THE CALGARY-EDMONTON CORRIDOR

Take Action Now To Ensure Tiger's Roar Doesn't Fade

TD Economics

Special Report

April 22, 2003

TD Bank Financial Group

THE CALGARY-EDMONTON CORRIDOR

Take Action Now To Ensure Tiger's Roar Doesn't Fade

Executive Summary

This report represents the third in a series by TD Bank Financial Group that focus on the challenges facing Canada's urban areas. In April 2002, the Bank released "A Choice Between Investing in Canada's Cities or Disinvesting in Canada's Future", which looked at the general issues confronting the country's metropolitan areas. That was followed a month later by a study that focused specifically on the Greater Toronto Area (GTA).

These studies flowed from a number of speeches delivered in 2001 and 2002 by A. Charles Baillie, former TD Bank Financial Group Chairman and CEO in which he put forward a formidable challenge for Canadians – to surpass the U.S. standard of living (or the level of real income per person) within 15 years. In his remarks, Mr. Baillie highlighted the critical importance of cities in meeting this goal, since urban areas now comprise a staggering 80 per cent of Canadian economic activity and employment.

The Calgary-Edmonton Corridor is in a unique position in Canada. *Specifically, it is the only Canadian urban centre to amass a U.S.-level of wealth while preserving a Canadian-style quality of life.* At nearly US$40,000, GDP per capita in the region is about 10 per cent above the average of U.S. metropolitan areas, and a striking 40 per cent above its Canadian colleagues. And, these gaps have widened over the past decade, as the Corridor has chalked up one of the strongest gains in both real GDP and population increases on the North American landscape. It is truly Canada's western tiger.

Contents

Businesses and individuals have flocked to the region to take advantage of the considerable market opportunities, low taxes and business costs, vast wealth of natural resources, low crime and poverty rates, a high-quality education system, and a clean environment. Add to this the long list of recreational and cultural options, and there is little wonder why the Calgary-Edmonton Corridor has been able to create the "buzz" that other urban areas can only aspire to.

Rapid growth creates challenges in the Corridor

Given all of its assets, the Corridor has enormous potential – not only to widen its economic lead in Canada further, but to become the most prosperous and the best place to live in all of North America. However, in order to tap this potential, a number of roadblocks must first be cleared out of the way, many of them erected as a by-product of the Corridor's rapid growth over the past decade.

Challenge 1: The economy of the Calgary-Edmonton Corridor is still inextricably linked to the demand for, and supply of, crude oil and natural gas, leaving the region's economy vulnerable if oilpatch activity shifts into a long-term decline. On the positive side, the long-term outlook for the oil and gas sector looks favourable, given the massive investment planned in the oil sands and solid demand prospects from the energy-hungry U.S. economy. But, there exists some clouds on the horizon, namely rising costs of production and emerging shortages of natural gas and ethylene, which threaten higher-value added activities. And, while concerns about the impact on the oil and gas sector from the implementation of the Kyoto Accord have moderated, the uncertainty related to lowering greenhouse gas emissions has not been eliminated.

Challenge 2: The Corridor is vulnerable in the all-important areas of education and innovation. On the one hand, the Corridor has reaped the benefits of one of the most highly-skilled workforces in the world, and well-established trade apprenticeship programs. However, Alberta lags behind other provinces in the share of high school students moving on to post-secondary education (PSE), highlighting the region's reliance on luring well-educated individuals from other provinces for its pool of skilled workers. The doubling in PSE tuition costs has certainly been factor at play in curtailing enrollment rates. Moreover, low levels of R&D spending and venture capital financing are other dampening influences on the region's capacity to innovate.

Challenge 3: Both the private and public sectors in the Calgary-Edmonton Corridor have been witnessing growing labour shortages in recent years. And, while some of the shortages can undoubtedly be chalked up to cyclical factors – notably unsustainably rapid economic expansion – structural issues suggest that this problem will not go away any time soon. Notably, the region's labour supply is expected to actually decline by the middle part of the next decade, as the large cohort of baby boomers moves into retirement.

Challenge 4: Rapidly increasing populations and economic activity are contributing to a growing problem of urban sprawl in the Corridor. The adverse impact of sprawl on a society is significant. Because public transit is relatively expensive in low-density suburban areas, sprawl adds to increased reliance on roads, worsening overall transit problems, and increased congestion and pollution. And, while traffic congestion in medium-sized cities such as Calgary and Edmonton remains nowhere near that experienced in larger metropolitan areas such as Toronto and Montreal, the rapid deterioration experienced in the Corridor in recent years is worrisome.

Challenge 5: The impact of the recent sizzling growth is beginning to place severe strains on the region's physical infrastructure, much of which was put in place in the 1960s, 1970s and 1980s. And, while bumps in roads and crumbling sidewalks in some areas may be most visible to residents, the need to build extends to virtually all types of infrastructure, including transit, water, waste water, buildings and bridges. Notably, rapid growth and development, combined with global warming, are placing tremendous pressure on the quality and availability of water in the Corridor, which increasingly threaten to act as a brake on future expansion.

Challenge 6: Despite shrinking poverty rates and numbers receiving social assistance in the Calgary-Edmonton Corridor in recent years, there is evidence that the rising tide in the region is not lifting all boats equally. Growth in earnings at the low-end of the income spectrum has been trailing behind those at the higher end. What's worse, wage increases for low-income individuals, and welfare incomes, have not been rising adequately to counter sharp increases in housing costs, leading to a growing problem of affordable housing.

TD Economics proposals

All three orders of government and the private sector have an important role to play in ensuring that the tiger's roar doesn't fade. As it currently stands, however, governments at the local level are severely handicapped in their ability to live up to their side of the bargain. More specifically, the Corridor's municipal governments – like many of their Canadian counterparts – have not seen growth in revenues keep pace with the demands before them, which in turn have escalated in the face of provincial and federal offloading and the over-reliance of the municipal tax base on the property tax. Hence, the need to provide municipalities with a more sustainable funding arrangement, one that will arm them with increased flexibility to tackle their own individual needs, forms an important part of the overall solution.

What the Alberta government needs to do

- Give municipalities a wider array of revenue sources, notably the flexibility to levy municipal excise taxes. We recommend that the province agree to lower its gasoline excise tax and give municipalities across the province the authority to levy their own gasoline tax of up to a stated amount, say 7 cents per litre. This new revenue source should be supplemented by power to levy taxes on other services, such as hotels and lodging, restaurant meals and car rentals.
- Continue to make education in the province an area of high priority, recognizing that the highest public returns come from high-school completion.
- Create a world-class centre for research in the Corri-

dor by setting up a formal alliance between the region's post-secondary institutions, research-based companies, the Alberta Research Council, and other research groups. This would build on the activities of the existing Alberta Technology Commercialization Network, which has resulted in improved collaboration between the many players in the province.

- Legislate a timetable to reduce the provincial general corporate income tax (CIT) rate to 8.0 per cent.
- Earmark proceeds generated by the existing provincial 5-per-cent tax on hotel stays to tourism promotion.
- Continue to work with the federal government to remove barriers to enter the job market for immigrant professionals and other skilled immigrants.
- Provide further support for the construction of affordable rental housing and enhancing income assistance to low-income renters and welfare recipients.

What the federal government needs to do:

- Increase the amount invested in the 10-year infrastructure program established in the 2003 budget from an average of $300 million per year to $1 billion per year.
- Fully exempt Canadian municipalities from paying the goods and services tax (GST), which would save Corridor municipalities roughly $40-$50 million per year.
- Stimulate rental construction across the country by changing CMHC mortgage-insurance so it is not a persistent profit taker, ensure that rates of taxation and economic depreciation are lined up and expand the definition for development soft-costs that can be deducted from income for income tax purposes.
- Continue to increase support for research and commercialization activities, homelessness, and aboriginal issues.
- Devote significant efforts towards reaching a comprehensive border agreement with the United States to help guarantee access to the U.S. market.

What municipal governments need to do:

- Put considerable energy into routinely, and thoroughly, assessing which services should remain core areas of responsibility and which should be provided through alternative services delivery.
- Continue to improve cooperation with other municipalities in the region, recognizing the handsome economic returns to effective region-wide coordination and planning.
- Address urban sprawl by taking measures to raise population densities. Public pressure to spend on roads and highways must be carefully balanced with the need to invest in public transit and by addressing inequities in the property tax system. Municipalities should follow through on plans targeting urban renewal, such as Calgary's Stampede Station.
- Make more effective use of debt to finance infrastructure

What the private-sector needs to do:

- Take greater interest in the affairs of the Calgary-Edmonton Corridor by getting more involved in civic matters, such as economic development.
- Raise levels of community giving.
- Establish a group such as the U.S. initiative CEOs for Cities in the Corridor that partners the public and private sectors with municipalities and community groups. The group would be a vehicle for discussion, debate and action on issues affecting cities in the region, and which has a voice that resonates across the province.

TD Economics

Special Report

April 22, 2003

THE CALGARY-EDMONTON CORRIDOR

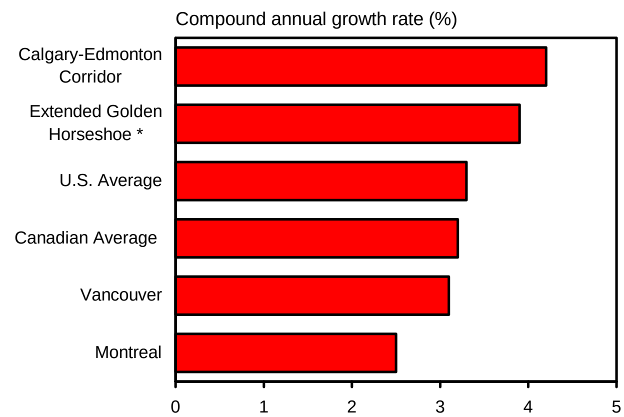
Take Action Now To Ensure Tiger's Roar Doesn't Fade

The Calgary-Edmonton Corridor is Canada's western tiger. Over the past decade, the region has registered explosive real economic growth and population increases, surpassing rates chalked up in the majority of North American urban centres. Today, the Corridor is the only urban region in Canada to rival U.S. metropolitan areas in terms of both productivity and standard of living.

Businesses and individuals have flocked to the region in recent years to take advantage of the considerable market opportunities, low taxes and business costs and vast wealth of natural resources that the Calgary-Edmonton Corridor has to offer. But, this only tells part of the story. Compared with other major North American urban areas, the Calgary-Edmonton Corridor stacks up extremely favourably in virtually any measure of quality of life, enjoying low crime and poverty rates, a high-quality education system, and a clean environment. Add to this the long list of recreational and cultural options and there is little wonder why the Calgary-Edmonton Corridor has been able to create that "buzz" that other urban areas around the continent can only aspire to.

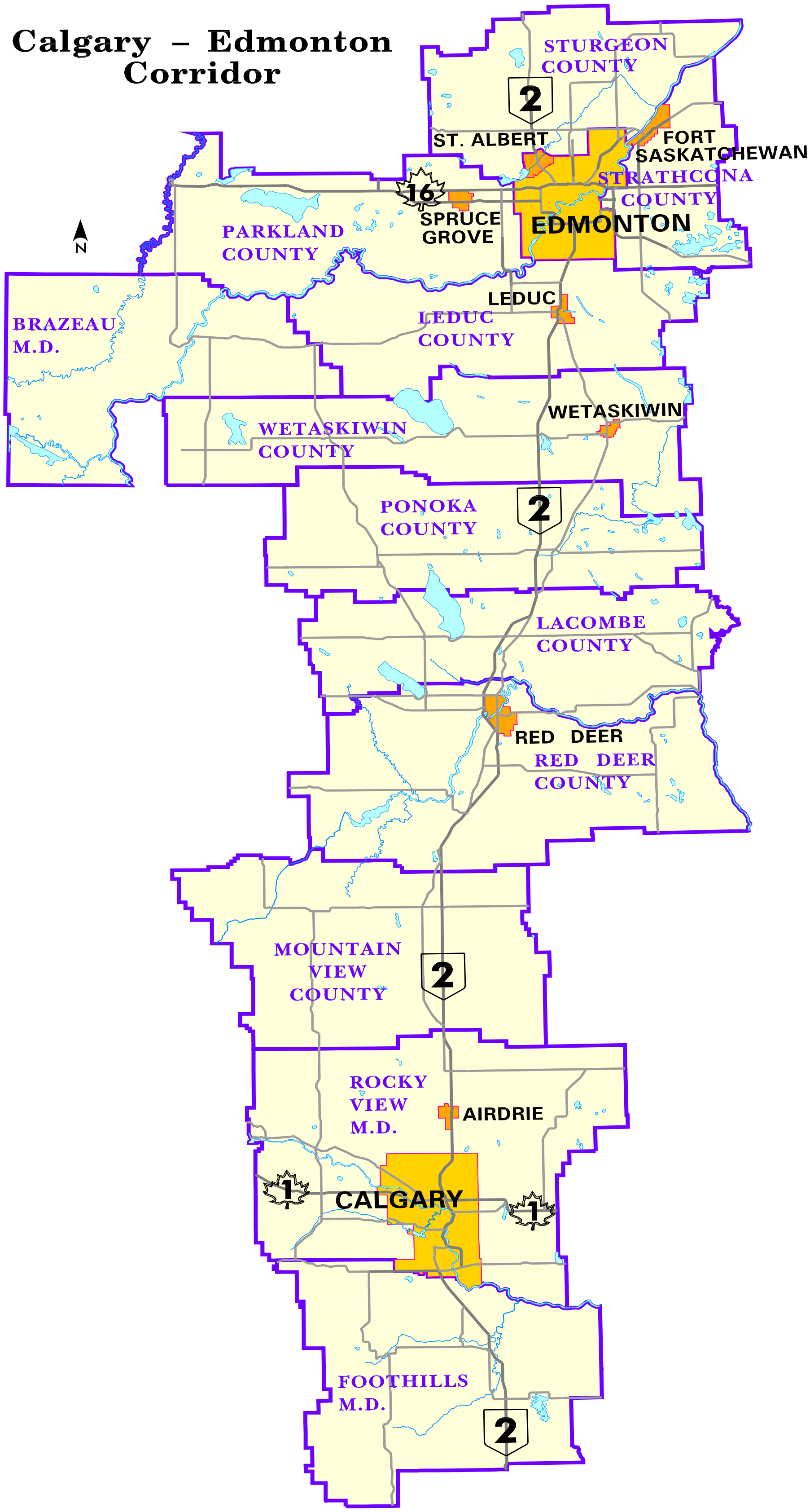
Given all of its assets, the Corridor enjoys enormous potential – not only to widen its economic lead within Canada, but to become the region that stands out as the most prosperous and best place to live in all of North America. However, in order to tap this potential, a number of obstacles must first be cleared out of the way, many of them emerging as a by-product of the Corridor's rapid growth in the 1990s. Notably, problems of traffic congestion, urban sprawl, homelessness and labour shortages have all been getting worse. But, vulnerabilities also exist in the region's still-high reliance on its important oil and gas industry, which alone accounts for much of the current productivity advantage, as well as its capacity for innovation.

REAL GROSS DOMESTIC PRODUCT GROWTH IN 1992-2001



* TD estimate derived by summing Toronto, Oshawa, Hamilton, Kitchener and St. Catharines-Niagara CMAs; Source: Statistics Canada, Conference Board of Canada, U.S. Bureau of Economic Analysis, TD Economics

Traditionally, cooperation between the cities of Calgary and Edmonton as well as the municipalities that comprise the Capital Region has been sorely lacking, not to mention the inability of the three orders of government to work together as a smooth-running machine. Encouragingly, there appears to be an increasing recognition in the Corridor that a new collaborative approach between all governments – as well as the private sector – will be a vital ingredient of achieving success in the 21st century.


Calgary – Edmonton Corridor
STURGEON COUNTY
ST. ALBERT
FORT SASKATCHEWAN
STRATHCONA COUNTY
EDMONTON
16
SPRUCE GROVE
PARKLAND COUNTY
N
BRAZEAU M.D.
LEDUC
LEDUC COUNTY
WETASKIWIN
WETASKIWIN COUNTY
PONOKA COUNTY
LACOMBE COUNTY
RED DEER
RED DEER COUNTY
MOUNTAIN VIEW COUNTY
ROCKY VIEW M.D.
AIRDRIE
CALGARY
1
2
FOOTHILLS M.D.

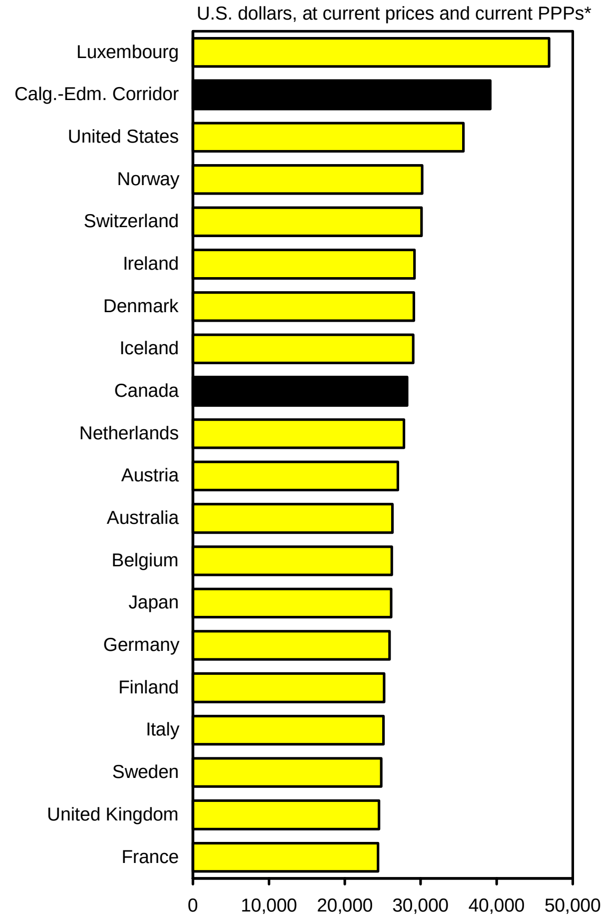
Higher standard of living

This paper represents the third in a series of reports that focus on the challenges facing Canada's urban areas. In April 2002, the Bank released "A Choice Between Investing in Canada's Cities or Disinvesting in Canada's Future", which looked at issues facing the nation's cities from a general perspective. This was followed up a month later, in May 2002, by a study that focused specifically on the Greater Toronto Area (GTA). These studies were undertaken on the heels of a number of speeches on the standard of living in 2001 and 2002 delivered by A. Charles Baillie, former TD Bank Financial Group Chairman and CEO.

In his remarks, Mr. Baillie put forward a formidable challenge for Canadians – to surpass the U.S. standard of living (or the level of real income per person) within 15 years. In effect, this would require eliminating the sizeable 15-percentage-point gap that currently exists between the two countries. Mr. Baillie highlighted the critical importance of cities in meeting this goal, since urban areas now comprise a formidable 80 per cent of Canadian economic activity and population. While recognizing that economic prosperity is only one element of quality of life, he argued that a brisk upward trend in living standards would be necessary to maintain important values such as the provision of health care, a healthy environment, and a strong social safety net.

