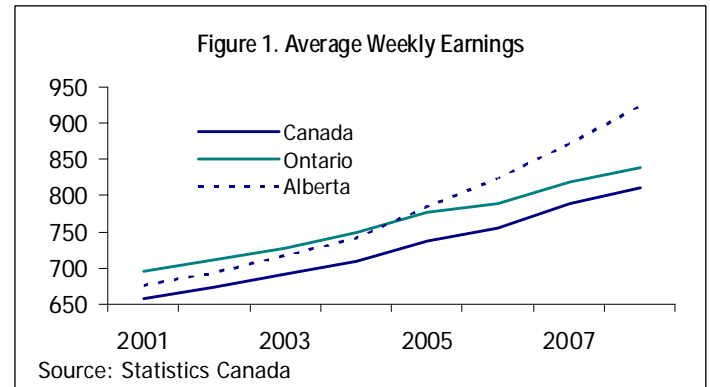


## Wage Growth during the Boom!

### Summary

In recent years, the Alberta economy has suffered from chronic labour shortages. The unemployment rate fell to a generational low between 2004 and 2008 and wages rose faster than anywhere else in the country. Between 2001 and 2008, employment grew by over 382,000 (23.4%), supported by the booming Alberta economy and robust interprovincial and international migration.

The historically low unemployment rate and widespread shortages of skilled workers resulted in a substantial run-up in wages. In 2001, Alberta's average weekly earnings were second to Ontario's and only slightly higher than the national average. Between 2005 and 2008, Alberta's average weekly earnings rose 17.8%; they are now the highest in the country, nearly \$130 higher than in Ontario and \$150 more than the national average.



### Employment by Industry

During the investment boom, the Alberta economy experienced widespread employment growth (see appendix). Employment in the goods-producing sector, which includes oil and gas extraction, construction, and manufacturing, rose by nearly 30% between 2001 and 2008. By 2008, this sector accounted for roughly 29% of employment in Alberta. The services-producing sector, accounting for the balance, added more than 250,000 jobs during the period, growing 21%.

Not surprisingly, the industries that grew the fastest during the period were construction (+56.4%), mining and oil and gas extraction (+49.1%), finance-related (+35.7%), business, building, and other support services (+33.1%), and professional, scientific and technical services (+33.0%).

Industries that benefited indirectly from the investment boom in the oil and gas sector also

Table 1. Employment by Industry, Alberta 2008

	Employment (thousands)	Percent of Total
<b>Total</b>	<b>2,013.3</b>	<b>100.0</b>
<b>Goods-producing sector</b>	<b>577.1</b>	<b>28.7</b>
Agriculture	61.0	3.0
Forestry, fishing, mining and oil and gas extraction	149.2	7.4
Utilities	17.5	0.9
Construction	205.3	10.2
Manufacturing	144.1	7.2
<b>Services-producing sector</b>	<b>1,436.2</b>	<b>71.3</b>
Wholesale trade	87.3	4.3
Retail trade	229.7	11.4
Transportation and warehousing	102.2	5.1
Finance; insurance; real estate and leasing	111.7	5.5
Professional; scientific and technical services	164.2	8.2
Business; building and other support services	63.9	3.2
Educational services	126.8	6.3
Health care and social assistance	190.2	9.4
Information; culture and recreation	71.6	3.6
Accommodation and food services	114.0	5.7
Other services	91.2	4.5
Public administration	83.5	4.1

Source: Statistics Canada

## Wage Growth during the Boom!

experienced significant employment growth. Industries such as wholesale (+27.5%), retail (+24.0%), health care (+27.7%), other services (+17.5%), and education (+15.9) benefitted from increased consumer spending and rapid population growth.

