Factors Affecting Regional Economic Performance in Canada

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- *Over the past year, economic activity in Canada has slowed, with some regions experiencing more pronounced effects than others. The downturn in the U.S. economy, high energy prices, and low lumber prices affected Canada's regions to varying degrees. In Ontario and Quebec, there was a sharp slump in the automotive, electrical, and electronic manufacturing industries. In contrast, a surge in energy prices contributed to economic strength in Alberta, Atlantic Canada, and, to a lesser extent, in British Columbia, where problems in the forestry sector adversely affected activity.*
- *Manufacturing and lumber exports weakened, while energy-related exports and investments remained strong. The consumer sector, bolstered by easing monetary policy, tax cuts, and high levels of employment, contributed to growth in every region between mid-2000 and mid-2001.*
- *Surveys conducted by the Bank's regional offices indicate that inflationary pressures have eased since March 2001, although there is some variation across regions.*

Note: The cut-off date for data used in this article was 28 September 2001.

During the second half of last year and the first half of this year, Canada's economy was hit by three major shocks that affected the country's regions very differently.[1] On balance, these shocks have contributed to considerable slowing in economic growth. This slowing will be exacerbated in the near term by the September terrorist attacks in the United States.[2] In this article, the three shocks are analyzed from a regional perspective, highlighting Canada's regional economic diversity.

The first shock was the slowdown in U.S. economic growth late in 2000, which significantly affected production levels and exports of automotive and electrical and electronic manufacturing products in Canada. This was followed by unexpectedly high energy prices, exacerbated by energy shortages in the United States, which gave rise to increased exports of natural gas and electricity, together with a surge in investment projects in this sector. The third shock was the uncertainty created by the expiry of the Softwood Lumber Agreement. A preliminary 19.3 per cent countervailing duty was subsequently imposed on Canadian lumber by the U.S. Department of Commerce. Volatile market conditions prevailed in the forestry sector, where export and production levels declined.

In addition to these three shocks, regional economies felt the effects of a prolonged drought that affected agricultural crops across the country. This was

1. The regional breakdown used for this article corresponds to the areas covered by the Bank's five regional offices: Atlantic Canada, Quebec, Ontario, the Prairies (includes the Northwest Territories and Nunavut), and British Columbia (includes the Yukon). For more information on the activities of the regional offices and the quarterly survey of business conditions, see Amirault and Lafleur (2000).

2. For a more detailed analysis of recent developments in the Canadian and U.S. economies, see the *Monetary Policy Report* to be released on 7 November.

particularly important to the economy of the Prairie provinces, where most of the impact on wheat and canola crops will be felt in 2002, when supplies will likely be low.

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Because of the striking variation in industrial activity from region to region, shocks that affect Canada's national economy may be experienced more or less intensely in each region. Regional business cycles can therefore diverge significantly from national cycles both in duration and severity. For example, because of the importance of the energy sector in Alberta, and its growing prominence in Atlantic Canada, the Prairie and Atlantic regions are highly sensitive to fluctuations in the market for energy products. Information on economic developments across regions can provide additional insights to those derived from national data. A sound understanding of regional business cycles is thus a valuable input in formulating monetary policy.

Regional business cycles are typically studied in the absence of regional GDP data, which are available only with a long lag. The indicators analyzed include total employment, retail sales, housing starts, and the consumer confidence index. The Bank's regional offices also conduct quarterly surveys of business conditions, which provide additional information that is helpful in gaining a better understanding of recent economic developments in Canada. In this article, the three shocks that affected the Canadian economy over the past year are analyzed from a regional perspective, starting with a discussion of the sectoral mix of each region.

The Sectoral Breakdown of Canada's Regions: Some Stylized Facts

The relative size of the various economic sectors is important in determining the intensity of a region's response to an economic shock. For example, a region would be more exposed to external shocks that affect the automotive sector if its production is highly concentrated in that sector.