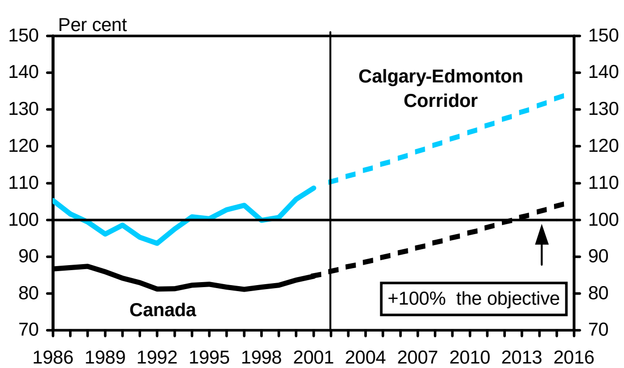
The research by TD Economics painted a mixed picture of the prospects for Canada's urban regions. While acknowledging that cities across the country are held in high regard around the world, offering a high quality of life, they are showing distinct signs of strain. Meanwhile, U.S. jurisdictions have been making great strides in improving living conditions in their communities. Simply put, if current trends continue in Canada, the goal of beating the U.S. standard of living will not be achieved.

GROSS DOMESTIC PRODUCT PER CAPITA IN 2000



* Purchasing power parity exchange rates
Source: OECD Main Economic Indicators (July 2002), TD Economics

RELATIVE GDP PER CAPITA*
GDP per capita as a share of U.S. GDP per capita



*Nominal GDP per person, converted to U.S. dollars at purchasing power parity (PPP) exchange rates. Source: Centre for the Study of Living Standards, Statistics Canada, U.S. Bureau of Economic Analysis, TD Economics

Unlike its Canadian counterparts, the Calgary-Edmonton Corridor already enjoys a GDP per capita that is above that of the United States. In fact, we estimate that at nearly US$40,000 in 2000[1] (calculated at purchasing power parity), the standard of living in the Corridor would place it behind only Luxembourg among OECD countries. But, instead of merely working to protect its current favourable position on the international landscape in the years ahead, the region should aim for the top of the charts. All Canadian jurisdictions would benefit from the pursuit of such an ambitious goal, since efforts to generate wealth in the region would flow to other areas of Canada through higher federal and provincial tax revenues. In fact, it is already the case that at the federal level alone, roughly $7 billion more is received from Alberta compared to what is spent in the province.[2]

The Calgary-Edmonton Corridor

The Calgary-Edmonton Corridor is a region that extends roughly 260 kilometres along Highway 2, from Edmonton in the north, through Red Deer, and south to Calgary. The Corridor is home to more than 2.2 million residents, and $87 billion in annual real output and about 7 per cent of Canadian real GDP. And, although the region includes some 100 municipalities, the population base and economy are heavily concentrated in two census metropolitan areas (CMAs) – Calgary and Edmonton. The Edmonton Area, also known as the Capital Region, comprises 22 municipalities alone.

Why focus on the Corridor?

In the April 22nd, 2002 report, we pointed out that trends toward globalization are greatly changing the face of how economies function. Responding to globalization forces, cities are moving to not only build strong relationships with each other at the regional or national level, but increasingly with urban regions in other countries. In effect, urban areas are transforming themselves into *city-region* states, a shift that is underway in the Calgary-Edmonton Corridor. Communities within the region are becoming more economically intertwined, as flows of trade and labour move more freely within the region, and with both other parts of Alberta and U.S. cities, particularly in the Pacific Northwest. The Corridor is now the third busiest for traffic flows in Canada, with the number of vehicles per day averaging 48,000 near the boundaries of Calgary and Edmonton and about 24,000 near Red Deer.[3]

Still small, but footprint getting larger

Although size becomes important in competing with other world city regions, the Calgary-Edmonton Corridor remains a medium-sized economic region. Within Canada, it ranks as the fourth largest urban region, after Ontario's extended Golden Horseshoe (6.7 million), Montreal and adjacent region (3.7 million) and the B.C.'s Lower Mainland and Southern Vancouver Island (2.7 million). In North America, it would place about 25th, with the largest urban area –

POPULATION OF THE CALGARY-EDMONTON CORRIDOR

	Population	Population Growth Compound Annual Rates (%)		
	2001	91-96	96-01	91-01
Calgary-Edmonton Corridor	**2,149,586**	**1.2**	**2.4**	**1.8**
Calgary CMA	**951,395**	**1.7**	**3.0**	**2.4**
Calgary	878,866	1.6	2.7	2.1
Airdrie	20,382	5.1	5.0	5.0
Rocky View No. 44	30,688	3.2	5.6	4.4
Rest of Calgary CMA	21,459	5.3	8.5	6.9
Edmonton CMA	**937,845**	**0.5**	**1.7**	**1.1**
Edmonton	666,104	0.0	1.6	0.8
Fort Saskatchewan	13,121	0.5	1.1	0.8
Leduc	15,032	0.5	0.9	0.7
Leduc County	12,528	1.3	0.4	0.9
Parkland County	27,252	2.3	1.6	1.9
Spruce Grove	15,983	2.1	2.3	2.2
St. Albert	53,081	2.2	2.5	2.3
Strathcona County	71,986	2.6	2.3	2.4
Sturgeon County	18,067	0.6	2.5	1.6
Rest of Edmonton CMA	44,691	2.5	1.9	2.2
Red Deer CA	**67,707**	**0.7**	**2.4**	**1.5**
Wetaskiwin CA	**11,154**	**0.6**	**0.4**	**0.5**
Rest of the Corridor	**181,485**	**2.6**	**2.8**	**2.7**
Foothills No. 31	16,764	5.6	3.2	4.4
Lacombe County	10,159	1.0	0.8	0.9
Mountain View County	12,134	2.5	1.5	2.0
Okotoks	11,664	4.9	6.5	5.7
Red Deer County	18,639	2.6	1.7	2.2
Wetaskiwin County No. 10	10,695	1.3	0.4	0.9
Other Areas	101,430	2.2	3.2	2.7
Rest of Albera	**825,221**	**1.1**	**1.0**	**1.0**
ALBERTA	**2,974,807**	**1.2**	**2.0**	**1.6**
CANADA	**30,007,094**	**1.1**	**0.8**	**1.0**

CMA: Census Metropolitan Area, CA: Census Agglomeration
Source: Statistics Canada, TD Economics

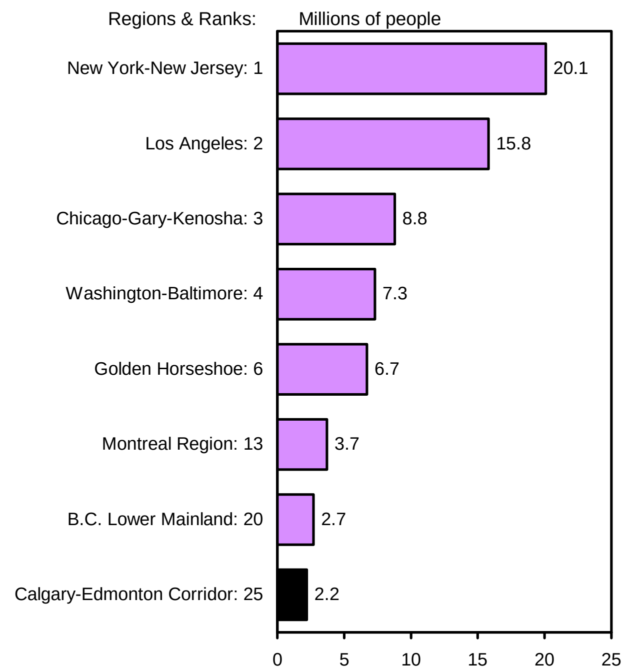
New York – almost 10 times its size.

At the same time, however, the Corridor has been steadily gaining ground within Alberta, as well as with other North American urban powerhouses.

- Over the past decade, growth in real gross domestic product (GDP) in the Calgary-Edmonton Corridor averaged 4.2 per cent per year, 1 percentage point above both the Canadian and U.S. averages.
- At almost 3 per cent per year in 1992-2001, average annual job creation was one of the fastest in North America.
- Population in the Corridor soared by 12.3 per cent in the most recent five-year Census period (1996-2001), more than double the gains posted in the rest of Alberta (5.3 per cent), other Canadian urban regions (5.5 per cent), and the average of U.S. metropolitan areas (6.0 per cent).

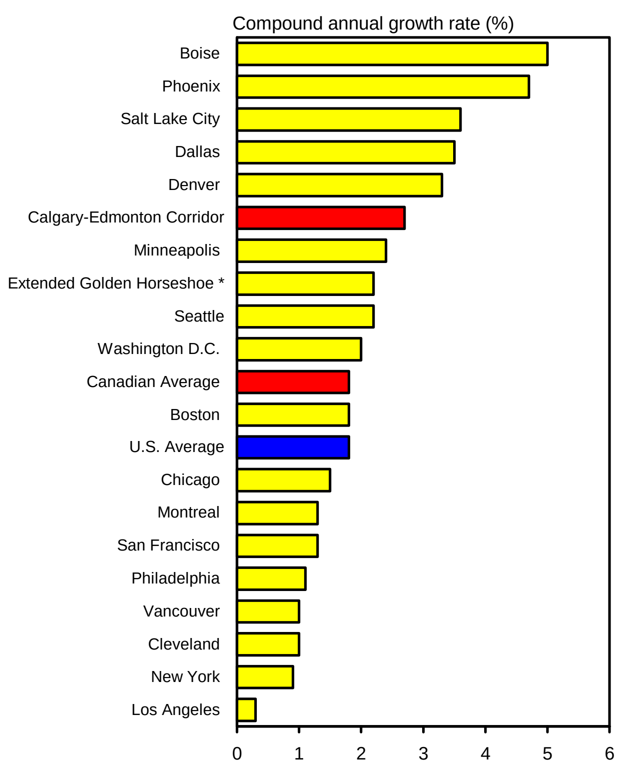
Perhaps most impressively, the Calgary-Edmonton Corridor has been able to amass a U.S.-style wealth while preserving a Canadian-style quality of life. In William H. Mercer's 2003 Quality of Life Survey, Calgary ranked 26th out of 215 international cities in terms of overall quality of life, jumping five spots from 31st position a year prior.[4] In 2002, Mercer tagged Calgary as the city with the cleanest environment. And, while other municipalities in the Calgary-Edmonton Corridor were not included in the surveys, they would have almost certainly commanded impressive rankings as well.

POPULATION RANKING OF SELECTED NORTH AMERICAN CITY REGIONS



Source: Statistics Canada, U.S. Census Bureau, TD Economics

EMPLOYMENT GROWTH IN MAJOR NORTH AMERICAN URBAN REGIONS: 1992-2001



* TD estimate derived by summing Toronto, Oshawa, Hamilton, Kitchener and St. Catharines-Niagara CMAs; Source: Statistics Canada; U.S. Bureau of Labor Statistics, TD Economics

The Corridor's winning formula

What has been the secret of success in the Calgary-Edmonton Corridor? No doubt, a good part of its prosperity can be chalked up to vast reserves of crude oil and natural gas in the province of Alberta, which has resulted in considerable jobs and income flowing back to the communities in the Corridor. Over the years, some of these income flows have been deposited into a savings account by the provincial government – the Alberta Heritage Savings and Trust Fund – which is re-invested in the province and around the world. The net asset position of the fund now stands at a hefty $11.5 billion.

Oil and gas mining production and exploration activity remains the single largest industry in Alberta, at 19 per cent of GDP, followed by finance, insurance and real estate (16 per cent), manufacturing (10 per cent), and construction (8 per cent). However, the past few decades have seen some notable shifts across the sectors in terms of relative importance to the provincial economy. The real GDP shares of oil and gas and public services (including health care and education) have both slipped by 4-5 percentage points since the mid-1980s. In contrast, several industries – such as forestry, chemicals and machinery and equipment, residential construction, transportation services, and wholesale trade – have registered above-average growth and rising shares of provincial output. Finally, professional, scientific and technical services and communications services have witnessed among the largest jumps in relative importance over the past two decades, spurred in part by the surge in industrial and consumer demand for information-technologies.

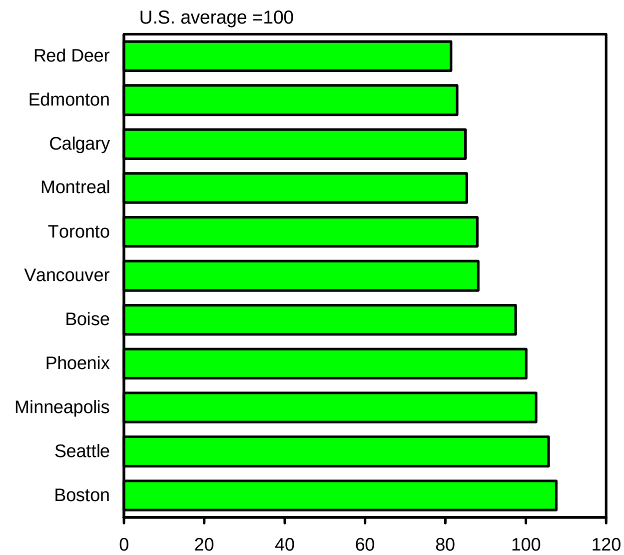
As shown in the accompanying chart on employment by industry, compared to the rest of Alberta, the Calgary-Edmonton Corridor is considerably less dependent on the primary industries, such as oil and gas and agriculture, and more geared towards both the manufacturing and service sectors. But, at nearly one out of every sixteen jobs, the primary industry's importance in the Corridor's job market

INDUSTRIAL STRUCTURE OF EMPLOYMENT: CORRIDOR, REST OF ALBERTA, CANADA

	Calg.-Edm. Corridor	Rest of Alberta	Canada
Constr.	8.0	8.6	5.6
Mfg.	9.4	6.9	15.1
Primary	6.2	21.1	4.1
Trade	15.5	15.1	15.8
Trans.& Wareh.	6.2	5.7	5.1
FIRE	5.6	3.4	5.8
Prof., Sci., Tech	9.1	3.0	6.5
Accom. & Food	7.0	7.2	6.5
Public Services	19.5	18.1	21.7
Other Industries	13.6	11.0	13.7

FIRE: Financial, Insurance & Real Estate
Public services: include education, health care & social serv., and public admin.; Other industries: include utilities, management, admin. & support, info., culture & rec., and other services
Source: Statistics Canada, TD Economics

BUSINESS COSTS
Overall Operating Cost Index



Source: KPMG "Competitive Alternatives - Comparing Business Costs in North America, Europe and Japan", 2002; Central Alberta -- A Region of Opportunity, TD Economics

is still substantial – particularly when lined up against other Canadian metropolitan areas, where similar shares run generally at about one in fifty jobs – not to mention the many factory and service-sector jobs that feed off activities in oil and gas and agriculture. Relative to other Canada's metropolitan centres, the Corridor has higher employment shares in construction, professional, scientific and technical services as well as transportation services, and lower shares in manufacturing and public services.

The favourable industrial mix of the Calgary-Edmonton Corridor, with it vibrant and highly-productive oil and gas sector at the core, has given the region a leg up on most of its North American counterparts. But, industrial structure alone cannot explain the Corridor's impressive economic performance and high overall quality of life. Other important factors must also be at play which, together, have helped to fertilize the seeds of prosperity. These include low taxes, a young and diverse population, and an excellent infrastructure.

Corridor is a low-cost place to set up shop

An annual study by KPMG Consulting has revealed that businesses in the Corridor enjoy among the lowest costs in the industrialized world.[5] The region's competitive edge in the study reflects in part the sharp depreciation in

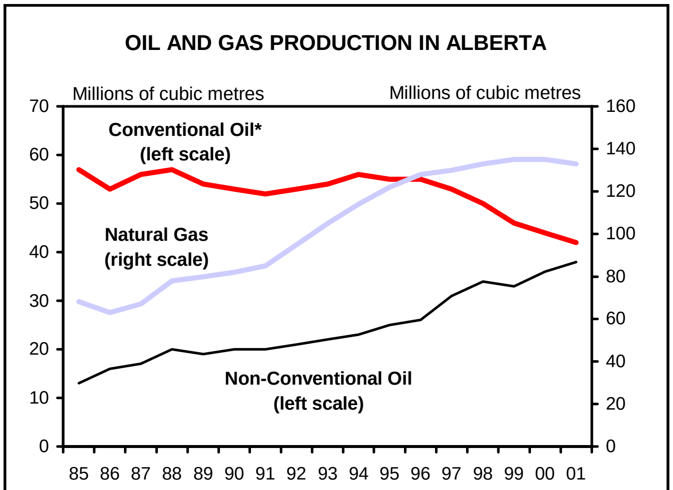
Oilpatch forms the bedrock of the Corridor's economy

Imperial Oil's February 13, 1947 landmark crude oil discovery at Leduc, 40 kilometres southwest of Edmonton, represented the beginning of the modern oil and gas industry in Alberta. Today, the oil and gas industry has grown into an industry that is directly responsible for 19 per cent of real GDP and 60 per cent of international exports in the province.

Alberta's oil and gas sector is based on the exploration and development of three main resources – natural gas, conventional crude oil and non-conventional crude oil. Conventional crude oil includes light/medium crude as well as heavy oil. And, non-conventional crude oil is comprised of extra-heavy crude oil as well as bitumen, with the latter produced in situ, and marketed as such, or upgraded. While conventional and crude reserves are found across the western Sedimentary basin, non-conventional reserves are found in the north-western oilsands close to Fort McMurray.

The oil and gas sector, Alberta's most important economic contributor, continues to change dramatically. As recently as 1985, 92 per cent of the province's crude oil production was attributable to conventional oil.[6] But, with declining conventional production, and rapidly depleting reserves, the share of non-conventional production is poised to overtake that of conventional production, and by 2011, account for as much of three quarters of the province's total crude oil supply. At the same time, output of natural gas has gained ground against crude oil in terms of importance over the past decade, rising to about 40 per cent of total provincial mineral production in the late 1990s.[7] However, with natural gas posting little growth in production since 1999, the recent upward trend has halted.

There is considerable debate on the size of reserves of non-conventional oil. According to Alberta Energy and Utilities Board (EUB), the province has remaining established reserves of 175 billion barrels of non-conventional oil. The ultimate potential reserves – those that can be recovered once all the exploration and development activity has been completed – are even more substantial,



* Includes heavy oil; Source: Statistics Canada, TD Economics

at about 315 billion barrels. This estimate exceeds the proven reserves of Saudi Arabia (260 billion barrels), although international journals have been slow to recognize Alberta's vast non-conventional reserves. In December 2002, however, New York based Oil Journal agreed to ratchet up Alberta's oil reserve count from 5 billion barrels to 180 billion barrels.