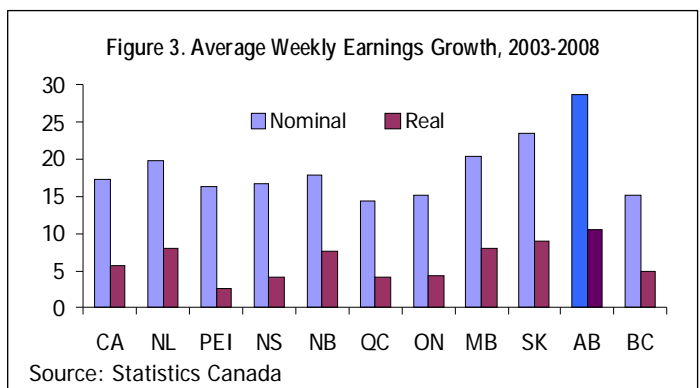
From 2005 to 2008, Alberta experienced not only strong employment growth, but also chronic labour shortages, particularly for skilled workers. During the period, Alberta's unemployment rate averaged 3.6%. This was well below the national unemployment rate (6.3%) and the next lowest province, Manitoba (4.4%).

Labour shortages were problematic in most industries. Not only did the oil and gas and construction sectors suffer from a lack of skilled workers, but industries such as health care, finance, and manufacturing observed unemployment rates averaging between 1.6% and 2.5% during the peak years of 2005-2008 (see appendix).

### Wage Growth in Alberta

During the investment boom, wages rose rapidly in Alberta in response to the tight labour market conditions and strong inflation.<sup>1</sup> Average hourly earnings (which excludes the effects of changes in hours worked) rose by over 5% in each of the last four years. This is well above the growth rates experienced by the other provinces, though the other resource-based economies did experience above average wage growth.

Even when inflation is considered, Alberta's average weekly earnings have still risen substantially. In 2002 and 2003, consumer prices rose faster than average weekly earnings, but in subsequent years real average weekly earnings rose rapidly. Between 2003 and 2008, real average weekly earnings rose by 10.5%. Saskatchewan experienced strong growth with an 8.9% increase, while Ontario and British Columbia both saw real earnings rise by less than 5.0%. Alberta's 10.5% rise over the period is equivalent to an annual compound growth rate of 2.0%, well above the national average of 1.1%.



On an industry basis, wage growth has been strong not only in the oil and gas industry, but throughout the Alberta economy (see appendix). While oil and gas extraction continues to have the highest average weekly earnings (\$1,886.72 in 2008), a number of other industries saw their wages rise more rapidly during the boom.

In 2001, the mining and oil and gas extraction and construction sub-sectors accounted for about 14% of Alberta's total employment. By 2008, the two sub-sectors' proportion of employment had risen to more than 17%. Offering the highest wages in the province, employment in the mining and oil and gas extraction sub-sector grew by 49.1% between 2001 and 2008. Similarly, the investment boom required a significant increase in the size of Alberta's construction industry. Employment rose by 74,000 (56.4%) and wages rose significantly in response to chronic labour shortages. These higher wages attracted workers from other industries and/or provinces. In 2008, average weekly earnings in the mining and oil and gas extraction and the construction industries were \$1,629.24 and \$1,183.48, respectively, which were well above the Alberta average of \$923.21.

Although, wages were highest in the oil and gas extraction industry in absolute terms; wage growth was higher in accommodation and food services, administrative and support services, other services, and in public

<sup>1</sup> Between 2001 and 2008, consumer prices rose 25.7% in Alberta. This is equivalent to an annual compound growth rate of 3.3%, well above the national average (2.2%) and the Bank of Canada's target inflation rate of about 2%.

## Wage Growth during the Boom!

administration. And, in a number of other industries, wages grew at rates comparable to the oil and gas industry. Between 2001 and 2008, average weekly earnings grew by 36.1% in the oil and gas extraction industry, while the overall service sector, which accounts for more than 70% of employment, experienced average weekly earnings growth of nearly 35%.

High and rising wages in mining and oil and gas extraction and construction were necessary to induce many workers to switch industries or to relocate to Alberta. Rising energy prices and growing investment in Alberta's oil sands led many to expect that this boom was likely to persist, providing a further incentive for workers to transition to Alberta's energy industry. In order to retain and attract workers to industries not directly related to the oil boom, companies and organizations had to increase wages substantially.

### Interprovincial Comparison

Among the provinces, average weekly earnings are the highest and have grown the fastest in Alberta (See appendix tables A3 and A4). Interestingly, Alberta's oil and gas sector wages did not grow the fastest in recent years. Between 2001 and 2008, both British Columbia's and Saskatchewan's energy industry had higher compound annual wage growth rates. Saskatchewan in particular saw wages rise rapidly to within \$85 of Alberta's average weekly wage for oil and gas extraction industry employees. Wages in the energy sector rose rapidly across the three western provinces in response to increased competition for labour. The striking difference during the period, however, was the effect on economy-wide wages.