In Ontario and Quebec, the manufacturing sector accounts for over 20 per cent of provincial output (Table 1). Within this sector, the automotive industry is of key importance in Ontario, representing about 6 per cent of provincial output and 46 per cent of total exports (Table 2). The electrical and electronic equipment industries also figure prominently in Ontario. In Quebec, machinery and equipment account for 35 per cent of provincial exports, reflecting the importance of the aeronautics industry in that province.[3] The energy sector is especially important in the Prairie provinces, representing 43 per cent of the region's exports, with production activity concentrated in Alberta. In Atlantic Canada, the energy sector has accounted for 21 per cent of total exports over the last five years, but this share has been expanding.[4] At 54 per cent of provincial exports, forestry predominates in British Columbia.

Thus, the economies of Ontario and Quebec exhibit the strongest reactions to negative external shocks to the manufacturing sector, while the Prairies and

Table 1

Regional Sectoral Mix

Average share of output from 1995 to 1999, per cent

	British Columbia	Prairies	Ontario	Quebec	Atlantic Canada	Canada
Primary	6.6	18.5	2.1	2.9	5.9	6.3
Mining, quarrying, and oil-well-drilling industries	2.7	14.2	0.8	0.8	2.8	3.8
Logging and forestry	2.6	0.3	0.2	0.6	1.0	0.6
Manufacturing	9.6	9.5	23.4	20.2	10.5	17.5
Transportation equipment	na	0.6	5.7	2.3	na	3.1
Electrical and electronic products	na	0.6	2.2	1.6	na	1.5
Goods-producing industries	25.8	38.7	33.0	33.0	26.2	32.8
Services-producing industries	74.2	61.3	67.0	67.0	73.8	67.2

Source: Statistics Canada; output measured by real GDP at factor cost (1992=100)

3. Aircraft are Quebec's top export.

4. Atlantic Canada increased energy exports from 17 per cent of the region's exports in 1995 to 29 per cent in 2000.

Table 2

Share of Total Goods Exported
Average from 1995 to 1999, per cent[a]

	British Columbia	Prairies	Ontario	Quebec	Atlantic Canada	Canada
Agricultural and fishing products	6.3	21.3	3.6	4.4	22.5	7.9
Automotive products	2.3	1.5	45.5[b]	7.1	0.4	24.7
Industrial goods and materials[c]	13.0	16.0	17.0	25.5	12.3	17.8
Machinery and equipment[d]	9.6	9.9	23.5	35.2	11.0	21.3
Forestry	53.7	6.5	4.6	18.3	30.1	13.2
Energy	11.7	42.8	0.8	1.9	21.2	10.4
Other	3.4	2.0	5.0	7.6	2.5	4.7
Foreign exports as percentage of regional output[b]	28.6	31.9	46.0	31.8	27.0	37.1

a. Note: Although more recent export data are available, this time period was chosen to be consistent with Table 1. With the exception of "Foreign exports" in the lower panel, provincial exports include international and interprovincial trade.

b. The automotive sector accounts for more than half of Ontario's exports to the United States. About 90 per cent of Canadian automotive production is exported, and about 80 per cent of Canadian automotive purchases are imported.

c. Includes mining

d. Includes electric and electronic products

Source: Statistics Canada

Atlantic provinces are most sensitive to changes in energy demand. Ontario's economy is the most vulnerable to changes in external demand, since foreign exports make the major contribution to this province's GDP.[5] Moreover, given the solid interprovincial trade links in Canada, an economic shock to one province would be transmitted to other provinces (McCallum 1995).

Shocks to Canada's Economy during the Second Half of 2000 and the First Half of 2001

The slowdown in the U.S. economy in the second half of 2000 and the first half of 2001 affected all regions of Canada adversely but with varying degrees of intensity. The automotive industry and the electrical and electronic manufacturing industries were the sectors most affected, with both experiencing a sudden decline in demand. As the demand for automobiles in the United States fell off, Canadian exports declined. The unintended accumulation of North American automobile inventories that resulted led to a marked cutback in Canada's production of motor vehicles and parts. Automobile production in the first quarter of 2001 declined by about 30 per cent, and exports of motor vehicles and parts fell by about 27 per cent. Given the importance of its automotive sector, Ontario experienced these developments most intensely. A similar pattern occurred in the electrical and electronic components sector, where the decline in U.S. demand for computers and telecommunications equipment in the second half of 2000 led to a sharp reduction in Canadian production of these products early this year. This reduction had the largest impact on Quebec and Ontario. Exports of telecommunications equipment from both provinces had grown rapidly throughout 2000, but in the first quarter of 2001, they declined by 36 and 24 per cent in Quebec and Ontario, respectively. Exports in this sector continued to decline in the second quarter of 2001.