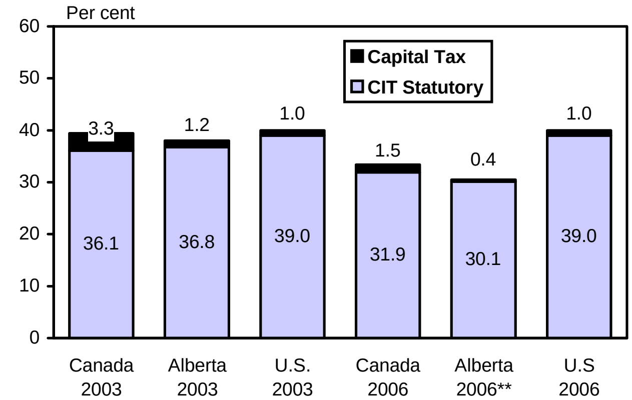
In contrast, reserves of conventional oil and natural gas are in a long-term decline. Alberta has been steadily depleting its established reserves of conventional crude over the years, so that by 2001, the level was a mere 22 per cent of the established volume in 1970. Moreover, the province's established reserves of natural gas (42 trillion cubic feet) were down by roughly 35 per cent from their peak level in the 1980s. In other words, without additions to these reserves, the established conventional crude oil and natural gas reserves would be depleted by about 2008. Thus, Alberta will need to increasingly focus on tapping its non-conventional crude oil reserves, and to develop unconventional sources of natural gas, such as the coalbed methane, which is mined from the region's abundant supply of coal. (For more details and the challenges facing the oil and gas sector, see page 18-20).

the Canadian dollar over the past decade, since all costs (i.e., taxes, electricity, labour) are converted into U.S. dollars at current exchange rates. Still, the cost advantage of the urban areas in the Corridor is so healthy, that even a firming in the Canadian dollar above the 70 U.S.-cent mark – which TD Economics projects by mid-2004 – would not put a large dent in its relative position.

For one, businesses and individuals in the Calgary-Edmonton Corridor benefit from a low overall tax burden. On the business side, a legislated plan to reduce income-tax rates on small businesses to 3.0 per cent in 2004 will yield the lowest small-business rate of Canada's provinces, along with New Brunswick. The combined federal-provincial general corporate income-tax (CIT) rate in Alberta for 2003 is estimated at 36.9 per cent (including the federal surtax), third lowest among Canada's provinces after Quebec and Ontario and below the comparable U.S. rate of 39.0 per cent. And, while third place is certainly a respectable showing, the true picture is even more favourable. First, the Alberta government has committed to lowering its CIT rate by 1 percentage point in 2004, which, combined with another dose of federal CIT relief next year, will lower the combined rate to 33.6 per cent. Moreover, Treasurer Patricia Nelson has promised an additional 3.5 percentage-point reduction in the CIT rate on top of that "when affordable", which, at 30.1 per cent, would match Ontario as the lowest CIT levy in Canada, assuming promised tax cuts by the Ontario government go ahead over the next few years. Still, building in the fact that Alberta levies no capital taxes (as is the case in all other Canadian provinces except B.C.) and no sales taxes on business inputs (as is the situation in several provinces and many U.S. states) would cast Alberta's corporate tax competitiveness in an even better light, as would the relatively low cost of regulation, low unionization rates, and low minimum wage.[8] Finally, the federal government's decision in its 2003 budget to lower the CIT rate on resource income and adjust income-tax treatment on royalties and mineral exploration expenditures will enhance the competitiveness of Alberta's oil and gas sector.

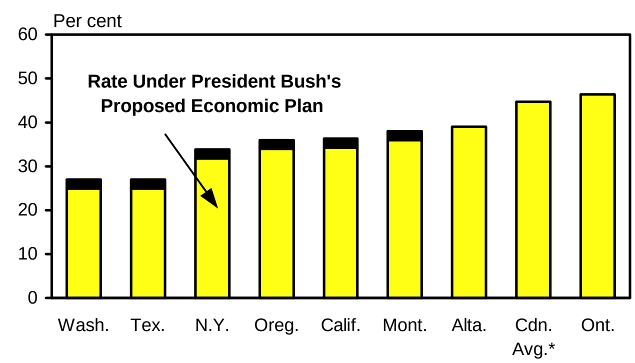
On the personal side, Alberta is the only province to levy a single tax rate of 10 per cent. The top combined federal-provincial marginal personal income tax (PIT) rate in the province is 39.0 per cent in 2003, the lowest among the provinces by a considerable margin, and below those of most competing U.S. states. But, once again, a few issues cloud the personal-tax comparison, and should be noted. Alberta's top combined rate kicks in at the federal threshold of C$104,650, considerably lower than the U.S. level of US$311,050. Using a state income threshold of US$65,000 (more comparable to Canada's top threshold in Canadian-dollar terms), and factoring in the already-legislated federal PIT cuts in the United States for 2004 and 2006 that could be accelerated to 2003 under the Bush proposals, leaves Alberta at a disadvantage vis-à-vis its

CANADA, ALBERTA AND U.S. CURRENT AND PROPOSED CIT RATES*



* Incl. surtaxes. ** Assumes Alberta govt. cuts rate to 8%. Prov. ave. income tax rate is weighted ave. State income tax rate is effective rate after taking into account deductability of state taxes for fed. tax purposes. Source: Dept. of Finance, TD Economics

MARGINAL PERSONAL INCOME-TAX (PIT) RATES IN 2003 For Selected Provinces and U.S. States



* Weighted average of the provinces; Income thresholds are C$104,650 for Canada and US$65,000 for U.S. (roughly C$104,650) in 2003. Marginal tax rates include federal and provincial/state taxes and credits, and are calculated for a single wage-earner with no dependents; Source: Federal and provincial governments, U.S. Congressional Budget Office, TD Economics

COMBINED FEDERAL AND PROVINCIAL TOP PERSONAL MARGINAL INCOME TAX (MIT) RATES IN CANADA

	2000	2001	2002	Projected 2003
Nfld. & Lab.	51.3%	48.6%	48.6%	48.6%
P.E.I.	48.8%	47.4%	47.4%	47.4%
Nova Scotia	48.8%	47.3%	47.3%	47.3%
New Brunswick	48.8%	46.8%	46.8%	46.8%
Quebec	50.7%	48.7%	48.2%	48.2%
Ontario	47.9%	46.4%	46.4%	46.4%
Manitoba	48.1%	46.4%	46.4%	46.4%
Saskatchewan	49.7%	45.0%	44.5%	44.0%
Alberta	43.7%	39.0%	39.0%	39.0%
British Columbia	51.3%	45.7%	43.7%	43.7%

Source: Canadian Tax Foundation, TD Economics

U.S. competitors in terms of marginal PIT rates. Furthermore, the Alberta government, along with numerous U.S. states, charge monthly health care premiums from individuals. However, in contrast to the vast majority of provincial and state jurisdictions in North America, Alberta does not levy a sales tax. Typically, sales tax rates in North America run from 4-8 per cent.

In an attempt to provide a clearer snapshot, KPMG Consulting issued a report in late 2001 that compared the overall cost of living across 14 North American jurisdictions.[9] Costs for income tax, sales tax, statutory plans such as Canada Pension Plan (CPP) and housing are factored in for single individuals at a number of income ranges. In a nutshell, both Edmonton, and to a lesser extent, Calgary stack up well, finishing in the top five in the overall rankings (see the chart below).

A young and diverse population[10]

The economy of the Calgary-Edmonton Corridor has reaped the rewards from rapid migration from other parts of the country in recent years. In fact, of the net gain in population over the past 5 years, 45 per cent was attributable to inter-provincial migration. Natural increases (i.e., births net of deaths) accounted for about one-third of the gain, while net international and intra-provincial migration accounted for the remainder. On a geographical basis, the Corridor received the largest population inflows from British Columbia, and the Atlantic region over the 1996-2001 Census period.

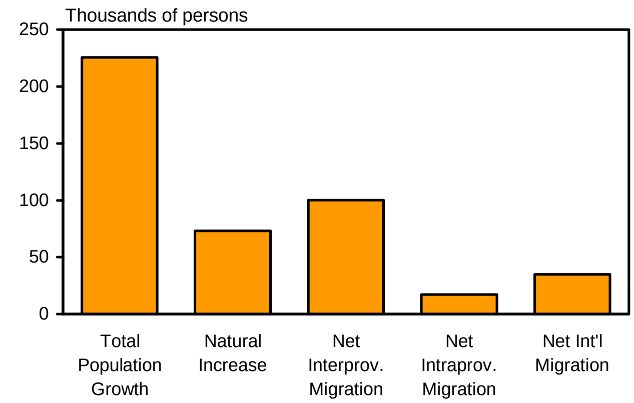
What's more, the majority of new migrants to the Calgary-Edmonton Corridor are young workers in the age range of 25-44 years. As a result, while the Corridor's population base continued to grow older over the past half decade, in lockstep with the North American trend, the influx of young individuals helped to cap the average age in the region at just 35.2 years – 2.4 years lower than the Canadian level and roughly equal to that posted in the United States. Its high share of core-age workers provides a good explanation for why the employment-to-population ratio and

COMPARING LABOUR FORCES IN 2001

	Alberta	Canada
Employment rate (%) (Employment-to-working age pop.)	69.0	61.2
Labour force participation rate (%) (Labour force-to-working age pop.)	72.3	66.0
Per cent with post-secondary degree or diploma*	55.2	53.1

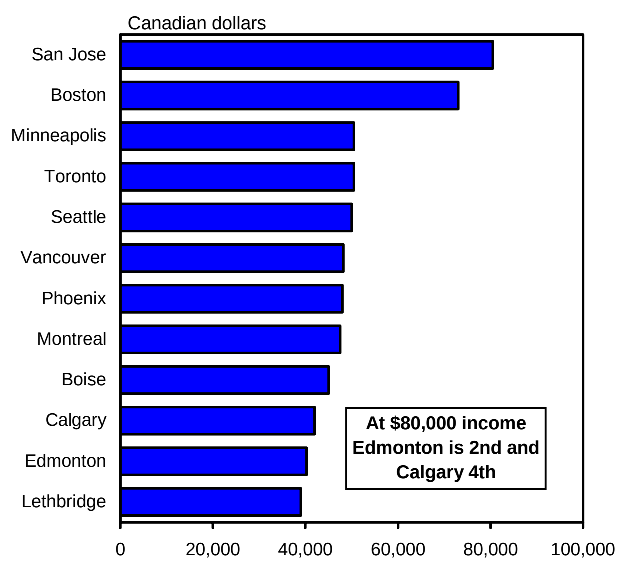
* for individuals aged 25-64 years
Source: Statistics Canada, TD Economics

COMPONENTS OF POPULATION GROWTH IN THE CALGARY-EDMONTON CORRIDOR: 1996-2001



Source: Statistics Canada, TD Economics

ANNUAL PERSONAL COST OF LIVING*
Employee earning $40,000



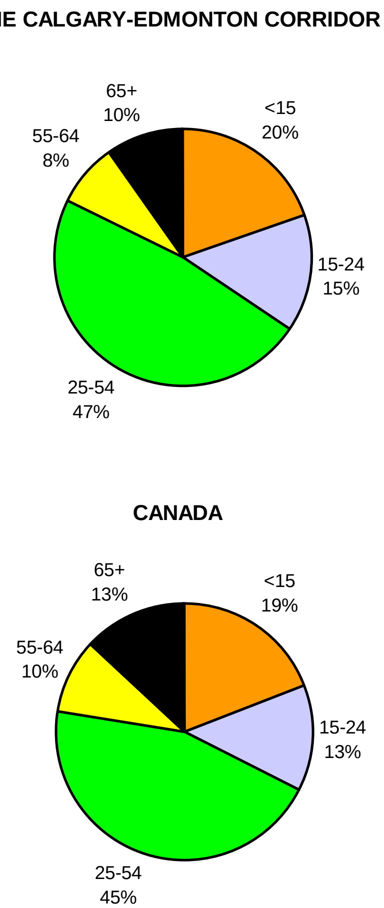
* Includes costs of taxes, housing, automobile costs, and other goods and services. Except for Lethbridge, the total cost of living (based on the lifestyle of a typical person earning this level of income) exceeds the individual's current income. In these high-cost cities, the employee would need to either increase their income to maintain this typical lifestyle, or decrease their expenses.
Source: KPMG Consulting "Personal Tax and Cost of Living Study" April 2001, TD Economics

labour-participation rates in the Corridor are among the highest in Canada. As importantly, the large share of young families has also helped to support birth rates, which, in turn, will provide fuel to the region's labour force several years down the road.

Another characteristic of the inter-provincial migrants is that they tend to be highly-educated, holding a post-secondary degree or diploma. In fact, among all university graduates in the region, more than 1 in 10 have moved to the region in the past five years, about three times the national-average rate. The influx of skilled migrants has been crucial in mitigating the extent of labour shortages in areas such as oil and gas, construction, and high-tech.

While recent international immigrants only make a small share of population growth, the region still boasts a diverse population base. About 15 per cent of Albertans are deemed to be foreign born, the third highest ratio among Canada's provinces after Ontario and British Columbia. Within the province, Calgary and Edmonton receive the lion's share of the new immigrants, who largely flow from regions such as China, the Philippines, India, Korea and Pakistan. Aboriginals comprise about 3.5 per cent of the Corridor's population – a share that has been growing, and is almost guaranteed to climb even further down the road on the back of the relatively young average age (22 years) and high birth rate of this ethnic group, as well as their increasing tendency to move off reserves to larger urban centres such as Edmonton and Calgary.

POPULATION DISTRIBUTION BY AGE GROUP IN 2001



Source: Statistics Canada, TD Economics

World-class infrastructure

The Calgary-Edmonton Corridor features an excellent physical and social infrastructure. In addition to a solid public education system, there are a total of 11 post-secondary institutions in the Corridor – 3 universities and 8 colleges – that boast a number of top-notch research institutions. The University of Alberta and the University of Calgary have particularly well-established research programs. A strong presence in medical research continues to support the high quality of the province's health care system. Furthermore, armed with one of the highest rates of internet connectivity in the world, the Corridor has a stellar communications system. By the end of 2004, the Alberta government's SuperNet initiative will be completed, which will offer a high-speed, high-capacity broadband network linking 4,700 government offices, schools, health-care facilities and libraries in 422 Alberta communities.

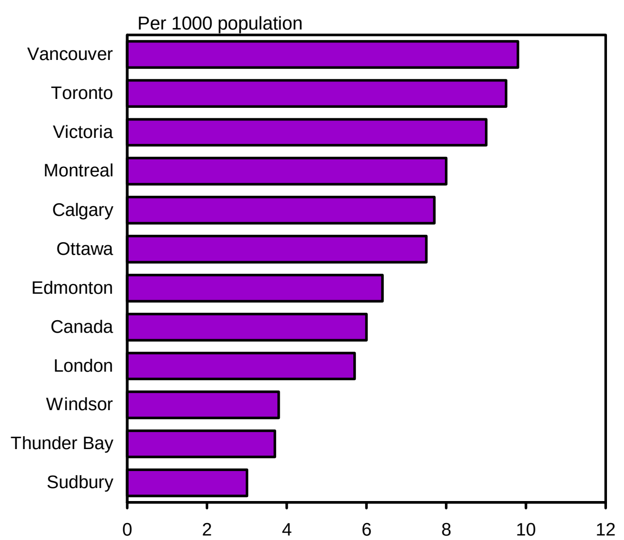
Transportation infrastructure in the Corridor includes two international airports in Calgary and Edmonton, 1 regional airport in Red Deer, two major railways, light rapid transit systems in both Calgary and Edmonton, and an excellent road and highway network. Major east-west highway routes are the Trans-Canada Yellowhead Highway running through Edmonton, and the Trans-Canada highway running through Calgary.

The major north-south artery that connects the Corridor – Highway 2 – forms a major pillar of the CANAMEX Corridor project. The project, which also includes Montana, Idaho, Utah, Nevada and Arizona and a number of Mexican jurisdictions, is aimed at enhancing trade opportunities and economic development across the jurisdictions. When completed in 2007, CANAMEX will be the only continuous north-south highway connecting Alaska, Western Canada, the United States and Mexico. The main link between Alberta and the United States will occur at the Coutts/Sweetgrass border crossing, which is already the busiest crossing in the province, handling about 500 trucks per day and roughly $5 billion in two-way trade.[11] As well, there are five other crossings into Montana: Adan, Carway, Chief Mountain, Del Bonita and Wildhorse. A significant volume of exports is cleared out of province. In fact, four of the top five crossings for Alberta exports (North Portal in Saskatchewan, Kingsgate in B.C., Emerson in Manitoba and Pacific Highway in B.C.) are located outside the province.

The development of the CANAMEX reflects the increasing trade in the north-south, rather than east-west direction. While in 1981, two dollars of Alberta exports were sent to other parts of the country for each one dollar shipped to other countries. This ratio has since reversed. The United States accounts for more than 85 per cent of the province's international goods exports, with Asia accounting for the bulk of the rest.

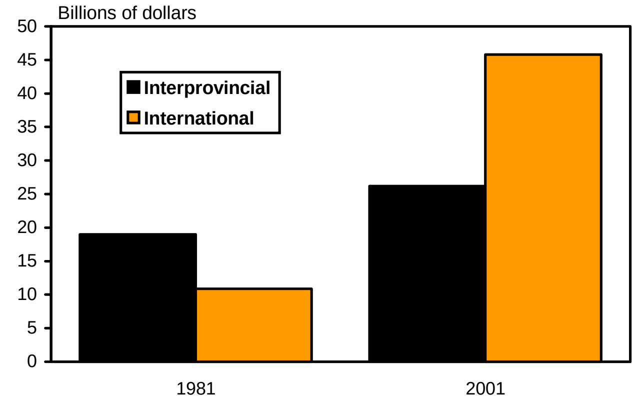
The Calgary-Edmonton Corridor also offers many amenities that boost the overall quality of life for the residents. In addition to a long list of festivals, museums, and restaurants, the region is home to – or within close proximity of – an abundance of parks, lakes and ski and hiking resorts. The Banff, Jasper and Lake Louise ski and hiking resorts, located in the Rocky Mountains, are only a 2-4 hour drive away from the Corridor.

BOHEMIANS* IN CANADA



* Bohemians are those employed in arts industries including authors, designers, musicians, actors, photographers, dancers and other artists.
Source: Competing on Creativity: Placing Ontario's Cities in a North American Context, Gertler, Florida, Gates and Vinodrai, November 2002; TD Economics

ALBERTA'S EXPORTS



Source: Statistics Canada, TD Economics

Dr. Richard Florida of Pittsburgh's Carnegie Mellon University and Meric Gertler of the University of Toronto have argued that "creative" individuals – who tend to be highly mobile and have both the skills and means to choose wherever they want to live – will be attracted to city-regions that offer the amenities and the broad "quality of place" they desire.[12] In addition, regions that are most successful in luring the "creative class", which includes artists, writers, performers and the like, will fare the best among their peers in terms of innovation and economic growth. Based on Florida and Gertler's *bohemian index*, which tabulates the concentration of individuals in these arts-related professions, Calgary ranked 4th and Edmonton 9th relative to 41 competing medium-sized cities in North America.

