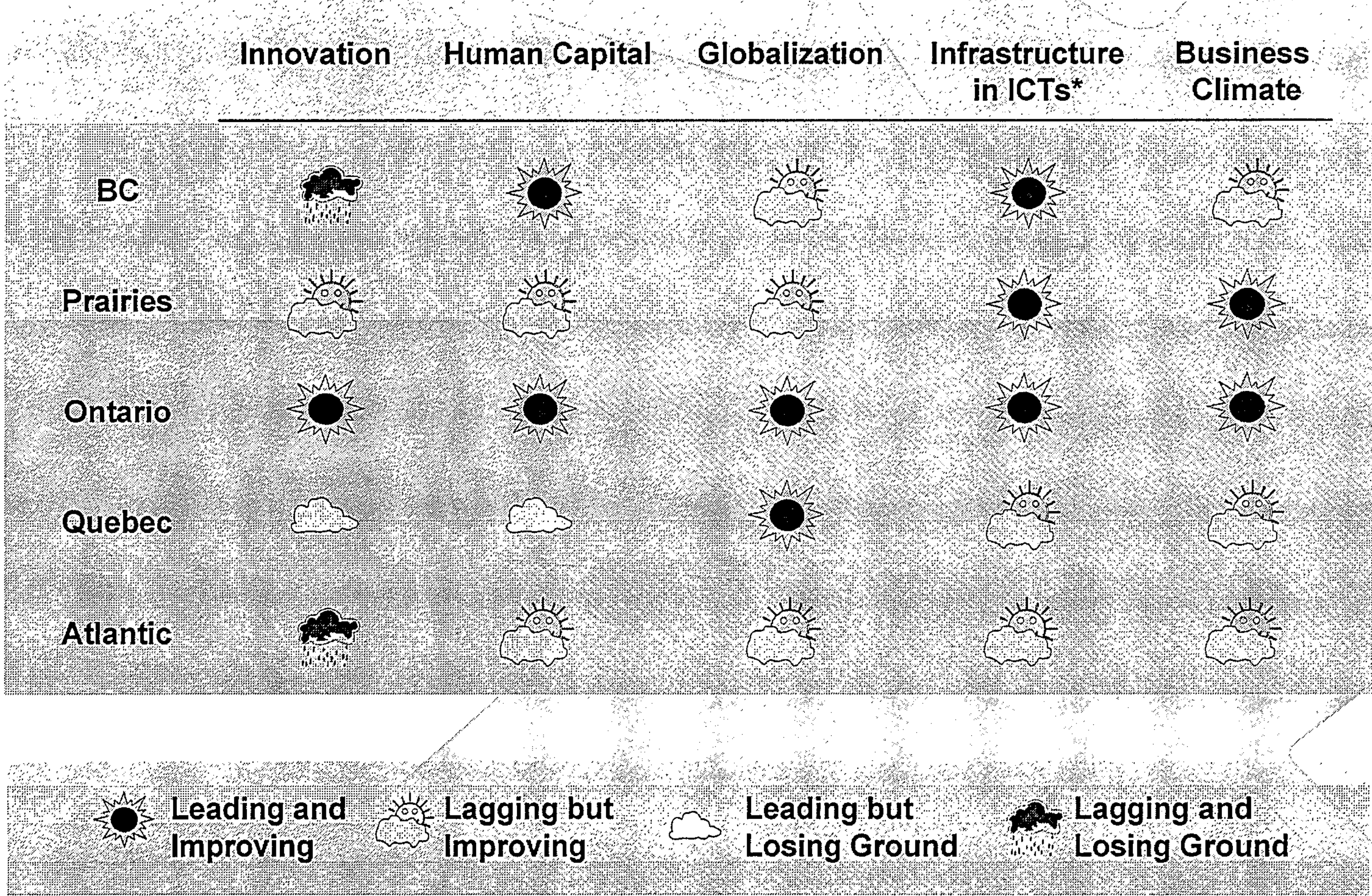
Regional "Readiness" for the KBE

"Readiness" for the KBE — Concluding Remarks

While there is a strong commitment to the new economy and each region is showing significant progress, differences still persist in terms of the regions' respective "readiness" for the KBE.

- Ontario is well positioned to seize opportunities — it leads or is among the leaders with respect to most KBE factors.
- The Prairie provinces have recently shown significant progress — particularly in terms of the adoption of new technologies as well as their development of information and communication technological infrastructure.
- Quebec compares favourably to its sister provinces in terms of technological infrastructure, but recent growth in investment has been slow, both in terms of human capital and technology.
- Another cause for concern is BC's weak innovation performance — in part attributable to its reliance on less innovative industries.
- Although Atlantic Canada is showing clear signs of improvement in most KBE areas, it must become more innovative to fully reap the benefits of the new economy.