The slowdown in the U.S. economy has been felt more broadly in the economies of Ontario and Quebec. In Ontario, employment growth has been sluggish for most of 2001, with declines in recent months (Chart 3). Although consumer confidence has declined in Ontario (Chart 1), the housing market has remained strong, and retail sales are positive. Investment levels were fairly flat in 2000, but some improvement in investment intentions is expected for 2001 (Charts 5 and 6) (Statistics Canada 2001). In Quebec, the prominence of the aeronautics and pharmaceutical industries has been a stabilizing factor. Employment has grown in 2001, following a decline in the pace of expansion in 2000. Buoyed by strong consumer confidence, housing markets and retail sales have been firm in 2001.

The second major shock was the unexpected rise in energy prices. The price of crude oil, as measured by the West Texas Intermediate benchmark, rose to US$34.52 per barrel in November 2000, almost 38 per cent higher than a year earlier. The price remained relatively high in the first half of 2001, but then subsided, and was about US$27 per barrel in early September.[6] Natural gas prices also soared in North America, as demand rapidly outstripped supply, reflecting the

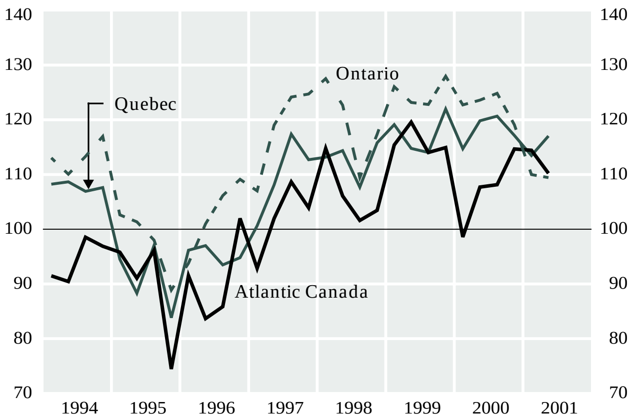
5. The Free Trade Agreement has resulted in a dramatic increase in Canadian exports and imports as a per cent of GDP since 1990, reflecting the expansion of same-industry trade in manufactured products.

6. OPEC, which produces about 40 per cent of the world's oil, has announced a target range of US$22 to $28 per barrel for its benchmark oil price.