PROSPECTS FOR THE CORRIDOR 2003-05

Put it all together, and these strengths have translated into a virtuous cycle – as the strong oil and gas activity has laid the foundation for strong economic growth, which in turn has attracted inter-provincial migrants, who have powered consumer spending, housing markets and retail markets. In the past decade, the Corridor's economy has enjoyed a spectacular run, with annual average rates of real

GDP growth and job creation of 4.2 per cent and 2.7 per cent, respectively. Over the 10-year period, the number of housing starts in the Corridor doubled, reaching 28,000 units in 2002. And, despite hoards of individuals entering the labour market, the unemployment rate in the region has been cut in half. At 5.4 per cent in 2002, the jobless rate in the Corridor was more than 2 percentage points below the national-average level.

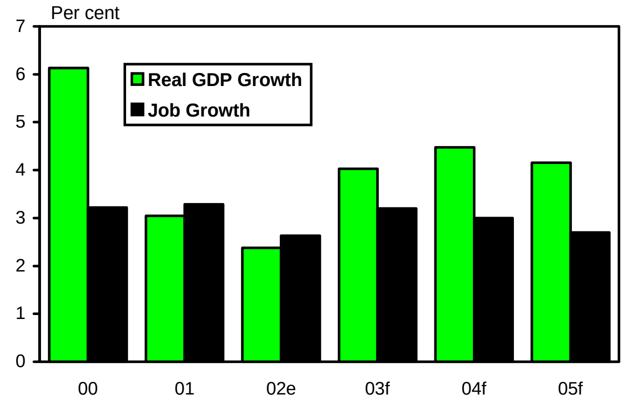
2001-02 represented a temporary breather

Still, there is little doubt that the recent 10-year period has ended off on a weaker note. In the 2001-02 period, the region's economy was hit by a triple-whammy of a sharp slowdown in oilpatch activity – which came on the heels of slumping crude oil and natural gas prices in mid-2001 – drought conditions in the crop sector, and a considerable slackening in U.S. demand. But despite these chillwinds, real GDP growth still came in at close to 3 per cent per year in 2001-02, as activity in a number of other sectors took up the slack. With interest rates remaining low, consumers in the region continued to spend on "big ticket" items, including cars and housing. The ongoing boom in the housing market, combined with further expansions in the petrochemicals industry, supported continued strength in construction activity over the past two years. And, while the region's flourishing IT sector felt the impact of the bursting of the high-tech bubble in late 2000, the heavier tilt towards IT service industries – such as communication services – rather than IT equipment manufacturing served it well.

Growth in Corridor to ramp up in 2003

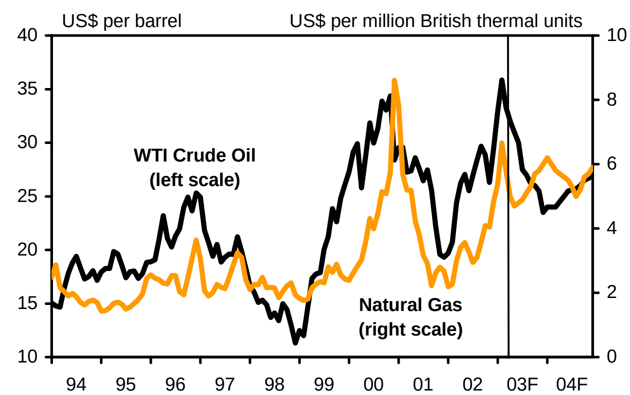
Happily, the two-year growth pause appears to be lifting so far in 2003. A combination of concerns about conflict in the Middle East, strikes in Venezuela and low storage levels have driven up crude oil and natural gas prices sharply since late 2002, boosting producers' cash flows and powering drilling activity. And, although energy prices have pulled back from their recent highs in April 2003, as U.S. victory in Iraq appeared imminent, prices remain at lofty levels. At the same time, consumers in the Corridor are showing only modest signs of fatigue on the heels of last year's buying binge, while the heady momentum in the housing sector has carried over into the first half of this year.

THE CALGARY-EDMONTON CORRIDOR



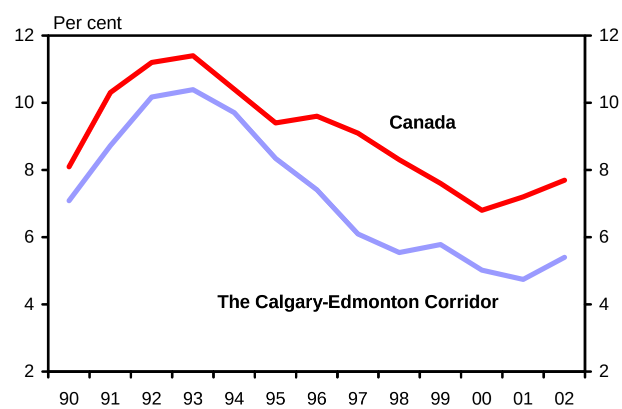
e: estimate, f: forecast by TD Economics as at March 2003; Source: Statistics Canada, Conference Board of Canada, TD Economics

CRUDE OIL AND NATURAL GAS PRICES



Actual data to Mar. 31, 2003; F: forecast by TD Economics as at Apr. 2003; Source: International Monetary Fund, New York Mercantile Exchange, The Globe and Mail, TD Economics

UNEMPLOYMENT RATES



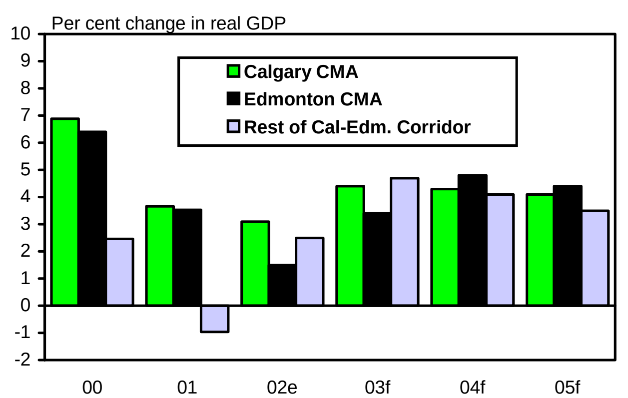
Source: Statistics Canada, TD Economics

Over the near term, the health of the U.S. economy is the most significant risk facing the economy of the Calgary -Edmonton Corridor. Certainly, recent U.S. economic data releases have been alarmingly weak, although it remains too early to tell how much of the softness is related to unseasonably bad weather in the winter months and to the war in Iraq. However, we continue to believe that the conditions are in place for U.S. spending to regain ground in the second half of this year, as business cost-cutting pays off in terms of lower labour costs and improved profit margins, and stimulative monetary and fiscal policies continue to fuel demand.

The key assumptions underpinning the 2003-05 forecast are:

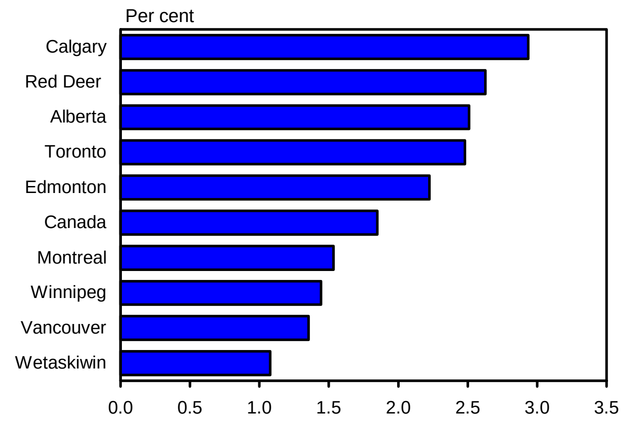
- The U.S. economy is expected to pick up considerable steam in the second half of 2003, and expected to grow at a healthy rate of 3.7 per cent in 2004 and 2005.
- Crude oil prices, which surged to US$34 per barrel in the first quarter of 2003, are is expected to drop to US$23.50 by year-end, and then to average US$25.00 in 2004-05, in the middle of OPEC's target range of US$22-28 per barrel range for its basket (equivalent to a WTI US$24-30).
- After jumping to US$6.00 in the first quarter, natural gas prices are projected to end 2003 at US4.50 per MMBtu, and to average US$3.50 in 2004-05.
- Crop prices are assumed to pull back from current levels later this year, as global production picks up, while livestock prices remain relatively stable. No major changes are forecast in the 2004-05 period
- The Bank of Canada is projected to raise short-term interest rates by an additional 175 basis points by the end of 2004, and then to stand pat in 2005.
- The Canadian dollar will strengthen to 69 US cents by year-end, and to 71.5 US cents by the end of 2005

ECONOMIC GROWTH IN THE CALGARY-EDMONTON CORRIDOR



e: estimate, f: forecast by TD Economics as at March 2003; Source: Statistics Canada, Conference Board of Canada, TD Economics

GROWTH IN AVERAGE WAGES AND SALARIES IN 1995-2000



Source: Statistics Canada, TD Economics

Based on these assumptions, real GDP growth in the Corridor is projected to expand at a brisk clip of 4.0 per cent this year, and 4.3 per cent in the 2004-05 period. At the same time, job creation should remain healthy, at 3 per cent per year – setting the stage for nation-leading annual gains in real per capita incomes of 2.5 per cent. In contrast, TD Economics forecasts housing starts across the Corridor to edge down over the next three years from their current unsustainable levels, as hikes in Canadian interest rates begin to weigh on housing demand in the second half of this year.

Balanced growth across the Corridor in 2003-05

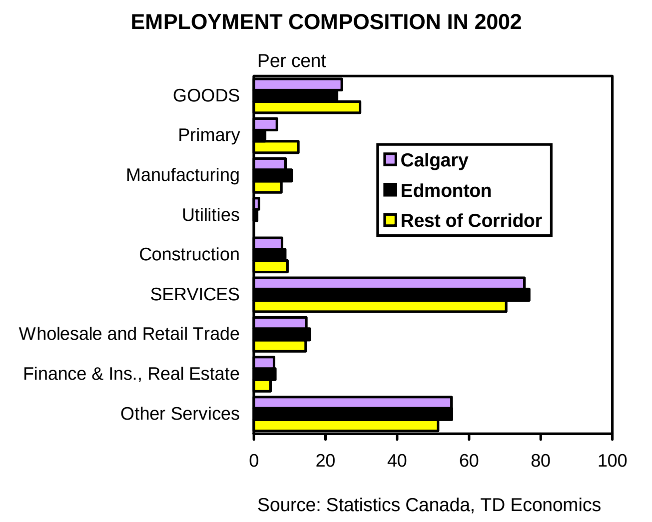
Over the past decade, the Calgary region has been the leader in the Corridor, posting top showings in virtually every economic measure – from population increases to job creation to income gains. The Calgary area, which continued to benefit from its position as the western centre for corporate head-offices and regional transportation hub (see text box on page 17), registered real GDP growth of about 5 per cent per year in the 1993-02 period. However, the economies of Edmonton and the rest of the Corridor (ROCo), which includes Red Deer, did not finish far be-

Comparing industrial structures within the region

At $43 billion in real output in 2002, the Calgary metropolitan economy is the largest in the region, followed by Edmonton ($36.2 billion).[13] The rest of the Corridor (ROCo), which includes Red Deer, is attributed with about $10.1 billion of real GDP.[14]

All three economic regions in the Calgary-Edmonton Corridor are considerably more reliant than the Canadian average on primary industries, and in particular, oil and gas activity, although the ROCo also has a significant agricultural and logging composition. Shares range from about 9 per cent of output and 3 per cent of employment in Edmonton region to over 20 per cent of output and 6 per cent of jobs in the ROCo. However, Calgary is stilled viewed as “Canada’s Energy Capital”, given that it remains home base for oil and gas corporate headquarters. And, although Calgary’s real GDP share of 19 per cent in the primary sector may turn some heads, this is partly explained by the fact that the CMA includes the municipal district of Rocky View, which is shaped like a horseshoe around the City of Calgary and envelops some 4,000 km.

Compared to Calgary, the Edmonton area economy is more driven by manufacturing and manufacturing-related technologies (i.e., nanotechnology). Strathcona County in the Capital Region is home to Refinery Row, which has been transformed into Canada’s largest processing centre for petroleum, with 30 major petrochemical, oil and natural gas plants. Although the manufacturing reliance of the region around Red Deer is somewhat lower, it too is growing, spurred by the recent development of a number of petrochemical plants, including the large factory in Joffre, and food-processing facilities.



All areas have broadened their economic base into a wide range of other industries, notably high technology, and business services. Among the regions, Edmonton is the most service-based, and continues to have the largest public sector composition, at 15 per cent of GDP. However, Edmonton’s share of public services has dropped significantly since the early-1990s, before the provincial government embarked on deficit reduction. Calgary is home to the largest share of commercial service industries, finance, insurance and real estate and transportation services. All regions are recording rising, and significant shares of healthcare services.

hind, at about 4 per cent annually over the period. In particular, the Edmonton economy – after beginning the 1990s on a dismal footing in the wake of provincial government cutbacks – raced ahead throughout the better part of the decade. Both Edmonton and the ROCo enjoyed especially strong growth in primary industries and construction activity, which reverberated across their service industries.

Over the 2003-05 period, we expect the recent gap in real GDP growth between Calgary, Edmonton and the rest of the Corridor will narrow, with all regions recording growth of just over 4.0 per cent per year. This year, the ROCo economy is expected to lead the pack, as a bounce back in crop output to more normal levels after two drought-ravaged years and continued strong prospects for livestock provides the area with an added boost. Nonetheless, the possible impacts of the recent imposition of a U.S. tariff on Canadian wheat and U.S. ruling that will require all imported beef to bear a label stating its country of origin by late 2004 represent two risks to the agricultural forecast.

By 2004, Edmonton is expected to move into first place in terms of economic growth, nudging out Calgary and the ROCo. Edmonton is in a particularly good position to benefit from future growth in major oil sands and heavy oil development, since much of the related value-added manufacturing and fabrication is carried out there. Moreover, a number of construction projects, including the University of Alberta's National Institute for Nanotechnology, and expansion of the LRT will provide support to economic growth in Edmonton. In Calgary, economic growth is expected to remain broadly-based, spurred by continued healthy migration flows and robust non-residential construction work, particularly as the Stampede Stadium development heats up. In the ROCo, the momentum in the primary industries on the heels of this year's rebound is projected to carry over into 2004-05, supporting activity on both the goods and services sides of the area's economy.

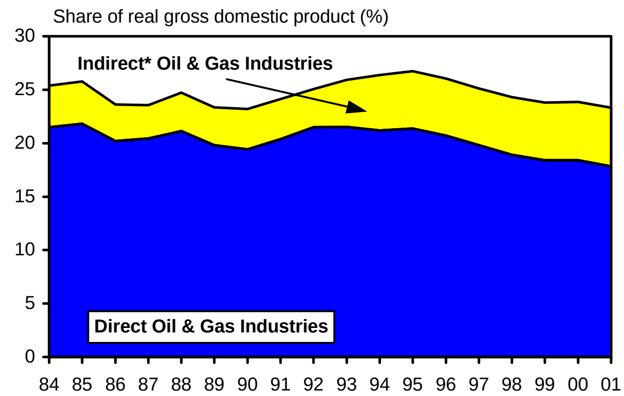
REMOVING THE ROADBLOCKS

The Calgary-Edmonton Corridor appears set to enjoy another period of strong economic growth over the next few years. But, like a Formula One car, without the proper care and maintenance, the transmission will eventually break. And, while waiting at the pit stop, other cars will go racing by. In order to ensure that the engine of prosperity doesn't sputter, policy-makers in the region need to address the following six challenges:

Challenge 1: Economy still hinges on crude oil and natural gas

As we showed earlier, the structure of the Alberta economy has changed markedly over the past few decades. A shrinking dependence on oil and gas production and drilling has been displaced by the rising prominence of several other sectors, namely manufacturing, construction, and information-technology. It is noteworthy that these areas have gained ground not because the oilpatch has struggled – oil and gas activity has grown at a healthy clip – but because of especially sizzling rates of expansion of their own. Notably, the Corridor has successfully leveraged the region's strength in oil and gas through the emergence of such industries as advanced equipment manufacturing for the oilpatch and the export of business and consulting services.

ALBERTA'S RELIANCE ON OIL AND GAS



* Include oil& gas engineering construction, petrochemical manufacturing, mining machinery and pipeline transportation
Source: Statistics Canada, TD Economics

But, while the declining importance on mining activities has left the economy somewhat less vulnerable to swings in oil and gas prices, the bottom line is that the Calgary-Edmonton Corridor remains inextricably linked to the health of demand for, and supply of, oil and gas. As the chart at the top shows, any broadening in the measure of oil and gas "dependence" to include those higher-value added industries whose lifelines remain closely tied to the oilpatch yields only a small decline in real GDP share over the past two decades.

On the bright side, the long-term outlook for the oil and gas sector appears to be favourable. Not only are demand prospects from the energy-hungry U.S. favourable, but more than $50 billion in new oil sands investment that has been either recently completed or planned is expected to triple oil sands output by 2010. And, the spin-offs from the buoyant oilpatch will continue to flow to the region's economy, as further evidenced in March 2003, when Enbridge recently announced that it would study the possibility of developing a $3 billion pipeline to transport oil sands production to the west by 2009.

Despite the rosy growth outlook for the oilpatch, there

Possible futures for oil sands development

	February 2003
Projects Announced	**$87 billion**
• Completed since 1996	$24 billion
• Under construction	$ 7 billion
• At risk/Under evaluation	$56 billion
• Forecast (business risk)	$23 billion

Source: Athabaska Oil Sands Developers, TD Economics

Oil Sands an emerging energy powerhouse

Last year, the Alberta government reported that the total value of projects listed in the province at $2 million or greater that have been completed since 1996, are currently under construction or proposed to begin within the next two years was $85 billion. Of this total, a striking $55 billion is expected to be earmarked toward oil, gas and oil sands projects. Since then, two major projects have been postponed.

Oil sands projects in progress

- **Suncor Energy Inc.** completed its Project Millennium in 2001 at a final capital cost of $3.4 billion. That project was designed to expand production of its oil sands plant in Fort McMurray to 225,000 barrels per day (bpd). The consortium then decided to further increase production to 260,000 bpd by 2005 by embarking on its Firebag In Situ Oil Sands project. The first phase of this project is more than 80 per cent complete. In April 2003, Suncor announced that it would spend an additional $1.5 billion to boost production at Firebag to 330,000 bpd by 2007, and earmark a similar amount to its Voyageur project – a multiphase expansion plan aimed at increasing production to between 500,000-550,000 bpd by 2010-12.
- **Syncrude Canada,** a partnership between Imperial Oil Resources, Canadian Oil Sands Trust, Petro Canada, and a number of other interests, has existing and expected expansions, including stages three and four of the four-stage project that began in 1996. These projects will last until 2010 and will include the development of the North mine and Aurora project, the process enhancements to its plant operations and the construction of upgrading units.
- The **Athabaska** Oil Sands project, owned by Shell Ltd., Chevron Ltd. and Western Oil Sands Ltd, was first announced in 1999. The project consists of the $1.8 billion Muskeg River Mine, that started in late 2002, and has a planned expansion set for 2008. Moreover, a new $1.7 billion upgrader is expected to be built at Scotford, near Edmonton, in early 2003. The upgrader, part of the Athabaska Oil Sands Project (the joint venture between Shell Canada, Chevron Canada and Western Oil Sands), is being constructed next to Shell Canada's refinery near Fort Saskatchewan, Alberta and will upgrade the bitumen from the Muskeg River Mine. Shell's production is expected to increase in 2008 to match of the expansion of the Muskeg project.