"Readiness" for the KBE — in a Nutshell



* Information and communication technologies

O

Annex

Selected Provincial KBE Indicators

% unless otherwise mentioned	BC	Alta	Sask	Man	Ont	Que	NB	NS	PEI	Nfld
High Knowledge Output (1992 millions $)	8,334	10,834	2,027	2,799	39,478	21,018	1,169	1,153	140	784
Average Annual Growth Rate (1984-1997)	4.7	5.7	4.6	4.5	4.4	3.6	2.6	1.7	5.3	1.6
High Knowledge Share of Business Output, 1997	12.0	14.8	10.6	14.9	17.5	18.5	12.1	9.8	8.1	13.3
M&E Investment as a percentage of GDP, 1997	5.6	7.9	7.4	5.9	7.2	5.5	4.7	7.6	3.9	4.4
R&D Spending as a percentage of GDP, 1995	0.5	0.5	0.2	0.3	1.3	1.3	0.3	0.2	0.0	0.1
Trade Openness, 1997										
-- Exports plus Imports as percentage of GDP	61.6	64.1	71.1	62.5	97.2	71.3	75.0	54.3	34.4	53.5
High-Knowledge Workers as a Share of Total Labour Force, 1997	49.7	48.7	42.1	43.6	49.7	53.8	45.6	53.9	45.5	51.2
Hourly Wage Rate ($), 1997										
High-Knowledge Workers	19.46	17.47	16.28	16.20	19.21	17.69	15.36	14.71	14.16	15.40
Low-Knowledge Workers	12.89	10.69	10.35	10.85	12.17	11.87	9.93	10.15	8.95	9.86
Connectedness:										
Household Use of Computers, 1997	42.7	43.0	32.9	31.9	40.7	27.7	25.3	26.9	21.6	25.1
Household Use of Internet, 1997	17.6	14.9	8.9	11.7	15.3	8.2	10.9	10.2	7.8	10.1

Business Sector Industry Classification

There are high-knowledge and low-knowledge firms in all industries. However, data constraints at the regional level require that we conduct our analysis at the industry level rather than at the firm level. The industrial classification* used here focuses on the average characteristics of all firms in a particular industry and highlights the concentration of knowledge-based activity within that industry.

In this analysis, we concentrate on the performance of business sector industries which are classified as high-knowledge industries. The analysis of these industries, which exhibit the characteristics of the KBE, give a general indication of the performance of the new economy at the regional level.

High-Knowledge

- Scientific & Professional Equipment
- Communication & Other Electronics
- Business Machines
- Aircraft & Parts
- Computer & Related services
- Engineering & Scientific Services
- Pharmaceutical, Medicine & Other Chemical Products
- Electrical Power
- Machinery
- Refined Petroleum & Coal Products
- Management Consulting services
- Pipeline Transportation
- Other Business Services

Medium-Knowledge

- Other Electrical & Electronics
- Other Transportation Equipment
- Primary Metals (Non-Ferrous)
- Textiles
- Communication
- Paper & Allied Products
- Mining
- Rubber
- Plastics
- Primary Metals (Ferrous)
- Non-metallic Mineral Products
- Wholesale Trade
- Crude Petroleum & Natural Gas
- Fabricated Metal Products
- Motor Vehicles & Parts
- Food
- Beverages
- Tobacco
- Finance, Insurance & Real Estate
- Other Utilities
- Services Incidental to Mining
- Other Services
- Printing & Publishing
- Construction
- Amusement & Recreational Services

Low-Knowledge

- Other Manufacturing Products
- Fishing & Trapping
- Wood
- Furniture & Fixtures
- Logging & Forestry
- Transportation
- Storage & Warehousing
- Agriculture
- Retail Trade
- Personal Services
- Quarry, Sand Pits & Mining Services
- Accommodation, Food & Beverage Services
- Clothing
- Leather

* Lee, Frank C. & Handan Has, "A Quantitative Assessment of High-Knowledge Industries Versus Low-Knowledge Industries", *The Implications of Knowledge-Based Growth for Micro-Economic Policies*, Industry Canada, 1996.

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The *Micro-Economic Monitor* is prepared on a quarterly basis by the Micro-Economic Analysis Directorate of Industry Canada. The Monitor provides a quick and easy-to-read update on Canada's economic performance. It also provides topical in-depth reports on current economic issues from a micro-economic perspective.

The current analysis update was prepared by Dave Dupuis, Joseph Macaluso, and Karen Smith, under the direction of Shane Williamson.

Gary Sawchuk is the General Editor of the Special Features in the *Micro-Economic Monitor*. This quarter's feature was prepared by Raynald Létourneau and Martine Lajoie, in consultation with Serge Nadeau. Presentation assistance on both sections of the MEM was provided by Caroline Farmer.

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