Chart 1

Index of Consumer Attitudes

1991 = 100

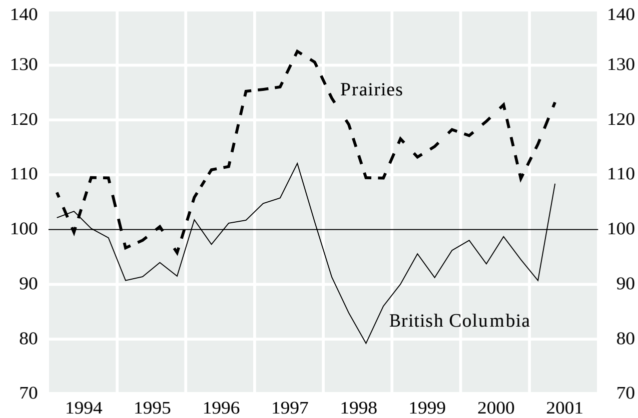


Source: Conference Board of Canada

Chart 2

Index of Consumer Attitudes

1991 = 100

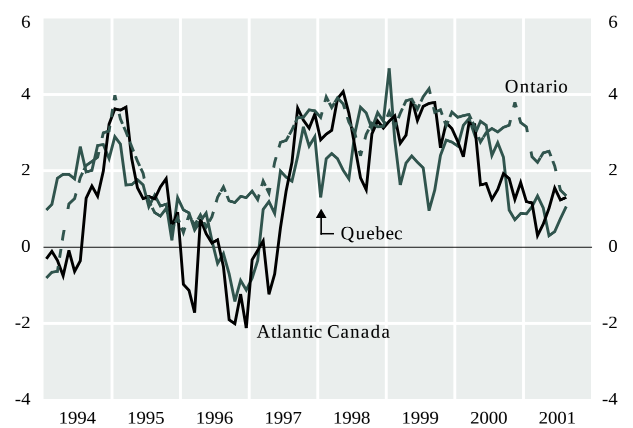


Source: Conference Board of Canada

Chart 3

Employment Growth

Year-over-year percentage change

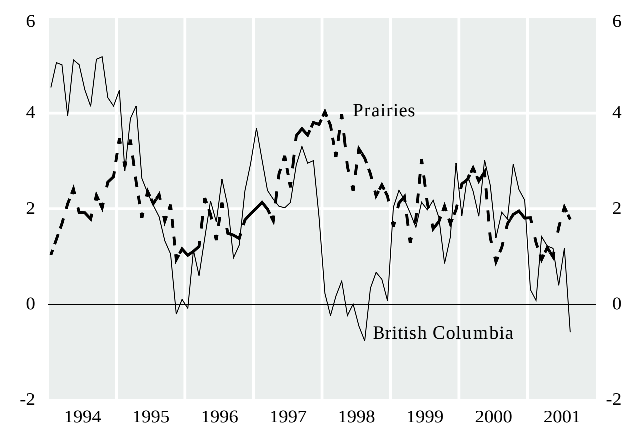


Source: Statistics Canada

Chart 4

Employment Growth

Year-over-year percentage change

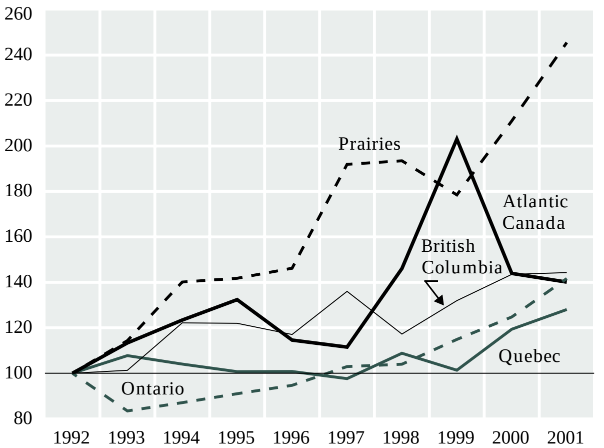


Source: Statistics Canada

Chart 5

Capital Spending: Non-Residential Construction

$ millions

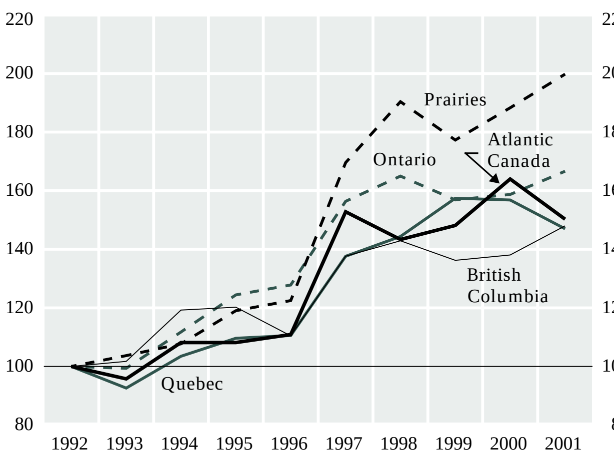


Source: Statistics Canada
2000 = Preliminary
2001 = Forecast

Chart 6

Business Capital Spending, Machinery and Equipment

$ millions



Source: Statistics Canada
2000 = Preliminary
2001 = Forecast

sharp expansion in demand for electrical power generation from natural gas sources. The price of Canadian natural gas, which hovered between US$1.50 and US$2.00 per thousand cubic feet (mcf) during the 1990s, more than doubled in the fourth quarter of 2000 and surged to over US$9 per mcf at the beginning of 2001. Since then, the price has retreated considerably, reaching US$3.05 per mcf in August, some 15 per cent below last August's level. Energy-producing regions (particularly Alberta, but also other western provinces and Atlantic Canada) experienced close to a doubling of revenues from energy exports, which stimulated other components of demand such as investment and consumer spending. Capital spending intentions for 2001 in the oil- and gas-extraction industries are up over 25 per cent from 2000. (See Charts 5 and 6 and the box on page 26.) Newfoundland and Alberta recorded the strongest increases in provincial employment in 2001, led by construction and energy-related employment. This has fostered strong consumer activity in Atlantic Canada and Alberta. Furthermore, the provincial governments of Alberta and British Columbia have used the increased revenues from royalties to mitigate the burdens of higher energy costs to their citizens by offering special energy rebates.

The higher energy prices resulted in higher costs for firms, particularly for energy-intensive industries such as agriculture, manufacturing, construction, transportation, and wholesale trade. In Ontario and Quebec, this increase in cost pressures exacerbated the effect of a slowing economy, while in Alberta, the adverse impact of a rising cost structure was more than offset by the strength of demand from the positive impact on energy-related investments. In the Bank of Canada's quarterly survey of industries conducted this summer, most of the firms surveyed indicated that they were concerned about the effect of high energy prices on their cost structures. The pass-through of these higher costs into consumer prices has been hindered by weaker demand conditions. Oil and natural gas prices were expected to subside over the next year, but in some regions there was more uncertainty regarding the outlook for electricity prices. In Alberta, wholesale electricity prices have been high and quite volatile since the market was deregulated. This experience has caused some concern for companies in Ontario, where electricity is scheduled for deregulation by May 2002.