Postponed projects

- The **True North Energy Fort Hill** Oil Sands Project, which received regulatory approval in October 2002, was postponed in January 2003 because of rising labour and material costs, the shortage of skilled labour and the lack of business partners to share the business risks. The uncertainty over Kyoto played only a minor role in shelving the project. The original plan for the project involved two phases of production, the first would have begun in 2005 and the second phase in 2009. This project would have been the first non-integrated bitumen producer in the oil sands mining business. The bitumen produced, including the diluent, would be sent via third-party pipelines to refineries in Canada and the Midwest U.S.
- The **Canadian Natural Resources Limited Horizon** project, with production originally set to start in 2008, has been delayed. The company will complete the design-engineering phase of the project but will decide at a future date whether the upgrader will be done in Alberta or if the secondary upgrading facilities will be relocated to the U.S. The company wants to hear from the federal government in its post-2012 plan for the implementation of the Kyoto Protocol before any site clearing or pre-construction work begins in 2004.

exist some clouds on the horizon. For one, rising costs of oil sands production – which stems from repair costs, start-up expenses with new technology, labour shortages, lower production and high natural gas prices – were a major factor behind the postponement of two oil sands projects over the past year, namely True North Energy's Fort Hill Oil Sands Project and Canadian National Resources Limited Horizon Project. And, risks aren't limited to oil and gas producers. Shortages of natural gas and ethane pose a major challenge to the Corridor's recently-burgeoning petrochemical and refining industries, as well as related-services businesses.

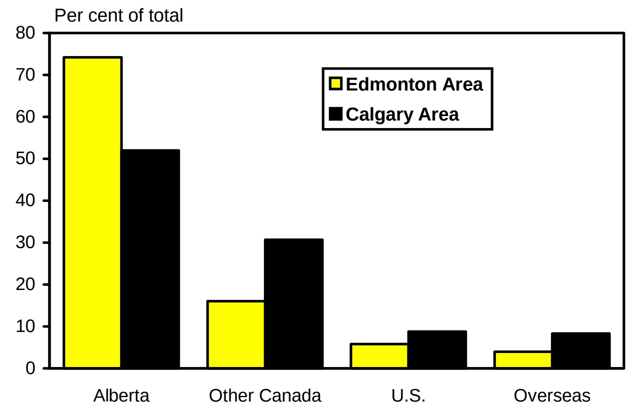
Kyoto a risk, but also an opportunity

An even bigger risk to the future of the oil and gas sector is on the environmental side. Notably, last year's ratification by the federal government of the 1997 Kyoto Accord on Climate Change – which calls for a reduction in overall greenhouse gases of 6 per cent below 1990 levels by 2010 – fanned fears in Alberta. Specifically, the lack of any clear federal plan on how to accomplish the targets left oil and gas producers – who are the biggest emitters of greenhouse gases – concerned about how the Accord would impact their costs structures. As a result, in the fall of 2002, a number of oilpatch producers announced that investment plans would be scaled back, with one oil sands project being shelved in part because of concerns about Kyoto. (See text box on page 19).

The jitters in the oilpatch over Kyoto have since dissipated somewhat. In December 2002, the federal government announced two major concessions to oil and gas sector. First, Ottawa indicated that it would ensure that emissions reductions for the oil and gas sector will be set at a level not more than 15 per cent below projected business-as-usual levels in 2010 – an amount similar to that committed to by the Alberta government under their own "made-in-Alberta" plan. Second, the federal government promised that companies would be able to buy carbon credits to meet their emission reduction responsibilities at a price no greater than $15 per tonne.

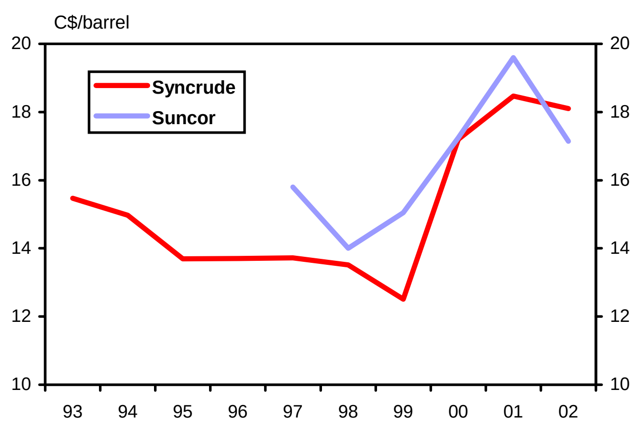
But, while these commitments have shifted some of the risk from oil and gas producers to Canadian taxpayers at large, the uncertainty has far from been eliminated. Not only has the federal government yet to release a clear-cut implementation plan, but the concessions only extend to 2012 – a shorter period than the useful life of large oil sands projects. Moreover, while the price of emissions credits have been capped, this does nothing to address the costs associated with regulation and compliance that will certainly have a negative impact on producers. Lastly, while the decision of the United States government not to sign on to the Accord may help to lower the cost of emissions credits – since it effectively keeps one large potential buyer of credits on the sidelines – there is the risk that investment, particularly in refining and processing, could head south.

ORIGIN OF VISITORS



Source: Alberta Economic Development, TD Economics

ALBERTA OIL SANDS PRODUCTION TOTAL COSTS*



* Include cash and non-cash operating costs
Source: Annual Reports, Calgary Herald, TD Economics

… but provides opportunities

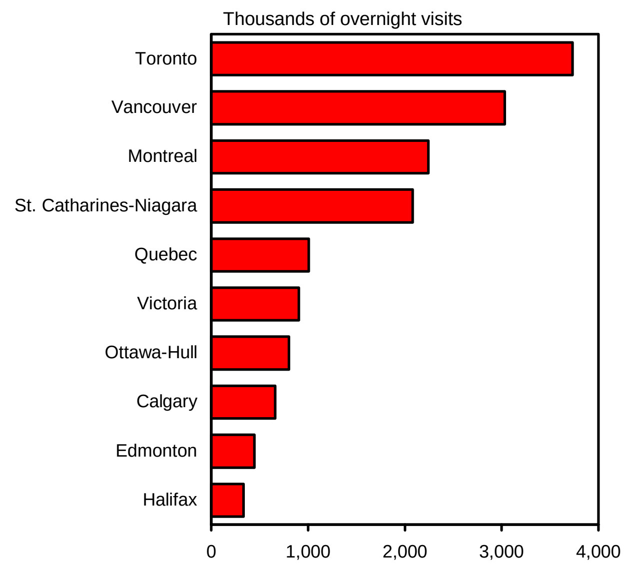
The uncertain impact of Kyoto on the economies of Alberta and the Calgary-Edmonton Corridor further highlights the need for the region to place even greater attention on developing alternative energy sources – such as wind, solar power and hydrogen – as well as adapting new technologies that allow producers to burn clean coal and to extract existing oil and gas reserves in a more environmentally-friendly fashion. For example, there are opportunities for the region to become a global leader in "carbon sequestration" – a process that pumps carbon dioxide into secure reservoirs deep into the ground. This technique would be a winning strategy on three fronts. First, it would trap carbon dioxide under ground, hence lowering greenhouse gases. Second, it would use the carbon dioxide to force out of the ground natural gas or oil, increasing recovery rates. And, in the face of falling natural gas reserves, sequestration could help to extract methane from coal, which is an unconventional source of natural gas.

The province, through its Alberta Energy Research Institute, is already supporting the oil and gas sector in developing leading-edge technologies. This builds on other government commitments to improve the environment. Calgary's C-Train is the first wind-powered transit system. Moreover, the Alberta government recently announced that as part of its Climate Change Action Plan, wind and recycled wood will light halls of Alberta legislature and supply 90 per cent of power to government buildings by 2005.

Economic development stresses diversification

Economic Development Edmonton (EDE) and Calgary Economic Development have each carved out economic development plans that focus on nurturing a number of rapidly-growing sectors or "clusters" (see accompanying text box). At the same time, these strategies recognize the importance of a healthy oil and gas sector to meeting the overall diversification objective. C Prosperity, the initiative of Promoting Calgary has identified a total of 7 clusters in the region that are currently, or have the potential to become, world-recognized. EDE's Blueprint for the Next Generation Economy targets four "emerging" clusters and four "established" clusters.

TOP 10 URBAN AREAS VISITED BY INTERNATIONAL TOURISTS IN 2001



Source: Canadian Tourism Facts and Figures, 2001; TD Economics

Supporting tourism will help economy to diversify and grow

Tourism – an area that both Calgary and Edmonton have tagged as a key economic cluster – provides particular opportunities for both regions to generate additional wealth and to diversify. Fuelled by a sizeable inflow of international visitors, Calgary's tourism industry is the largest in the Corridor, generating $1.04 billion in activity from 4.78

Economic Clusters*

Edmonton	Calgary
• Advanced Manufacturing	• Geomatics
• Agriculture and Forest Products	• Information Technology
• Biomedicine and Biotechnology	• Tourism, Arts and Entertainment
• Engineering and Technical Services	• Transportation, Warehousing and Logistics
• Information and Media Services	• Wellness
• Oil, Gas and Chemicals	• Wireless-Telecommunications
• Tourism and Entertainment	• Oil and Gas
• Transportation and Logistics	

* As identified by Economic Development Edmonton and Calgary Economic Development, TD Economics

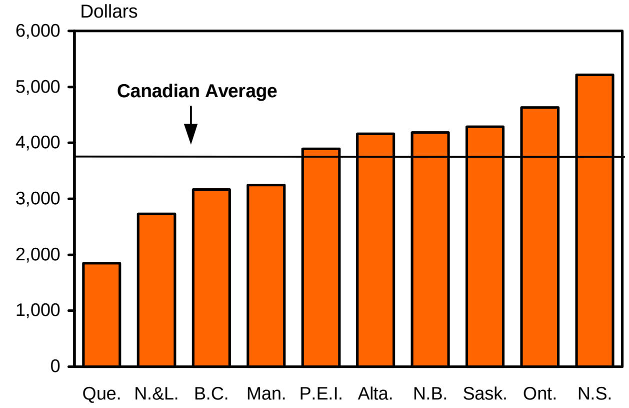
million person visits in 2001, while the Edmonton region generated $860 million from 4.81 million person visits.[15] A number of major attractions have traditionally driven tourists to the region and province – the world's largest ski resort in Lake Louise, largest shopping and eating complex (West Edmonton Mall), largest mountain National Park at Banff-Jasper, second largest zoo (Calgary) and largest theatre festival in North America to name a few.

Yet, despite these draws and a weak Canadian dollar, tourism industries in Edmonton, and to a lesser extent, Calgary have struggled in recent years. Even the world-renowned Calgary Stampede has seen attendance slip. In response, Calgary and Edmonton have begun to take action to revive their industries, with marketing activities, for example, being more directly targeted at select audiences. Furthermore, Edmonton is currently considering a new brand identity to replace its existing "City of Champions." But, one hurdle in the way of longer-term success is that public and private funding for tourism promotion in the region has been following a downward trend over the past few years, at the same time that several of the Corridor's competitors have recognized the enormous economic potential of tourism and have been ramping up funding for promotion. Several of these competing cities, among them Montreal and Vancouver, charge a small fee on hotel rooms and reinvest the funds in tourism marketing. In contrast, monies raised from Alberta's 5-per-cent hotel tax go directly into the province's general revenue fund rather than being used to promote tourism.

Challenge 2: Education and Innovation

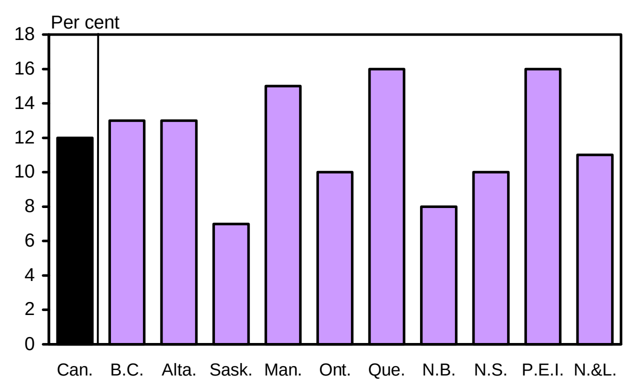
The economy of the Calgary-Edmonton Corridor has reaped the benefits of one of the most highly-skilled workforces in the world. In 2001, 58 per cent of its population held a university degree, college diploma or trade, higher than rates of 53 and 55 per cent recorded in Canada and Alberta, respectively. Moreover, compared to other provinces, Alberta is home to the most trade apprentices as a share of the working-age population as well as individuals who have participated in job training. And, on a particularly encouraging note, a continued upward movement in education attainment in the Corridor over the past 5-year period partly reflects an increasing participation of aboriginals, who have tended to buck the trend towards higher schooling in the past.

AVERAGE UNDERGRADUATE UNIVERSITY TUITION FEES IN 2002-03



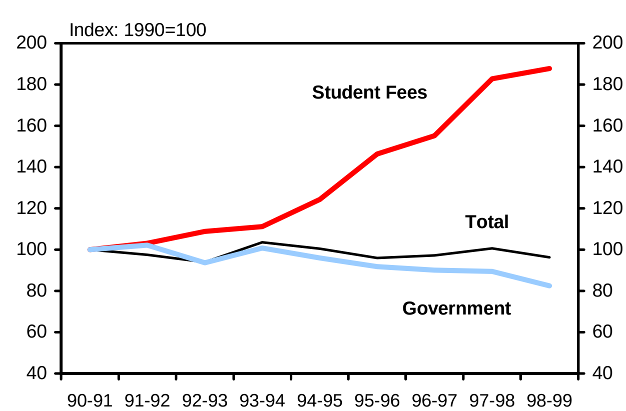
Source: Statistics Canada, 2003 B.C. Budget, TD Economics

HIGH SCHOOL DROP OUT RATE* IN 1999



* Per cent of population that has not completed high school and is not working toward its completion. Source: Statistics Canada: Youth in Transition Survey, Jan. 2002; TD Economics

ALBERTA'S DIRECT REAL SPENDING ON POST-SECONDARY EDUCATION PER STUDENT



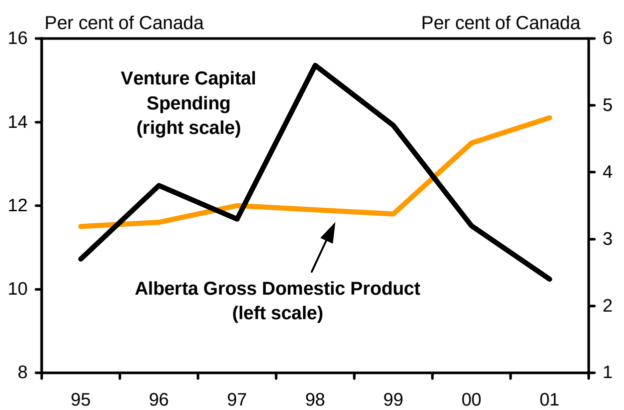
Source: Statistics Canada, TD Economics

Still, not all statistics paint a rosy picture on the education front. At the public-school level, students in the province have scored extremely well in international tests, ranking at the upper end of the charts in both reading and mathematics. Yet, the Statistics Canada January 2002 survey, *Youth in Transition*, revealed that only 43 per cent of high school students move on to post-secondary education – the lowest rate in Canada. And, while high-school drop-out rates have been following a downward track, they remain above the national average. These figures highlight Alberta's reliance on immigration for its pool of highly-skilled workers.

One major culprit for the low enrollment rate is the sharply increasing cost of post-secondary education. Over the past decade, Alberta universities and colleges have doubled tuition fees, but this increase has only partially offset cuts in grants, leaving overall per-student funding down in real terms. Then, it is hardly surprising that student debts have skyrocketed, with the Alberta Ministry of Learning reporting an average student debt on graduation of $18,000 in Alberta. And with a number of post-secondary facilities still feeling the effects from a long period of government cutbacks – as evidenced by recently-reported budget deficits at the University of Calgary and Grant MacEwan College – the upward pressure on tuition fees is unlikely to abate soon.

Research and development spending is another area of vulnerability. As mentioned earlier, the Corridor is home to several excellent centres of research, most notably the Universities of Alberta and Calgary. Since 1994, University of Alberta Research Services reported that the university conducted $194 million in industry-sponsored research, $22 million in licensing royalties, and currently has 47 active spin-off companies. At University of Calgary, there have been 398 licenses negotiated, resulting in a number of highly prominent companies such as Cell-Loc Inc. and Living World Education. As well, there are a number of other groups that support and fund research, including Alberta Research Council, Edmonton Capital Region Innovation Centre, and Calgary Innovation Centre.

VENTURE CAPITAL SPENDING IN ALBERTA



Source: Canadian Venture Capital Association, Annual Statistical Reviews, 1996-2001; Statistics Canada, TD Economics

Canada's Top 100 R&D Spenders List 2002

Ranking	Company	Amount
1	Nortel Networks (Ont.)	$5.0 billion
2	JDS Uniphase (Ont.)	$504.6 million
3	Pratt & Witney (Ont.)	$440.0 million
31	Nova Chemicals Corp (Alta.)	$61.9 million
39	Syncrude Canada Ltd. (Alta.)	$48.3 million
Also ranked Alberta Companies:		
40	Alberta Energy Company Ltd.	
41	PanCanadian Energy Corporation	
43	Biomira Inc.	
58	Precision Drilling Corporation	
66	AltaRex Corp.	
82	Westaim Corporation	
96	Global Thermoelectric Inc.	
99	Suncor Energy Inc.	

