

Business Indicators ♦ January 2006

BC's High Technology Sector

At one point in human history, the wheel would have been considered high technology. It revolutionized human development and became the central component of much of the technology developed thereafter, remaining the most important technological achievement for thousands of years. The pace of technological advancement has quickened over time and some old technologies (e.g., the steam locomotive and the eight-track cassette) have been supplanted by newer, more efficient ones. In more recent years, particularly since the advent of high-speed personal computers, new technological achievements have become almost a daily phenomenon.

In recognition of the continuous evolution of the concept of high technology, BC STATS, in consultation with Leading Edge BC, has expanded its definition of what industries constitute high technology to include more service sector industries, such as telecommunications and motion picture production.¹ This redefinition has had a considerable impact on the measurement of the high tech sector in British Columbia with most indicators of the sector's size increasing substantially. For example, output from BC's high technology sector, as measured by gross domestic product (GDP), is approximately double what it would be using the old definition. Clearly this is a significant definitional revision, reflecting the

¹ Note that this definitional change does not affect data on international trade of high tech goods, since merchandise trade is calculated using a different definition based on commodity codes, rather than industries.

The measurement of BC's high technology sector is a joint project of BC STATS and Leading Edge British Columbia.

For a list of what industries are classified as high tech and a more detailed analysis of the high technology sector in BC, including data tables, see the publication *Profile of the British Columbia High Technology Sector: 2005 Edition*, available online at:

www.bcstats.gov.bc.ca/data/bus_stat/busind/hi_tech/HTPcurr.pdf or on Leading Edge BC's website: www.leadingedgebc.ca

increased sphere of influence that high technology is occupying in a variety of industries.

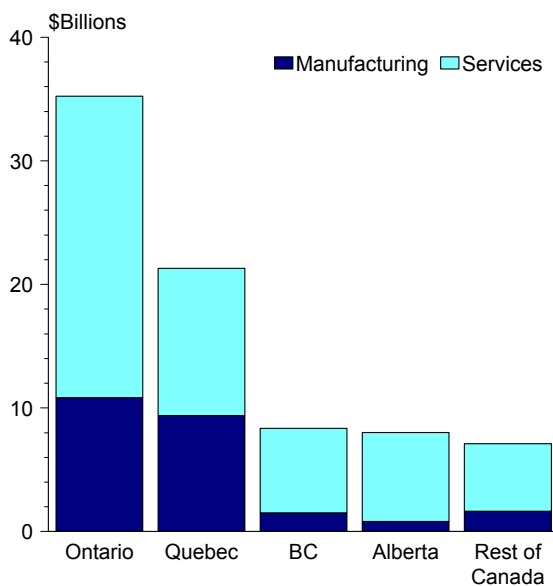
BC's high tech sector recorded above average performance in 2004

In 2004, BC's high tech sector recorded above average growth in every indicator with the exception of employment, where it suffered the most significant job loss in the country. It ranked second in the country in expansion of GDP and value of international commodity exports and experienced the strongest improvement in revenues and average earnings.

In 2004, GDP for British Columbia's high technology sector stood at over \$8.3 billion, which was enough to edge out Alberta, where the comparable figure was \$8.0 billion, to rank third in the country. Ontario, the largest province in Canada with respect to population, also had the highest GDP for high technology, at \$35.2 billion. Quebec ranked second with \$21.3 billion in high tech output. The service

sector was responsible for the majority of high tech GDP in each of the four top high technology provinces, but the degree of service sector dominance varied significantly. In British Columbia, almost 82%, or \$6.8 billion of BC's high tech GDP was comprised of services, versus only \$1.5 billion for high tech goods. The story was much the same in Alberta, where services made up 90% of high tech GDP. In Ontario, service industries generated just over two-thirds (69%) of high technology GDP. However, in Quebec, the goods sector plays a much larger role, with approximately 44% of high tech GDP produced by manufacturing industries. Large aerospace and pharmaceutical manufacturing industries are part of the reason for the higher dependence on manufacturing in that province.

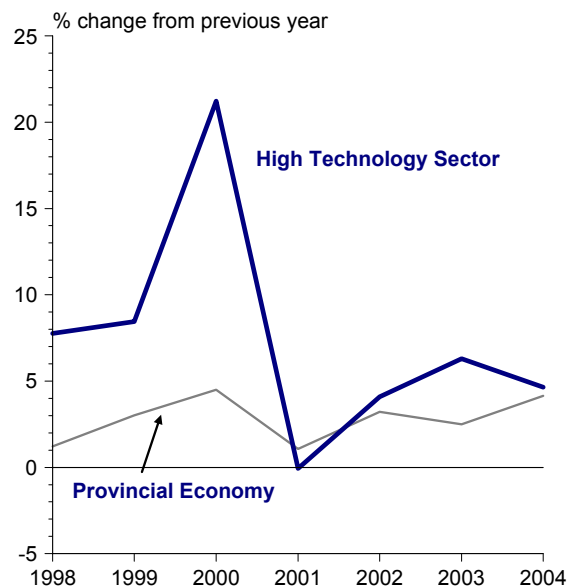
BC ranks third in the country in terms of high technology GDP



British Columbia's high tech GDP climbed 4.6% from 2003 to 2004, which exceeded the national average of 3.9% and was only slightly behind Alberta's 4.7% rate of growth. Quebec's high tech sector posted a GDP increase of 4.4%, while Ontario was the only high tech province to record a rise in GDP (+3.1%) lower than the Canadian average.