The third shock was the termination of the Softwood Lumber Agreement (SLA) between Canada and the United States at the end of March this year.[7] With the

7. The most recent Softwood Lumber Agreement restricted exports from British Columbia, Alberta, Ontario, and Quebec to 14.7 billion board feet of softwood lumber per year. Quotas were assigned to each of these provinces.

Recent Energy Projects by Region

High energy prices and strong U.S. demand have boosted energy development projects across the country, attracting significant investment capital. Spending on oil and gas extraction is expected to reach about $25 billion in 2001, up 26 per cent from 2000 (Statistics Canada 2001). These projects have, to some extent, mitigated the adverse effects of the U.S. economic slowdown.

In **Alberta**, investment in energy has been growing rapidly. Capital expenditure more than doubled in 2000 to $5 billion and appears to have remained at this high level in 2001. Much of this expansion has been in oil sands projects. The province has approved development projects totalling some $10 billion in capital investment to take place over the next three years. Significant expansions are planned for oil sands projects by Suncor, Syncrude, and Shell. Most of the production from these new projects or expansions is scheduled to come on-line by 2002. An additional proposed $40 billion investment in new or expanded oil sands projects could be realized over the next decade, depending on the investment climate, industry conditions, and demand pressures.

In the **Atlantic region**, several major energy projects have been completed, and development is continuing at a more modest pace. During the 1999–2000 period, three projects totalling over $6 billion contributed significantly to economic growth in the Atlantic region: the Sable Gas and Maritime Northeast Pipeline (Nova Scotia), the Terra Nova oil field (Newfoundland), and the Irving Oil refinery upgrade (New Brunswick). Both the Sable and the Irving projects are now in full production, while production at Terra Nova is scheduled to begin in late 2001. Husky Oil has submitted a development application for the $1.8 billion White Rose offshore oil field, where construction could begin in 2002 and oil production possibly as early as 2004. PanCanadian has also announced plans to spend about $1 billion to develop the Deep Panuke field, estimated to contain over one trillion cubic feet of natural gas.