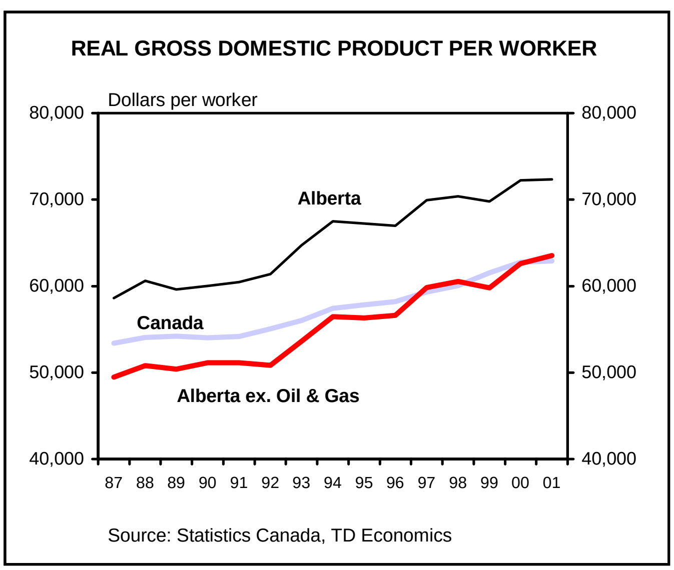
Source: Research Infosource Inc., TD Economics

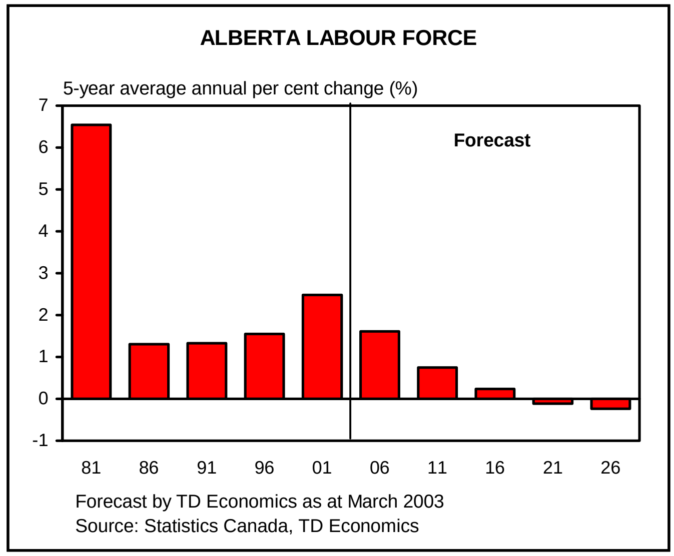
Still, overall spending on research and development (R&D) as a share of GDP in Alberta stands at roughly half the level recorded in Canada. Only 10 Alberta companies made the list of Canada's Top Corporate R&D Spenders in 2002, with nobody placing in the top 30.[16] And, while there have been a number of successes in commercializing new research in the Corridor, a large share has been licensed abroad, leaving the lion's share of the benefits to accrue to other countries. But, levels of funding are not the only ingredient to achieving success on this front – without a high quality of management, efforts of taking new products to market will probably fall dead in their tracks.

Research has shown that a plentiful supply of venture capital is a major driver of innovation. And, here again, the region is falling short, with Alberta accounting for a paltry 2-6 per cent of annual Canadian flows of venture capital.[17] One factor that has been put forward to explain Alberta's weak supply is that the province is not generating a sufficient flow of deals outside the energy sector to warrant the establishment of venture capital funds in the province. Moreover, with a few notable exceptions, trusteed pension funds appear to be either extremely wary or unknowledgable about venture capital and other types of private equity investment. On a bright note, recent changes by the federal government in its 2003 budget, including increasing rollover provisions for investors, should provide some support to venture capital flows across the country.

Over the past decade, a number of city-regions in North America have established research alliances to bring together R&D activities in their universities, colleges, teaching hospitals, labs and research-based companies. One notable example is Georgia Research Alliance (GRA), which was formed in Atlanta in 1990. Through the collaboration efforts, the GRA was able to reduce the labour and capital costs of research, spawn high-tech firms and lured world-leading scientists to its research institutions. Such an alliance provides a number of advantages, including lowering costs for R&D costs, and raising venture capital.

The province's high productivity performance has been a major driver of living standards in recent years. But, a closer look reveals that it rests on a shaky foundation.





Specifically, if the highly-efficient oil and gas sector is stripped away, average productivity in Alberta is only slightly higher than in other Canadian jurisdictions and below levels recorded in the United States. Investment in education, training and innovation in the province will be a vital step to enhancing productivity levels right across the Corridor's economy, and speeding up the process of diversification. And, while post-secondary may be the main hurdle at the moment, the government needs to focus on all levels. Canadian studies show that the largest public return from education stems from high-school completion.

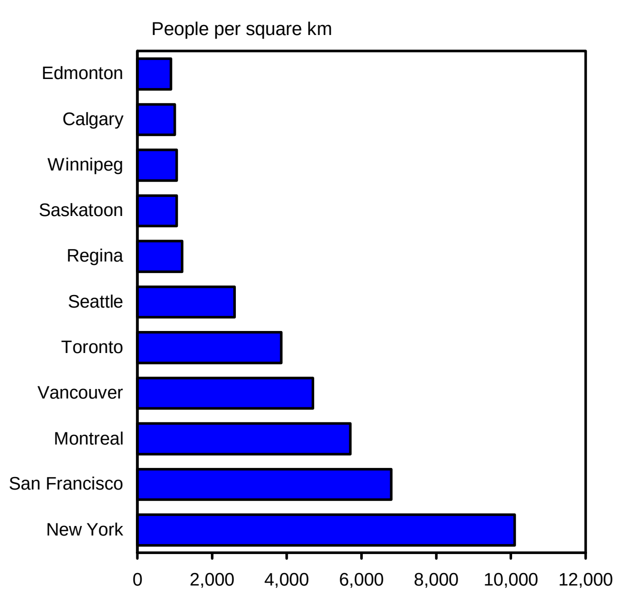
Challenge 3: Labour shortages

Shortages of labour continue to pose a major challenge for the region's economy. In recent years, construction, oil and gas, and health care have all been identified as areas reporting hiring difficulties. And, this challenge is unlikely to dissipate any time soon, as the Corridor's unemployment rate likely remains below 5 per cent on average – and for some industries, less than 3 per cent – over the 2003-05 period. Furthermore, unemployment rates could head even lower if the rate of migration into the region simmers down sharply from its recent frenetic rate, robbing the region's economy of much-needed skilled labour.

Further down the road, the region's labour supply will come under increasing downward pressure from an aging population. And, while the average age of retirement in Alberta is higher than in other provinces, a large number of Albertans are still opting to retire early – particularly in the education and social services sectors. [18] For example, more than 60 per cent of teachers retire at the age of 55 years. More troubling, under the assumption that current labour-market participation rates prevail, Alberta's labour force could actually begin to fall by the middle part of the next decade – a far cry from the average annual growth rate of 2 per cent posted over the past 10-year period.

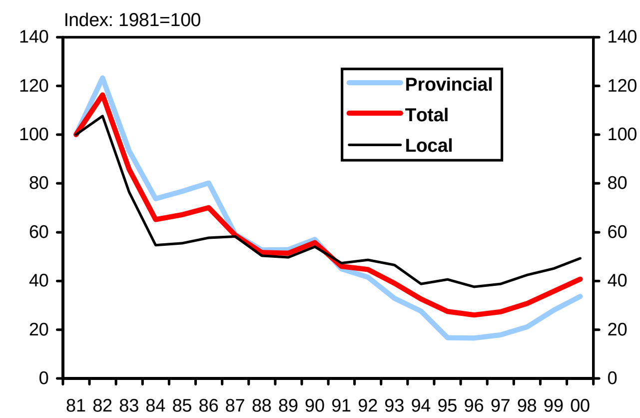
The Alberta government has been working with the province's sector councils to address short-term needs of sectors such as construction and oil and gas, and has recently signed an agreement with the federal government that will enable it to fast-track immigration of skilled workers in as little as four months. Both of these actions should provide some near-term relief. But, over the longer haul, the most effective way to minimize labour shortages is to take measures to boost the quality of the labour force. Raising education and training enrollment rates – and especially among the growing aboriginal population, which still lags behind in this regard – would go a long way toward accomplishing these ends. Moreover, companies should be encouraged to adopt more flexible work arrangements in an attempt to encourage older workers to remain in the labour market. Lastly, immigrant professionals and other skilled immigrants are running up against many barriers to entry into the job markets, most notably non-recognition of international credentials and experience by Canadian employers, regulators, and educational institutions. These obstacles must be addressed.

POPULATION DENSITIES



Note: These figures refer to city populations, not CMA or CMSA
Source: Canada West Foundation, Statistics Canada, TD Economics

REAL PER PERSON GOVERNMENT SPENDING ON CAPITAL



Source: Statistics Canada, TD Economics

Challenge 4: Urban Sprawl

In recent years, population and employment in the Calgary-Edmonton Corridor have expanded rapidly, first in the suburbs and then into rural areas. And, while it is natural for the population to increase more quickly in lower-density surrounding areas in metropolitan areas such as Calgary and Edmonton, the extent of the urban-suburban growth gap has been substantial over the past decade. The Canada West Foundation has shown that population densities in the cities Calgary and Edmonton – measuring roughly 1000 and 900 persons per square km, respectively – ranked well down on the list of the major Canadian and U.S. urban centres.[19] Developers are absorbing rural lands at such a fast clip that Alberta Agriculture recently cited development along Highway 2 as the largest pressure facing agricultural lands.

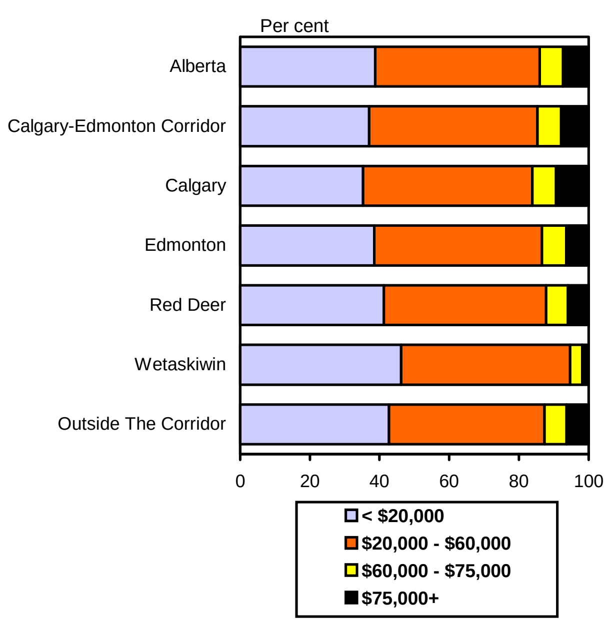
The adverse impact of sprawl on a society is considerable. Because public transit is relatively expensive in low-density suburban areas, sprawl contributes to increased reliance on roads, worsening overall transit problems, and increased congestion and pollution. The 2001 Census reported that 13 per cent of Calgary residents and 9 per cent of Edmonton residents rely on public transit to commute to work, well below the 19-per-cent level recorded in Ottawa, a city with a similar population size. And, while traffic congestion in medium-sized cities such as Calgary and

Edmonton remains nowhere near that experienced in bigger cities such as Toronto and Montreal, the worsening trends of gridlock are worrisome. In fact, residents of Calgary have already indicated that traffic gridlock is their number one concern.

Challenge 5: Infrastructure bursting at the seams

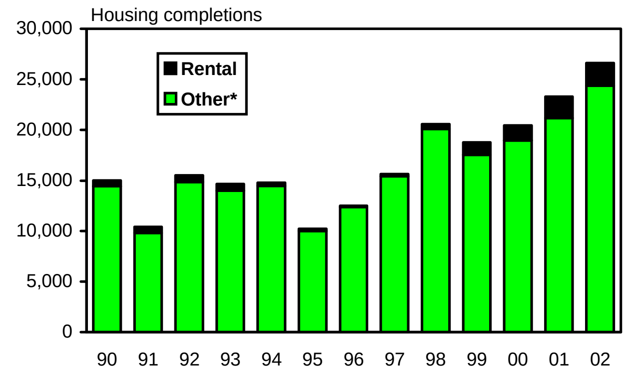
The impact of the recent sizzling growth is beginning to place severe strains on the region's physical infrastructure, much of which was put in place in the 1960s, 1970s and 1980s. And, while the bumps in roads and crumbling sidewalks in some areas may be most visible to the region's residents, the need to build extends to virtually all types of infrastructure, including transit, water, waste water, bridges and buildings. Unfortunately, there are few studies that estimate the overall investment required to rehabilitate the aging infrastructure and to support its growth. The Alberta government has suggested that its own backlog of capital spending projects currently stands at roughly $7 billion. The City of Edmonton went a step further by estimating its 10-year infrastructure gap at $3.2 billion, with $1.2 billion representing the existing gap and a $2 billion price tag to finance future rehabilitation and growth. Although the city of Calgary has not released detailed figures on its overall gap, it did note in its submission to the Alberta Future Summit that over $250 million of high priority capital projects associated with infrastructure rehabilitation cannot be funded over the next five years. This does not take into account the existing backlog or new funding for growth.

PAID WORKERS BY WAGE AND SALARY GROUPS IN 2000



Source: Statistics Canada, TD Economics

ALBERTA'S HOUSING COMPLETIONS BY INTENDED MARKET
Centres with Population > 10,000



* Include homeownership, condominium and cooperative
Source: Statistics Canada, TD Economics

While the strains on the infrastructure foundation in the Corridor may be tolerable at the moment, the economic and social cost of not replacing the infrastructure will begin to mount quickly, weighing on the quality of life of the residents. An eroding transportation system and congestion could soon lead to costs in the hundreds of millions of dollars in lost time and impeded trade flows, not to mention an increasing toll on the health of the residents. Rapid growth and development, combined with global warming, are placing tremendous pressure on the quality and availability of water in the Corridor, which increasingly threaten to act as a brake on future expansion. Meanwhile, competing jurisdictions that faced more difficult predicaments, such as those south of the border, have begun to take steps to re-invest in their infrastructure.

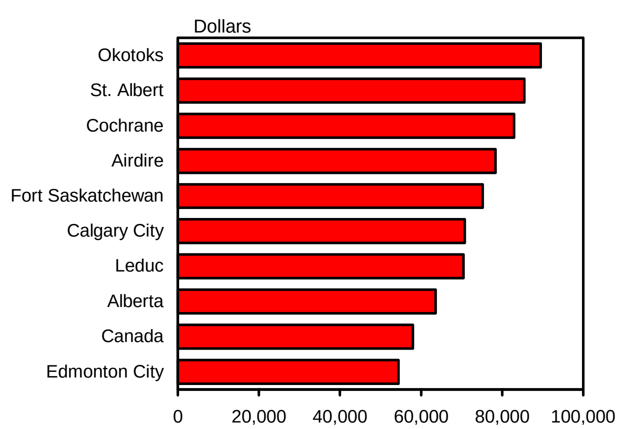
Challenge 6: A growing gap between haves and have-nots

The economic boom over the past decade has led to declining rates of poverty and numbers receiving social assistance in the Corridor. At the same time, however, there is evidence that the rising tide has not lifted all boats equally in the region. Although real average earnings in Calgary, Edmonton and Red Deer rose by 2 to 3 per cent per year in the 1995-2000 period, this appeared to be more attributable to a hefty increase in the number of individuals earning $60,000 or more, with Calgary posting the largest share of high income-earners (those earning over $100,000) among Canada's cities.[20] Not surprisingly, poverty remains the worst for single-parent families. And, those who remain on welfare have been hit particularly hard. Not only are rates for single parents with one child the lowest among the provinces, but they have been faced with rapid increases in prices. As a result, welfare income as share of Statistic Canada's low income cut off (LICO) in Alberta has fallen to 52 per cent from 66 per cent in the mid-1980s.

There is an increasing need for affordable housing in the Corridor, with the Edmonton Coalition of Homelessness estimating as many as 6,000 units are required in that city alone. The total supply of homes has increased sharply in recent years, led by the boom in homebuilding activity. Yet, with most multiple-unit building in the form of higher-end dwellings, and the stock of rental properties under downward pressure from conversions to condominiums, the supply of rental housing has been falling. In fact, as many as 10 per cent have been taken off Calgary's housing market since 1994 alone. As a result, average rents for a two-bedroom apartment in Calgary and Edmonton, after racing ahead over the past half decade, now stand at $800 and $710, respectively – amounts way out of reach for families earning less than $20,000. The number of individuals using emergency shelters has also jumped over the past few years in the Corridor, and by as much as 34 per cent in Calgary.

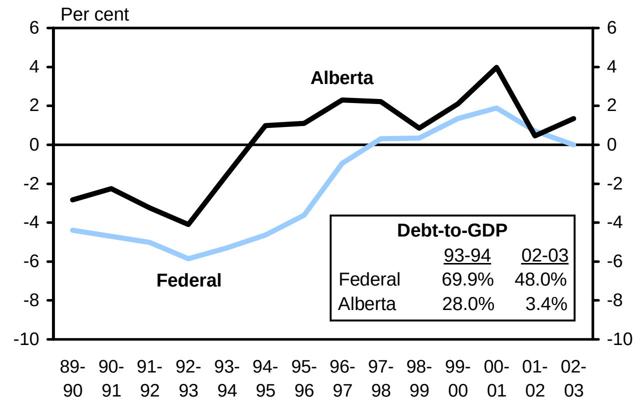
There have been some positive developments on this front. Last year, the federal government and Alberta signed a $67.2 million deal to provide affordable housing, with both announcing top-ups to their prior funding commitments in their 2003 budgets. Still, the total sum set aside will only go part way in meeting existing requirements. As well, the federal government has pumped considerable new amounts into fighting homelessness. On the welfare front, the Alberta government commissioned a report that concluded that welfare programs in the province often discourage individuals from working and are overly complex. In March 2003, it passed Bill 32, that will replace three existing supports programs, and simplify the process, and followed that up in its 2003 budget with a modest increase in benefits for clients with children and those not expected to work.

AVERAGE HOUSEHOLD INCOME IN 2003



Source: FP Markets (Canadian Demographics 2003), TD Economics

SURPLUS/DEFICIT-TO-GDP RATIOS



Source: Federal and Alberta budgets, TD Economics

TIME TO TAKE ACTION

Sustainable municipal finances a key ingredient

Challenges facing Canada's urban areas vary from region to region, but there exists a common thread. Communities are in need of new waves of investment in order to ensure that standards of living continue to grow in the future. However, municipalities themselves – who have seen revenue growth not keep up with rising demands resulting from urbanizaton and rapid population increases – are in no position to deliver. This characterization could not more aptly apply to the municipalities making up the Calgary-Edmonton Corridor, given that the region's growth rate has been unmatched nationally.

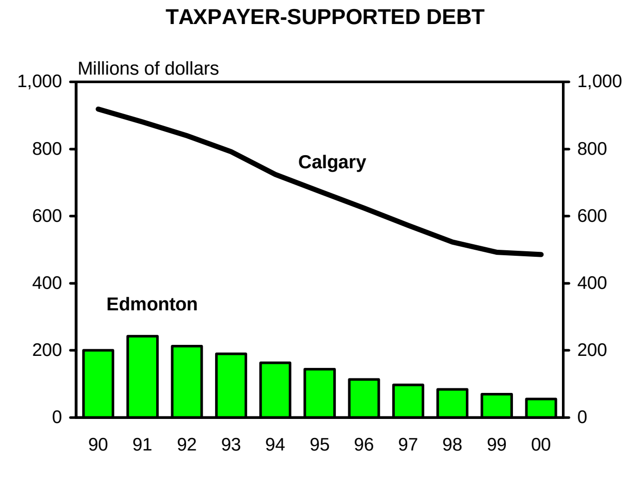
What sets the Corridor apart from other Canadian urban areas, however, is that the pieces are now in place to affect change, and sooner rather than later. The medium-term economic outlook couldn't be brighter. And, the province of Alberta – who holds considerable interest in the fortunes of its cities through both fiscal and jurisdictional power – enjoys the strongest fiscal position among provincial governments.