BC's high technology sector has generally outpaced the overall provincial economy in terms of GDP growth over the last several years. The only exception was in 2001, when the slump in the manufacturing sector offset the gains in high tech services, resulting in a marginal 0.1% decline in high tech GDP. However, the pace of expansion has slowed in recent years such that the high tech sector's growth in 2004 (+4.6%) was only marginally higher than that of the provincial economy as a whole (+4.1%).

BC's high technology sector GDP continues to outpace the overall provincial economy



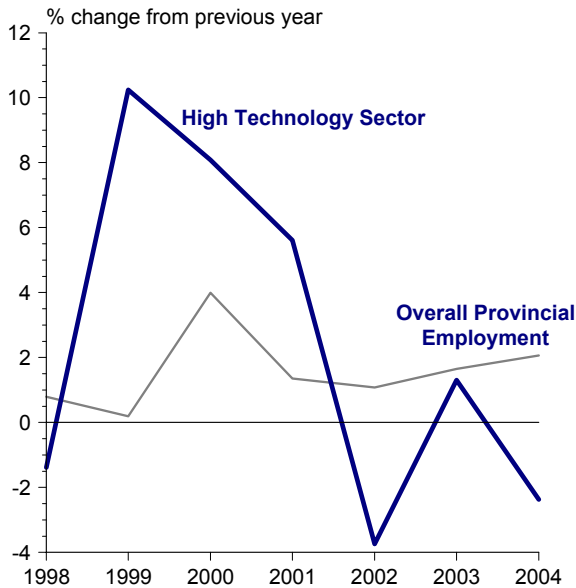
High tech employment fell in 2004

Employment in BC's high tech sector dropped 2.4% to 64,660 in 2004, with declines in both the service (-1.7%) and manufacturing (-5.1%) sectors contributing to the overall drop.² This contrasts with overall employment in the province, which climbed 2.1%. The slump in employment, concurrent with an increase in GDP, indicates that BC's high technology sector

² These figures exclude self-employed.

achieved some gains in productivity between 2003 and 2004 as a smaller labour force was able to generate greater output.

The high tech sector shed jobs in 2004, while overall employment in BC climbed



Nationally, employment in high technology industries edged down 0.5% in 2004. While BC's drop was the largest among the high tech provinces, Quebec also experienced significant job loss in the high tech sector, with employment falling 2.0%. Alberta bucked the national trend with a solid 2.1% gain in high tech jobs, while employment in the sector climbed 0.4% in Ontario. British Columbia's job loss combined with Alberta's gain has vaulted Alberta ahead of BC in terms of high tech employment.

Both revenues and expenses up

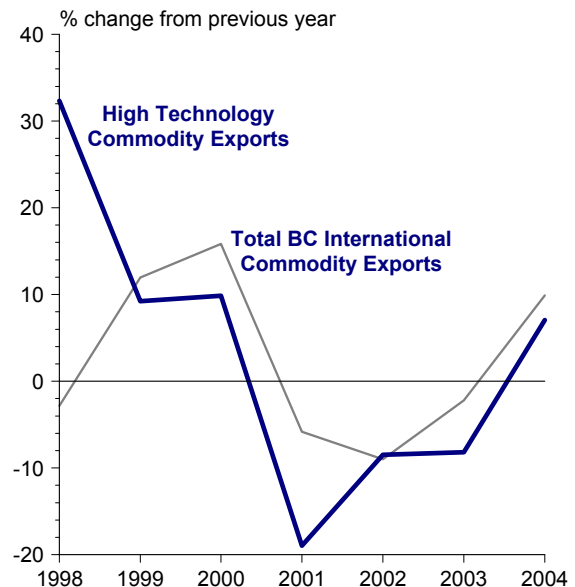
Revenues in BC's high tech sector climbed for the third straight year, rising 6.8% to just shy of \$14 billion. On the expense side, wages and salaries paid by BC high tech industries reached \$3.6 billion in 2004, edging up 0.3% over the previous year despite falling employment. Average weekly earnings in BC's high tech sector jumped 2.7%. For both revenues and earnings, BC posted

the strongest growth among the high tech provinces. At \$1,070, average weekly earnings in the high tech sector significantly exceeded the overall BC average weekly wage rate of \$690.

International merchandise exports rebound after three years of decline

After three consecutive years of decline, the value of high technology commodity exports from BC climbed 7.1% in 2004. Although this increase is not as robust as the 10.1% growth in the value of overall exports from the province, it is a significant turnaround after exports fell by more than eight percent in each of the previous three years, including a 19.0% drop in 2001.

Exports of high technology goods from BC climbed for the first time in three years in 2004



Imports of high technology goods into the province also bounced back in 2004, jumping 4.9% following two years of declines. Although exports increased at a more rapid pace compared to imports, the absolute increase in imports was larger, which resulted in a slight increase in BC's high tech trade deficit. The value of high tech imports into the province far outweighs that of exports

and consequently, BC has a substantial deficit in trade in high tech commodities, reaching \$2.8 billion in 2004.

As important as trade in goods is to BC's high tech sector, it is still small compared to trade in services. Provincial-level detail on exports of services is sparse, but roughly-speaking, high tech service exports from BC are approximately three times the value of international shipments of high tech goods.

High tech in BC is here to stay

British Columbia's high technology sector has undergone significant growth in the last decade and is likely to emerge as an even more important segment of the provincial economy in years to come. The increasing penetration of high technology into all facets of life should ensure that this sector will continue to expand and BC's presence in the sector should continue to grow as well.