Energy investments in **British Columbia** have been vigorous, involving primarily the development of natural gas pipelines in the northern part of the province. Projects include:

- A $410 million Southern Crossing natural gas transmission pipeline, connecting the BC Gas system to that of Alberta.
- A proposed $495 million BC Gas Inland Pacific Connector pipeline, connecting BC Gas' Southern Crossing pipeline near Oliver B.C. to the Huntingdon market hub in the Fraser Valley area. Completion is anticipated for the autumn of 2003.
- A $260 million joint proposal by BC Hydro with Williams Gas Pipeline Company for a gas pipeline linking the Huntingdon / Sumas supply hub in Washington State with Vancouver Island, which is expected to be in service by the autumn of 2003. This project will allow BC Hydro to meet the fuel requirements of its new natural-gas-fired power plants on Vancouver Island. One of these plants, the Island Cogeneration Project at Elk Falls near Campbell River, is almost complete, and a second plant, the Port Alberni Generation Project, is proposed at a cost of $250 million.
- Expansion of the Westcoast Southern Mainland pipeline and development of a Westcoast Alberta Facility. These are both scheduled for completion in 2003.

Energy investment in **Quebec** will be concentrated in both hydroelectric facilities and natural gas pipelines. With recent studies indicating that energy demand in the province could exceed supply by mid-decade, the provincial government plans to increase investment in power-generating capacity. Major projects include:

- A new $454 million hydroelectric project in Grand-Mère currently underway and scheduled for completion in 2004 that will generate 220 megawatts of power.
- A $600 million 440-megawatt project at Toulnustuc on the Côte-Nord is scheduled for completion in 2005.
- A recently announced $1 billion 450-megawatt hydroelectric plant on the Péribonka River. Completion is scheduled for 2009.
- A $270 million 262-kilometre pipeline by Gaz Metropolitain and Enbridge for gas transmission from Nova Scotia to Quebec. Part of a larger pipeline expansion, this pipeline is expected to have a maximum daily operating capacity of 340 million cubic feet and to be in service by the end of 2004, following the approval of regulators.

In **Ontario**, the Bruce Nuclear Power Plant will be refurbished at a cost of $340 million.

termination of the SLA, a long-standing dispute between Canadian and U.S. producers re-emerged. Against a backdrop of improving lumber prices in the first quarter of 2001, uncertainty developed in lumber markets as questions arose as to how Canadian exports would be affected. Concerns about the impact of the termination on overall supply had generated a prolonged plunge in lumber prices during the second half of 2000, with the price per thousand board feet reaching a 10-year low of US$176 at the start of this year. For some Canadian companies, this brought prices below their break-even points. The sharp fall in lumber prices led to shutdowns and layoffs in almost all lumber-producing regions in the fourth quarter of 2000 and into the first quarter of 2001.

Lumber exports from British Columbia and Quebec, the first- and second-largest lumber producers in Canada, were down by 12 and 25 per cent, respectively, in 2000, as demand fell in anticipation of price declines following the termination of the SLA. Despite some improvements in lumber prices in the spring of 2001, Canadian exporters continued to hold back shipments because of the threat of a retroactive countervailing duty imposed by the U.S. Department of Commerce. On 10 August, a 19.3 per cent countervailing duty was implemented, and this resulted in a number of sawmill shutdowns and immediate layoffs of more than 2000 workers in British Columbia. Canada has launched appeals in U.S. courts, with NAFTA tribunals, and with the World Trade Organization. At the time of writing, there was a possibility that an antidumping duty could be imposed by the United States—yet another concern for the Canadian forestry sector. If imposed, this duty could significantly raise the number of mill closures and layoffs. Investment intentions in the forestry and logging sector have been revised downwards since the beginning of the year, with levels indicating a decline in investment in the sector in 2001.[8]

The Outlook

The economic slowdown in the United States became more acute during the summer months as a result of sharp retrenchment in investment spending. At the same time, evidence began to indicate some weakening in global economic activity. At the time of writing, forecasts are being marked down. Private sector forecasters are also assessing the economic consequences of the September terrorist attacks in the United States, and their revised outlooks for Canada's regional economies are not yet available. It is, however, instructive to examine their earlier views.