The fiscal challenge in the Alberta context

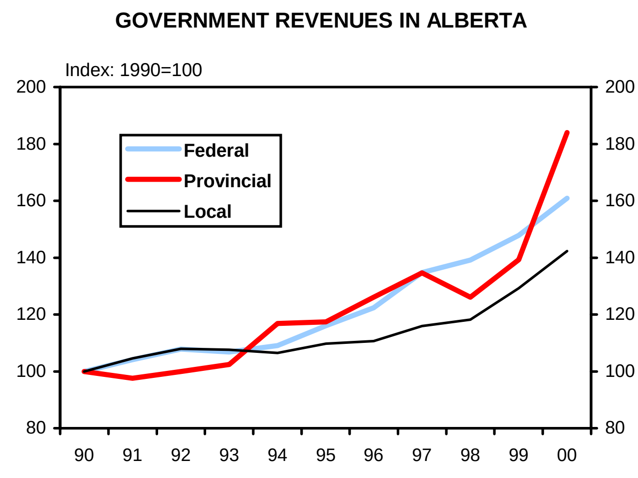
We first place the fiscal challenge facing municipalities in an Alberta context. As was the case in many other regions of Canada, the fiscal woes of the province's local governments began to mount in the early-1990s, when the federal and Alberta governments moved to rein in large budget shortfalls. As part of their plans to cut back spending broadly, these governments passed some of the pain down the line in the form of reductions in federal and provincial transfer payments. Unfortunately, for local governments in Alberta, there was nobody left to hand the ball to, so they suffered the heaviest blow. Moreover, municipalities in Alberta were required to take on added responsibilities due to offloading in areas such as transit, police and affordable housing.

At the same time, the deficit-elimination efforts of the federal and Alberta governments received a huge shot in the arm from robust economic expansion over the past decade, which paved the way for sizzling revenue gains, and most notably of "growth-sensitive" income taxes. Although the Alberta government suffered from reductions in federal transfers under the Canada Health and Social Transfer (CHST), these cuts were more than offset by surging oil and gas royalty revenues. By the mid-1990s, both governments had moved back into surplus, and began to pay down debt. Alberta's record was especially impressive, racking up enough black ink to lower its debt-to-GDP ratio to a mere 3.4 per cent of GDP. And, if the $11.5 billion in Heritage Fund assets are included in the count, Alberta is the only province to enjoy a net asset position.

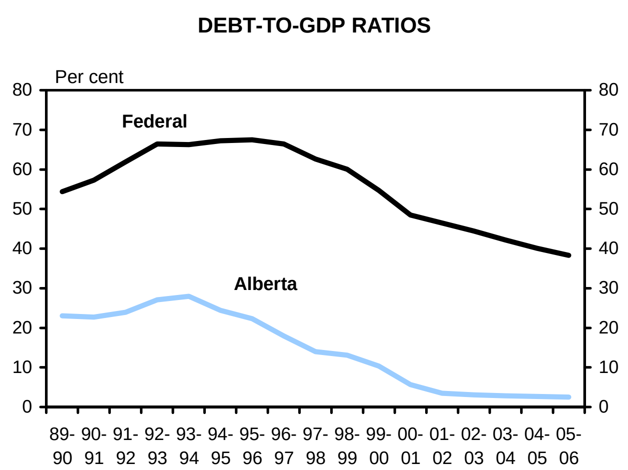
The economic boom over the past decade has also assisted the revenue coffers of municipal governments in the Calgary-Edmonton Corridor, as thriving real estate markets and new construction supported the take from property taxes and development charges. However, growth in municipal property tax revenues still failed to keep pace with inflation and population growth, with municipalities in-



Source: Canada West Foundation, TD Economics



Source: Statistics Canada, TD Economics



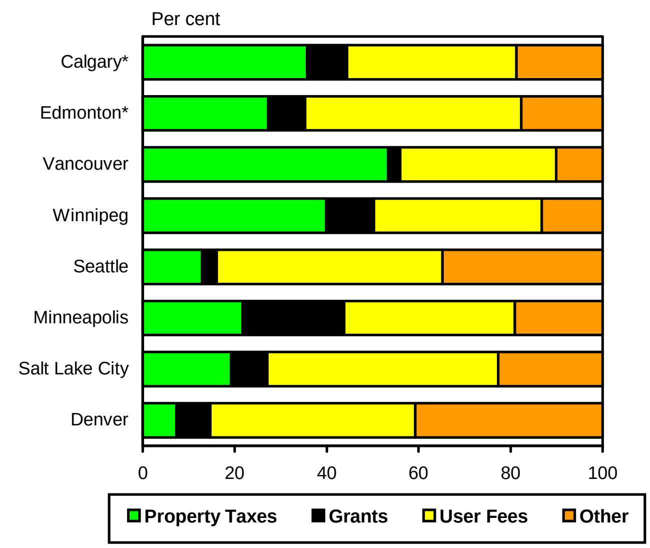
Source: Statistics Canada, federal and provincial budgets, TD Economics

How do municipal revenue structures in Calgary and Edmonton stack up?

Studies by the Canada West Foundation have shown that over the past decade, the municipalities of Calgary and Edmonton have shifted their reliance away from property taxes to user fees and other revenue sources.[21] In Calgary, business property taxes and other revenues (predominantly operating income from the utility ENMAX) have increased as a share of total revenues, while residential property taxes and operating grants have declined. In Edmonton, large drops in shares attributable to property taxes and grants have been offset by a higher reliance on all other revenues (utilities EPCOR and the EdTel Endowment Fund).

The Canada West Foundation has also carried out comparisons of revenue sources between Canada's western cities and U.S. cities.[22] Their research revealed that greater access to these other revenue sources have made Edmonton, and to a lesser extent Calgary, less dependent on user fees and property taxes than other Canadian western cities. However, in the North American context, Calgary and Edmonton still remain reliant on reliant on both of these sources when stacked up against their U.S. counterparts, who have greater access to general retail taxes, selected sales taxes and business taxes.

RELIANCE ON REVENUE SOURCES IN 2000



* Granted a portion of gasoline tax in mid-2000. Since 2000 did not represent a full year of the program, tax-sharing revenues are understated by 6-8 percentage points. As a result, shares of other revenue sources are somewhat overstated. Source: Canada West Foundation, TD Economics

creasingly turning to user fees to supplement revenue growth. Furthermore, the City of Edmonton enjoyed additional income from its EdTel endowment fund, which was established following the sale of EdTel to Telus in 1994, as well as EPCOR, which posted steady increases in operating income. Still, with conditional and unconditional grants from the provincial government cut dramatically over the past decade, total revenue growth of Alberta's local governments significantly underperformed that of both the Alberta and federal governments. In fact, measured on a three-year moving-average basis to smooth out some of the year-to-year fluctuations, total revenues at the municipal level climbed by 32 per cent over the 1991-2000 period, a fraction of the rates of 57 and 50 per cent recorded by the provincial and federal governments, respectively.[23]

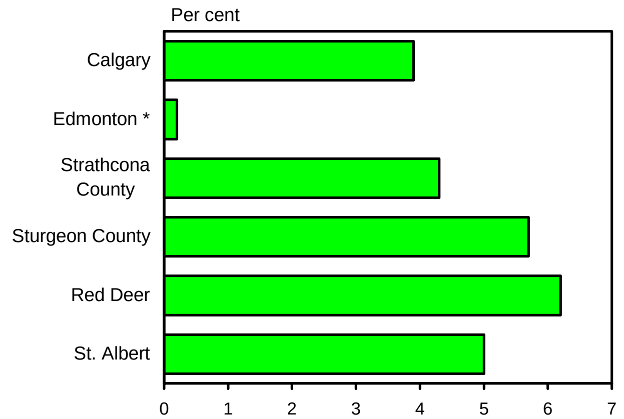
Meanwhile, some municipalities in the Calgary-Edmonton Corridor have opted to use up some of their limited fiscal room to pay down debt. In particular, Calgary and Edmonton – both facing high debt-loads at the beginning of the decade – implemented particularly aggressive strategies to reduce their debt burdens. Between 1991 and 2001, Edmonton reduced its taxpayer-supported debt to $55 million from nearly $250 million, while Calgary lowered its debt from $918 million to $485 million.[24] These actions have certainly helped to put their fiscal positions on a more sustainable footing by lowering debt-service burdens. And, despite recent increases, levels of both property taxes and user fees remain competitive vis-à-vis other jurisdictions.

More recently, the Alberta government has helped to ease some of the fiscal pressure on Calgary and Edmonton by implementing a new-revenue sharing arrangement. In March 2000, the Alberta government agreed to provide the cities of Calgary and Edmonton with a grant equivalent to 5 cents per litre of gasoline sold within their respective areas – an amount that the province intended to cut to 1.5

cents per litre in its 2002 budget, but owing to a swift negative response from the cities, never materialized. In its 2003 budget, the Alberta government confirmed that it would leave the 5-cent-per-litre arrangement in place until at least 2006.

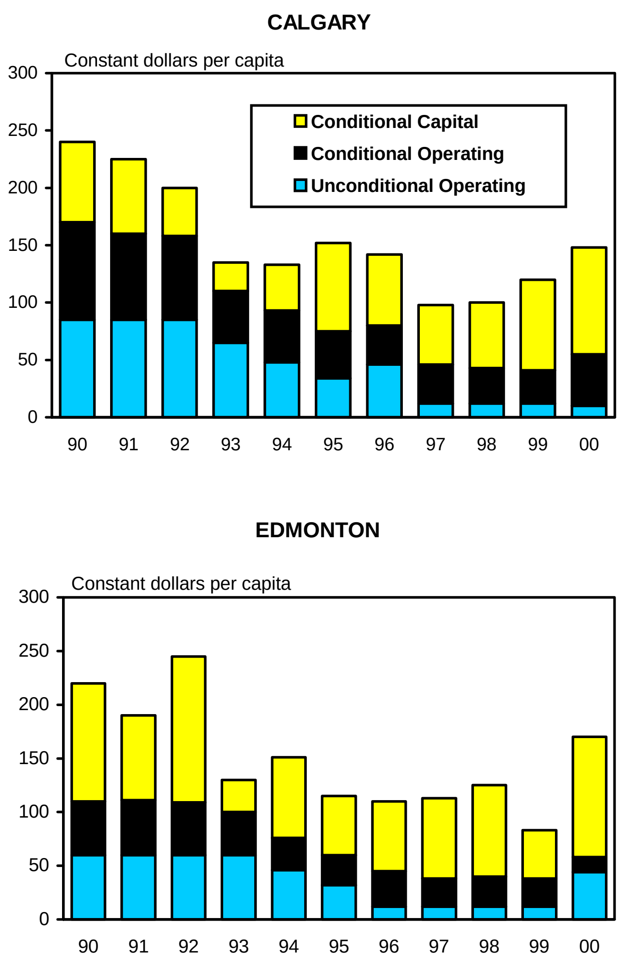
Notwithstanding the provincial government's about-face last year, the three-year old revenue-sharing arrangement – combined with the 1995 Municipal Government Act (MGA) – represented a big step forward in terms of provincial-municipal relations in Alberta. A highlight of the 1995 MGA was the provision of "natural person powers" to municipalities, which bestowed upon them essentially the same legal powers as other corporations or persons to conduct their day-to-day business without the need for specific administrative authority to be spelled out in the Act for every activity. For instance, acquiring property and entering agreements could be done without the need for specific provisions authorizing these activities. At the same time, however, municipal activities still remain highly regulated despite the granting of natural person powers. In other words, natural person powers do not give municipalities in the province increased jurisdiction, nor increased law-making or powers to tax, but did provide to them a higher level of "default" authority and flexibility regarding administrative or corporate matters.

PROPOSED/APPROVED RESIDENTIAL PROPERTY TAX HIKES IN 2003



* Beginning in 2003, city will move the cost of land drainage off the property tax bill. The cost of drainage will be $44 for the average household. Taking this into account would yield an increase of about 4.5 per cent; Source: TD Economics

CONDITIONAL OPERATING AND CAPITAL GRANTS



Source: Canada West Foundation, TD Economics

Municipalities in good fiscal shape, but at a cost

The local governments in the Calgary-Edmonton Corridor have moved into the new decade in solid fiscal shape. However, it has come at some price – namely a growing backlog of infrastructure projects, with a string of property tax hikes and user fee increases likely in store just to maintain service levels. In their 2003 budgets, most municipalities in the Calgary-Edmonton Corridor are poised to hike property tax rates by 3-5 per cent this year, while Calgary is looking at a plan to ramp up rates by a further 9 per cent over the next two years. What's worse, due to a combination of off-loading and increased restrictions for both the federal Employment Insurance (EI) and provincial welfare programs, municipal government fiscal positions have become more exposed to an economic downturn than a decade ago. Accordingly, when needs for social assistance sky-rocket during tough economic times, municipalities – and particularly Calgary and Edmonton where many of the social problems are concentrated – will be required to shoulder much of the burden.

TD's April 2002 report – a need for a new arrangement

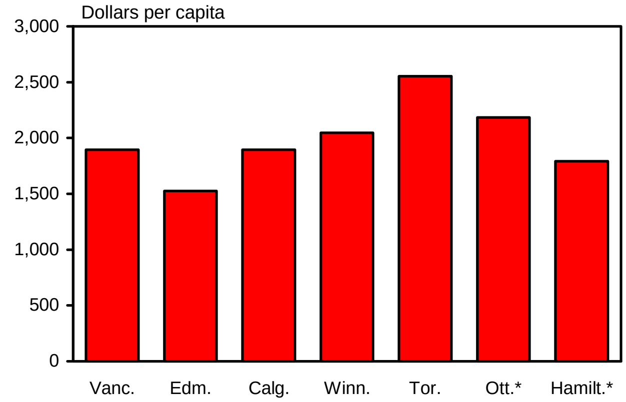
TD Economics April 22nd report, "A Choice Between Investing in Canada's Cities or Disinvesting in Canada's Future" represented a call for change. The study argued that many of Canada's municipalities are not making optimal use of their existing powers and tools. Even their main revenue-generator – the property tax – is not levied properly in many cases. However, cleaning up their own backyards will only do so much good in the face of escalating demands to replace eroding infrastructure, recent downloading, and an inadequately growing revenue base. We suggested a new revenue arrangement that respects the following criteria:

- provides long-term, reliable funding;
- provides more fiscal flexibility, including increased tools;
- raises accountability, is transparent, and administratively efficient.
- results in no increase in the overall tax take

The April 22nd study then looks at a number of new revenue options for municipalities, weighing off advantages and disadvantages of each. The first option – increasing federal or provincial grants to municipalities – could play a valuable role in helping local governments address their *existing* infrastructure gap, since new funding can be arranged in relatively short order. But, they fail miserably in the other areas. First, grants are weak in reliability, since they leave local governments at the whim of shifting priorities and fiscal fortunes at the federal and provincial level. And, second, they are poor in accountability, as funds are raised by one government and spent by another. Revenue-sharing arrangements (i.e., whereby the federal/provincial government apportions a part of a revenue source to municipalities) might be preferred to grants. But, even here, not only are they identical to grants, but the base can also grow slowly over time, as is the case with provincial gasoline taxes.

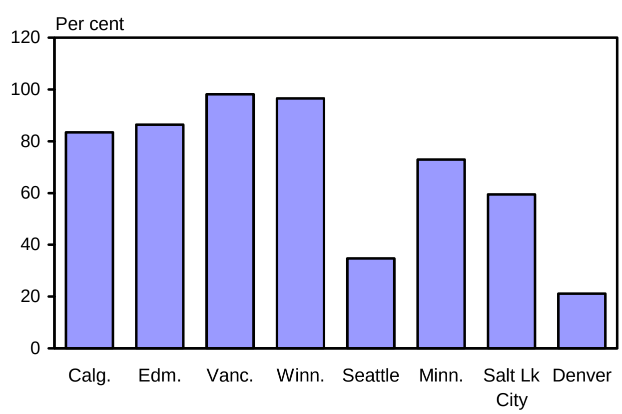
We concluded that it is better to provide municipalities with a revenue arrangement that provides greater flexibility, specifically more power to levy taxes, and in which local governments have control of rate-setting. From a purely administrative/cost standpoint, the tax should piggy-back off an existing provincial or federal tax. But, even then, care must be given to the choice of tax. We dismissed income taxes, since income is so highly mobile, instead favouring selected sales or excise taxes. At the same time, we recognized some of the pitfalls related to sales and excise taxes, including the border issue (i.e., the incentive to move economic activity outside the geographical area where the tax is imposed). However, the trend towards amalgamation and the creation of regional authorities across the country has helped to mitigate this problem by expanding the area within a tax could be applied.

TOTAL PROPERTY TAXES AND USER FEES IN 2001



* 2000 figures
Source: Dominion Bond Rating Service Ltd., TD Economics

PROPERTY TAX AS SHARE OF TOTAL TAX REVENUES IN 2000



Source: Canada West Foundation, TD Economics

Lastly, we pointed out that many advocates of a revenue-sharing arrangement over new taxation powers argue that this provides the best way to guard against an increase in the overall tax burden. However, regardless of which pocket the money comes from (i.e., federal, provincial or local), if one level of government spends more, other levels of government have to spend less, or the "one taxpayer" will end up paying more in taxes.

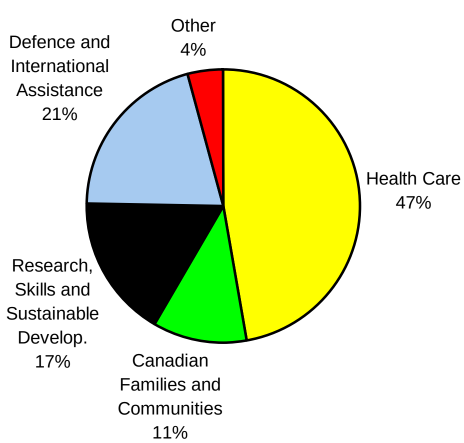
2003 federal budget – "a down payment"

Events in 2002 had raised expectations that municipal issues would feature prominently in the 2003 federal budget. Not only had the Prime Minister's Task Force on Urban Issues released its final report in November 2002 calling for more federal involvement in cities, the federal government made a special mention of the need to assist municipalities in its September 2002 Speech from the Throne. As the actual budget day approached in February 2003, however, it had become crystal clear that health care would dominate the agenda. And, as new spending measures were announced in a host of areas, including day care and national defense, help for municipalities had fallen down the priority list.

Still, the federal budget contained a number of measures that will assist municipalities in facing their huge demands:

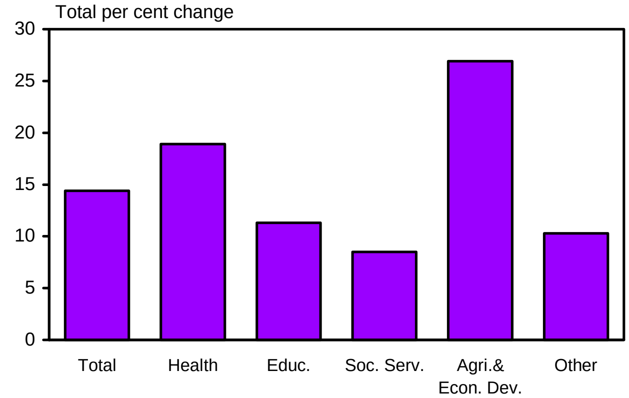
- 10-year, $3-billion commitment for infrastructure, including $1 billion for municipal infrastructure;
- An additional $270 million over two years to help fight homelessness;

SPENDING INITIATIVES IN THE 2003 FEDERAL BUDGET



Total spending initiatives: $17.4 bn (2002-03 to 2004-05)
Source: Department of Finance Canada, TD Economics

ALBERTA 2003 BUDGET
Spending Growth by Function 2002-03 to 2005-06*



* 2005-06 forecast levels compared to those planned in 2002-03 budget
Source: Alberta government, TD Economics

- An additional $320 million over five years to enhance existing affordable housing agreements with the provinces;
- $256 million over the next two years to extend the government's housing renovation programs to help preserve the existing stock of affordable housing.
- Increased funding for the National Child Tax Benefit, university research, for Kyoto Accord implementation and for aboriginals, a large share of which will ultimately be spent in urban communities.