At mid-year, private sector forecasters were already expecting the pace of economic expansion for 2001 to slow in all regions from the levels seen in 2000. The steepest decline in activity was expected in Ontario, reflecting the importance of its manufacturing sector. Given the continued strength of the energy sector, Alberta was expected to register the highest growth in 2001.

The summer 2001 survey carried out by the Bank's regional offices indicated that the slowing in Canada's economic activity over the past year had led to an easing in capacity pressures.

Results from the summer 2001 survey carried out by the Bank's regional offices indicated that the slowing in Canada's economic activity over the past year had led to an easing in capacity pressures (Chart 7). About two-thirds of firms surveyed reported that they were operating below capacity and would have no difficulty meeting an unexpected increase in demand. No firms reported that they were operating above capacity. Labour shortages also appeared to have eased. Fewer firms were experiencing shortages, and fewer believed that shortages had become more intense over the last year. The labour shortage in Ontario seemed to have eased following the production cuts in the automobile and technology sectors. In Alberta and British Columbia, refineries and pipelines were operating at record utilization rates, and shortages of skilled labour were reported in these areas. Wage pressures had also abated, and the majority of firms planned to pay for wage increases out of improvements in labour productivity. Wage pressures will

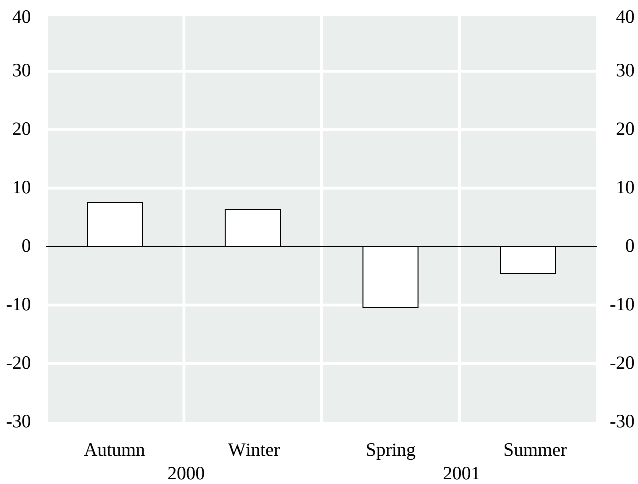
8. British Columbia's forestry sector has also been hit by the worst infestation of mountain pine beetles in the province's history. The affected area covers more than 5.7 million hectares, worth about $3.4 billion. Government and industry will spend a total of $97 million to fight the epidemic. The harvesting of infested trees may boost production at a time when markets are fragile. Moreover, the cost of harvesting infested trees is considerably higher than the cost of normal operations.

Chart 7

Balances of Opinion on Selected Economic Variables*

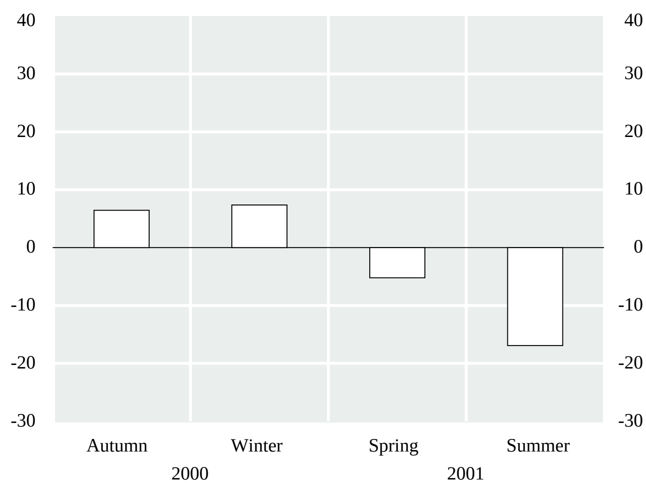
Future Input Prices

Over the next 12 months, the prices of the products / services purchased are expected to increase or decrease at a (greater / lesser / same) rate?



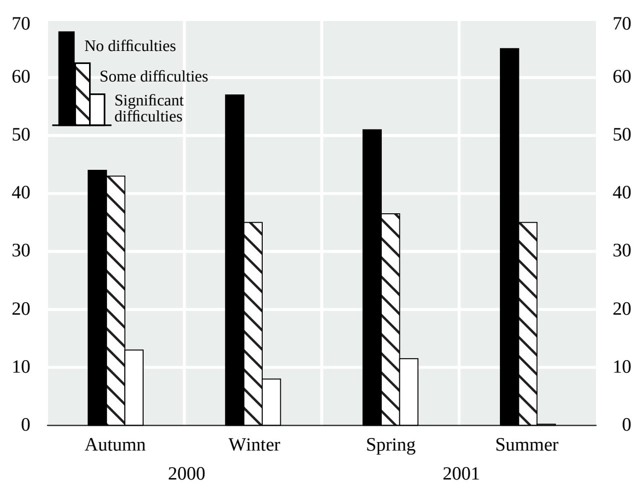
Future Output Prices

Over the next 12 months, the prices of the products / services sold are expected to increase or decrease at a (greater / lesser / same) rate?



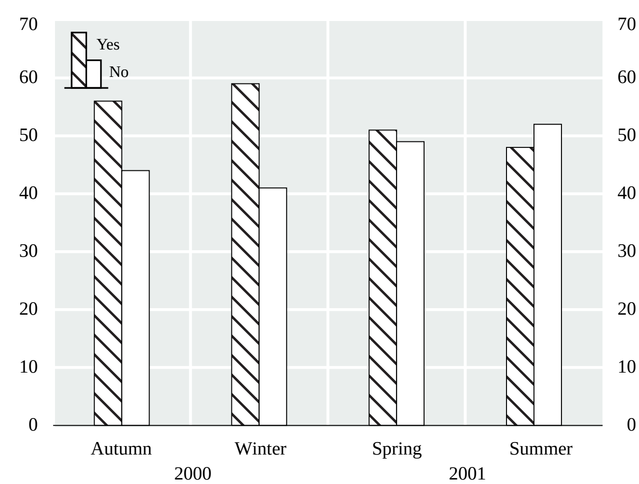
Capacity Constraints

Rate current ability of firms to meet an unexpected increase in demand / sales (no difficulties, some, significant).



Labour Shortages

Does your industry face any shortages of skilled labour that restrict your ability to meet demand (yes / no)?



* Percentage of firms expecting an increase minus the percentage expecting a decrease or a slowdown.

likely persist in areas that were experiencing labour shortages; for example, in the energy and health-care sectors. Non-wage inputs and selling prices were also expected to remain moderate. Total CPI inflation was expected to remain in the upper end of the 1 to 3 per cent target range. This represents a moderation in the outlook for inflation from earlier surveys, since fewer industry participants expected inflation to be above the target range. With slower economic conditions limiting inflation pressures, there is more room for further growth in the economy in 2002.

At the time of writing, results from the autumn survey are just starting to come in. It is already evident that further slowing in the economy is continuing to ease the pressures on capacity.

Conclusion

The sectoral mix of Canada's regions has been important in determining the response to economic shocks and in determining the future path of the economy. Over the past year, in particular, the prominence of the manufacturing, energy, and forestry sectors in Ontario, Alberta, and British Columbia, respectively, has been a key factor in determining the disparities observed in regional demand and cost structures.

Initially, we would expect some convergence in provincial growth rates, given the dynamics that were already coming into play prior to the terrorist attacks of 11 September and the weaker national growth now foreseen for the second half of 2001. Then, as the effects of easing monetary conditions, recent federal and provincial tax cuts, and a pickup in business investment in new technologies are felt throughout the economy, the rates of regional economic growth across the country are expected to continue to converge in the context of a significant pickup in economic growth through 2002.

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