In any event, the federal government's "cities agenda" got an immediate failing grade from most municipalities. Absent was any promise to fully exempt local governments from GST paid by them, or delivering a share of the federal gasoline tax. Furthermore, the total amount set aside for infrastructure works out to be an average of $300 million per year, considerably less than the $1 billion per year that the federal government has effectively been spending on infrastructure in recent years. (If municipalities in the Corridor get their per-capita share, it works out to be about $250 million over 10 years, or $25 million per year).

Alberta government changes focus in its budget

The disappointingly modest attention paid to the plight of municipalities in the 2003 federal budget increased pressure on the Alberta government to provide assistance. And, in some respects, it didn't disappoint, announcing significant new monies for infrastructure, along with funding for its other two major priorities – health care and education.

The budget marked a shift in vision for the Alberta government, which had much of its attention focused on eliminating its debt in recent years. Some of the key measures included:

- a new three-year capital plan that aims to earmark a total of $5.5 billion over three years to projects including the provincial highway network, health and education facilities and equipment, water and waste water management and housing. Some of these projects were deferred in the 2002 budget.
- Of the $5.5 billion tally, $900 million will come in the form of municipal transportation grants, which in turn, primarily represents an extension of the existing arrangement to provide 5 cents per litre in transfers to Calgary and Edmonton and $60 per capita to other municipalities for another three years.
- About one-third of the capital plan will be funded by alternative financing, such as public-private partnerships, debt financing or capital leases.

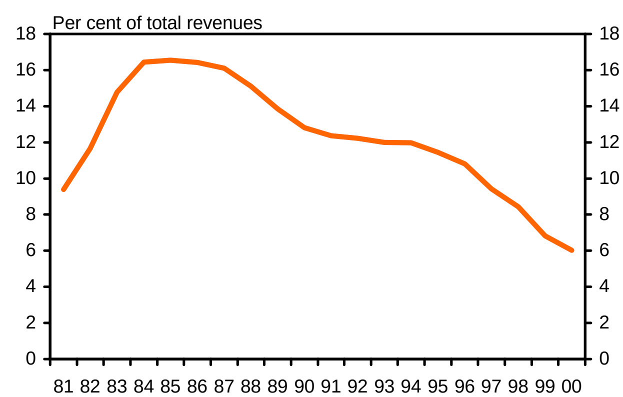
The government also altered its budgeting process by establishing the new sustainability fund. Beginning in fiscal 2003-04, the government will base its planning decision for the year ahead using an estimate of the resource royalties the lower of $3.5 billion or the 3-year average (currently standing at about $7 billion). Any year-end surpluses will be transferred into the new fund, and withdrawals made in those years when resource revenues fall short of $3.5 billion, when resource revenues are greater than $3.5 billion while other revenue is less than budgeted, or in financing disasters. Based on forecasts by TD Economics, the fund is on track to accumulate a sizeable balance over the next five years – in excess of $8-10 billion – that can be used for debt reduction, new capital spending, or other improvements in the government's balance sheet.

Where do recent budgets leave us?

Certainly, the moves presented in the 2003 federal and Alberta budgets go part way towards improving the *reliability* of municipal revenue flows in the Corridor. The new three-year Capital Plan announced by the Alberta government, combined with the additional federal infrastructure money, will help to address a meaningful share of the existing infrastructure gap, and take some of the immediate stress off municipalities. As well, the new budget measures presented will better protect local governments from sudden reductions in grants. In particular, the 10-year commitment by the federal government is certainly preferable to its recent practice of introducing a new program every few years, while the Alberta's government's move to establish a sustainability fund lowers the risk that the province takes unilateral action to cut municipal transfer payments in order to balance the books.

Still, this year's budget season has fallen well short in other respects in moving municipalities in the Calgary-Edmonton Corridor towards a more sustainable funding arrangement. Notably, the traditional approach of providing local governments new funding assistance in the form of grants/revenue-sharing remains firmly entrenched. Despite their shortcomings, provincial or federal grants will generate few immediate cries of anguish from municipal politicians, given their immediate urgent needs and since they can spend money raised at another level. However, grants not only lead to weak accountability, but they represent a roadblock standing in the way of local governments tackling their own priorities most effectively. Consider the infrastructure programs established by the federal and provincial governments. Ottawa, for instance, has indicated that it is interested in spearheading the construction of a high-speed train through the Corridor, which would be funded through the infrastructure program. But, this raises the question of whether this project would rank as a top priority in, say, the municipality of Leduc or Strathcona County. Both the federal and Alberta governments will ultimately dictate where the substantial new amounts for

INTEREST ON PUBLIC DEBT: ALBERTA'S LOCAL GOVERNMENTS



Source: 2001 Provincial Economic Accounts, TD Economics infrastructure will be earmarked over the next several years.

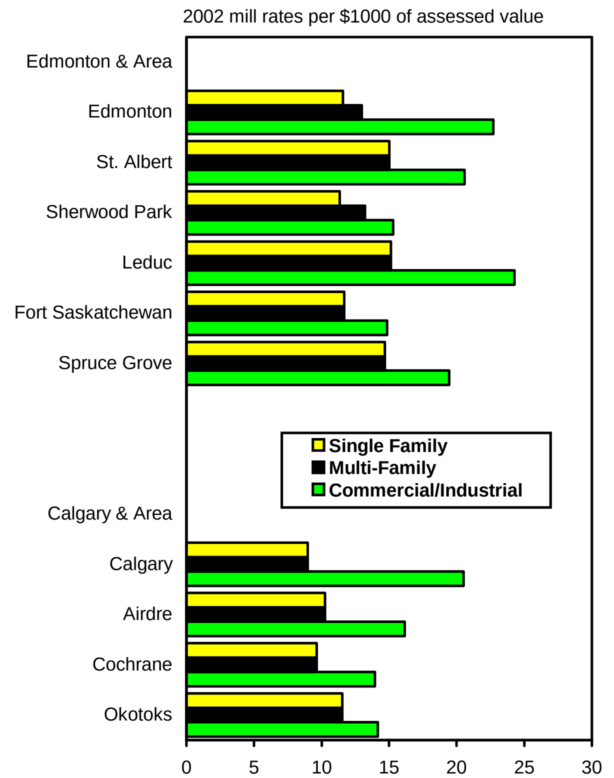
Above all, there were no new revenue sources or tools added to municipalities' arsenal. Instead, the provincial government's decision to *raise* the education portion of property taxes in its 2003 budget will put pressure on local governments to significantly restrain increases in municipal property taxes over the near term. And, although we applaud the provincial government's promise to amend the Municipal Government Act (MGA) to permit municipalities to levy development charges in order to offset the costs local transportation, this merely legitimizes a practice that had already been followed in some parts of the Corridor.

The next step ... new municipal powers to tax

Looking ahead, the Alberta government needs to provide municipalities in Calgary-Edmonton Corridor and the rest of the province with some additional tax powers. In order to ensure that the overall tax burden doesn't rise, the provincial government would need to free up the fiscal room by lowering its taxes.

There is certainly potential to build on the existing arrangement that provides Calgary and Edmonton with 5 cents per litre of the 9-cent-per-litre provincial gasoline tax on sales within these cities' boundaries. This deal currently yields about $85 million per year for Calgary and $65 million per year for Edmonton. For instance, the province could agree to lower its gasoline tax by 5 cents per litre, and municipalities in Alberta simultaneously be given the authority to levy their own gasoline tax of up to 5 cents per litre. And, while this new arrangement would do little to improve the bottom line of Calgary and Edmonton, the provincial government could consider a larger tax-point transfer (say, 7 cents per litre). Furthermore, the provincial and municipal governments should work with the federal government with the goal of achieving a similar arrangement with respect to the federal gasoline excise tax (currently at 10 cents per litre). Lastly, this new revenue source could be supplemented by new powers for local governments to levy taxes on areas such as hotels and lodging, restaurant meals and car rentals, although each should be looked at closely in terms of its revenue-raising capacity vis-a-vis its costs of implementation. The hotel tax could "piggy back" off the existing provincial tax. One advantage in these levying taxes on hotels and lodging is that visitors, who use municipal services but do not pay property taxes, would bear a large share of the burden.

PROPERTY TAX RATES



Source: Colliers International Realty Advisors, TD Economics

Another creative proposal put forward by Professors Ron Kneebone and Ken McKenzie at the University of Calgary is for the introduction of a modest sales tax on a broad consumption base at the municipal level of, say, 2 per cent that would be levied across the province, with funds being distributed on a formula basis, or allocated to revenues on the basis of sales, or a combination of both.[25] To offset the impact on taxpayers, the province could reduce personal income tax by the same amount. Although the people of Alberta may not support the idea of introducing a sales tax, this proposal has some merit. Not only would it represent a shift towards greater accountability, but it would increase the competitiveness of the province's tax structure, since sales taxes impose the lowest cost on economic growth among the tax sources.

Whichever way the province moves, the most important thing to remember is that municipalities use an appropriate balance of tax sources. The property tax may not grow in line with needs, but it is a stable source of revenue. On the other hand, sales taxes tend to swing sharply based on spending patterns. In the United States, after reaping the rewards in the late 1990s, municipalities that relied heavily on growth-sensitive taxes are now feeling fiscal pressure resulting from the economic weakness south of the border. However, there is a good argument that Alberta's municipalities are still too dependent on the property tax.

Municipalities not off the hook

Even in the event that increased powers to levy taxes are handed to the region's municipalities to help cope with their numerous challenges, this does not negate the need for local governments to better manage their own affairs. Better use of strategic debt, fixing policies that encourage urban sprawl, and improved cooperation across municipalities are three specific areas that should be addressed in the region. More broadly speaking, it is vital that municipal governments put more energy into routinely – and thoroughly – assessing which services should remain areas of core responsibility and which should be provided through alternative service delivery.

Strategic use of debt can be useful

There appear to be opportunities for municipalities to make better use of borrowing to finance infrastructure. There is a lot to be said for maintaining a low debt burden, especially when facing future pressures related to an aging population or an uncertain oil and gas royalty stream. However, even after cutting debt sharply through the mid-to-late 1990s municipalities in the Corridor appear hesitant to take on new debt for capital projects, likely because the unreliability of their revenue stream in servicing the borrowing. However, Edmonton is currently looking at borrowing to proceed with capital projects for the first time since 1987.

Any talk of increased use of borrowing in the Corridor is likely to come hand in hand with requests for the province to permit the use of tax-exempt bonds, an approach implemented widely in the United States for financing municipal infrastructure and which are now beginning to create some interest in Canada. These debt instruments represent a cheap form of financing for local governments, since interest income is exempt from federal and or state income tax. However, as we argue in the April 22, 2002 TD Economics Report, *A Choice Between Investing in Canada's Cities or Disinvesting in Canada's Future*, these instruments are flawed. For one, they are regressive in nature. In competitive capital markets, the prices of TEBs are set at a level that effectively equates their after-tax yield with the before-tax yield on competing instruments, with the equilibration occurring at the average marginal tax rate. Thus, the bulk of the benefits accrue to individuals with above-average marginal tax rates. Second, they effectively represent a grant from the federal and/or state government to the city, thereby providing benefits to one segment of the population while tapping the general population for the cost.

Municipalities could do more to curb sprawl

We noted earlier that urban sprawl exacts high costs on an economy and society. Yet, by not doing a better job implementing land-planning strategies and aligning property taxes with the cost of providing services, municipalities in the Calgary-Edmonton Corridor are encouraging sprawl. In some cases, such as the municipalities of Edmonton and Sherwood Park, property levies on multi-residential properties are high relative to single-family dwellings, while commercial properties in the downtown are overtaxed with respect to properties in surrounding areas. Moreover, municipal land-planning strategies could be improved. In 1996, the provincial government released a new policy aiming to reduce sprawl, but critics argue that the policies are being ignored in many cases, as cities are lured by the increased revenues resulting from development on "greenfields" rather than "infill" sites. What's more, the pressure on the provincial and municipal governments to invest in highways and roads to improve traffic congestion, especially on the fringe of these cities, could actually result in increased sprawl over the longer run. These pressures must be carefully balanced with the need to invest significantly in transit systems to in order to keep pace with the region's growth. And, while traffic levels in the Corridor may not be high enough to make road tolls financially viable, they could be a option in the near future. Road tolls would accomplish the multiple aim of reducing urban sprawl, making public transit more attractive to the public, and increasing revenues that could be re-invested back into transportation.

Increasing cooperation crucial

Historically, cooperation between municipalities in the Calgary-Edmonton Corridor has been one of the region's weak spots. But, while many observers in Canada might be quick to single out the traditional battles between the two largest municipalities in the Corridor, Calgary and Edmonton, the absence of collaboration within the Edmonton area (i.e, Capital Region) region itself has been equally as troublesome. A major differentiating factor between the Calgary and Edmonton economic regions is in the system of governance. Calgary has adopted the uni-city model, while the City of Edmonton, which comprises about two-thirds of the Edmonton Area, is made up of a total of 22 municipalities. And while it is difficult to argue that the fragmented governance structure in the Edmonton Region and the resulting difficulties in seeing eye to eye on regional issues in the past has been the number one factor behind the economic underperformane of Edmonton vis-a-vis Calgary during recent decades, it has likely been a negative influence.

Encouragingly, cooperation with the Corridor has been on a steadily improving trend in recent years. Calgary and Edmonton teamed up last year to fight the Alberta government's decision to reduce the cities' share of gasoline tax in its 2002 budget. And, within the Edmonton Area, the Capital Region Alliance was established about five years ago to co-ordinate region-wide planning strategies. Since then, common ground has been reached within the Alliance on a number of issues, including the all-important area of regional transportation.

Nonetheless, the extent of collaboration across municipalities in the Corridor remains in the early stages. It is crucial that all parties recognize the handsome economic returns to effective region-wide coordination and planning. And, indeed, higher levels of consensus-building will become even more essential in the Capital Region if municipalities receive increased authority to levy taxes.

Private sector needs to get more involved

The weak record of the private sector in civic issues represents another impediment towards improving the economy and quality of life of the residents. In the Calgary-Edmonton Corridor, the private sector as an entity is not actively involved in civic matters. And, the level of community giving appears to have room for improvement. For example, the median charitable donation of individuals in Alberta remains in the middle of the provincial pack, despite the fact the above-average growth in incomes in the province. Contrast this with the situation Stateside, where the participation of the private sector has been a common thread, and a critical factor, in the success of virtually all of the U.S. Cities that are undergoing a renaissance. This goes far beyond getting involved in public-private-partnerships where there are commercial rates of return to be earned. Case in point is the initiative – CEOs for Cities – that partners the public and private sectors with municipalities and community groups. That group serves as a vehicle for discussion, debate and action on issues affecting cities, and which has a voice that resonates across the country.

Wanted: a united front

With the region's economy the envy of Canada, there is an enormous opportunity to put into place the changes today that will ensure increasing prosperity down the road. It is clearly better to act from a position of strength, rather than follow the lead of U.S. cities, which waited until crisis situations emerged in the 1970s and 1980s before moving into high gear. But, some lessons from the U.S. experience may provide some helpful guidance. Most importantly, that the ability of U.S. cities to turn the corner was driven by a united front of all levels of government and the private sector.

Derek Burleton, Senior Economist
416-982-2514

With research assistance from:

Mimi Curtis-Irving, Economist
416-944-5730

Iva Philipoff, Administration Officer
416-982-8066

ENDNOTES

1. Estimates of GDP data for the Corridor are those of TD Economics using provincial figures from Statistics Canada and CMA data from the Conference Board of Canada.
2. Statistics Canada, *Provincial Economic Accounts*, 2001.
3. Alberta Transportation, *Advanced Traveller Information and Traffic Management Systems Blueprint for Highway 2 Between Edmonton and Calgary*, April 2002.
4. William M. Mercer, *World-Wide Quality of Life Survey*, 2003.
5. KPMG, *Competitive Alternatives Study, Comparing Business Costs in North America, Europe and Japan,* 2002.
6. Statistics Canada, *Supply and Disposition of Crude Oil and Equivalent*, Table 126-0001.
7. National Resources Canada, *Production of Canada's Leading Minerals.*
8. Jack Mintz and Sergio Traviza of Ontario Government's Institute of Competitiveness and Prosperity have shown that Alberta's effective marginal tax rate on capital (i.e., marginal tax rate where all costs are taken into account including business inputs and depreciation) is 16.3 per cent, below rates of 19.2 and 23.7 per cent in Quebec and Ontario, respectively, and slightly lower than the U.S. average rate of 16.8 per cent.
9. KPMG, *Competitive Alternatives Study.*.
10. Data in this section is primarily drawn from Statistics Canada's 2001 Census.
11. Transport Canada, *Trade and Transportation Corridors, Discussion Paper;* June 1999.
12. Meric S. Gertler, Richard Florida, Gary Gates, and Tara Vinordrai, *Competing on Creativity: Placing Ontario's Cities in North American Context*; November 2002.
13. Figures provided by the Conference Board of Canada.
14. Estimate is that of TD Economics.
15. Alberta Economic Development, *Tourism in Calgary & Area;Tourism in Edmonton & Area*, September 2002.
16. Research Infosource, *Canada's Top 100 Corporate R&D Spenders List 2002*, July 2002.
17. Alberta Economic Development, *Access to Equity Capital Issues: Equity Capital and the Commercialization of Early Stage Technology in Alberta,* April 10, 2002.
18. Allan Chambers, "We're younger and will work longer: Alberta doesn't face shortages yet, but we should get ready," Edmonton Journal, February 12, 2003.
19. Liam Stone and Roger Gibbons of Canada West Foundation, *Tightening Our Beltways: Urban Sprawl in Western Canada; A Western Cities Project Discussion Paper*; October 2002.
20. Statistics Canada, *Census 2001*.
21. Casey Vander Ploeg of the Canada West Foundation; *Dollars and Sense: Big City Finances in the West 1990-2000*, October 2001.
22. Casey Vander Ploeg of the Canada West Foundation; *Big City Revenue Sources: A Canada-U.S. Comparison of Municipal Tax Tools and Revenue Levers*, September 2002.
23. Statistics Canada, *Provincial Economic Accounts, 2001*.
24. Casey Vander Ploeg of the Canada West Foundation; *Dollars and Sense*.
25. Ron Kneebone and Ken McKenzie of the University of Calgary; *Optimal Spending and Revenue Responsibilities for Cities*, submission to the Paying for Cities Conference in Edmonton, November 27, 2002.