Alberta's construction industry has been one of the greatest beneficiaries of the large scale investment in energy, industrial, commercial, and residential building projects. Not surprisingly, wages in this sector rose faster than the provincial average. A similar pattern can be observed in British Columbia, likely the result of the Vancouver's Olympic build and the strength in the housing market. Despite strength in the construction and mining and oil and gas sub-sectors, overall wages did not rise as significantly in British Columbia as they did in Alberta. This could be due to its more diverse economy, the relatively smaller size of its energy industry, and the less robust labour market.

Table 2. 2008 Provincial Comparison

	SK	AB	BC
Real GDP (2002 millions)	41,578	187,028	164,161
Mining, oil, and gas(%)	13.3%	17.7%	2.7%
Construction (%)	6.0%	8.1%	5.7%
Manufacturing	5.6%	-2.1%	-10.5%
Agriculture, forestry, fishing and hunting (%)	10.6%	2.6%	2.4%
Services (%)	57.4%	58.8%	70.6%
Gross Fixed Capital Formation (%)	26.9%	36.1%	24.5%
Population (000s)	1,016.0	3,585.1	4,381.6
Employment (000s)	512.7	2,013.3	2,314.3
Mining, oil, and gas (%)	4.6%	7.4%	1.1%
Construction (%)	7.2%	10.2%	9.5%
Manufacturing	0.7%	0.8%	-8.6%
Agriculture (%)	8.0%	3.0%	1.5%
Services (%)	72.8%	71.3%	78.3%

Source: Statistics Canada

Wage growth in Saskatchewan during 2007 and 2008 showed across the board strength similar to Alberta's experience during the recent boom. With a smaller labour market and a larger share of the economy devoted to agriculture and energy, demand for similar types of labour and rising inflation likely pushed up wages. In response to the acute labour shortages, wages rose rapidly in the province and attracted workers from other provinces.

### International Comparison

During the recent boom, some analysts suggested that the run up in Alberta's wages was largely the result of imported oil sector wage costs. It is thus worthwhile to compare Alberta's experience with those of other major market-based energy producers. Many of the same companies operate to varying degrees in Norway, the United Kingdom, the United States, and Alberta. Labour can move relatively easily between these countries on a short term basis.

## Wage Growth during the Boom!

Canada's economy is most closely tied to the US economy, and the US wage data does seem to support the conclusion that Alberta's wage growth might have been prompted by imported oil sector wage costs. US wages in the oil and gas sector did show strong growth in recent years, although most sectors not related to the oil industry did not experience the same strong growth as in Alberta. This is likely due to the maturity of the US oil and gas industry and its more specialized nature.

While crude oil production continues to rise in the Alberta, production is declining in mature producing countries like the United Kingdom and Norway. Production in both countries peaked around the turn of the century and has since fallen considerably. Real business investment in the oil and gas extraction industry has been relatively volatile in the United Kingdom. Employment growth in the United Kingdom's energy industry has also swung between wildly positive and negative in recent years as production has declined about 46% since peaking in 1999.

In contrast, investment in Norway's energy sector has been consistently strong, with an annual compound growth rate of more than 10% for the 2002 to 2008 period. Strong business investment has propelled employment growth in the Norwegian energy sector.

Despite the very different trends in investment and employment, both Norway and the United Kingdom have experienced very strong wage growth in recent years, while other sectors in their economies have seen much more moderate wage growth.

It should be noted that employment in oil and gas extraction in both countries is substantially smaller than in Alberta, both in absolute and relative terms. The nature of the oil and gas industry in the two European countries is also considerably different from Alberta's. The bulk of Alberta's oil is produced from the oil sands (bitumen) and conventional on-shore while European production is conventional offshore in the North Sea.

Interestingly, when comparing real (inflation adjusted) earnings for the oil and gas extraction sector, Alberta's performance pales in comparison to the wage gains in the three other countries. And while wage growth was relatively weaker in Alberta's oil and gas industry, the industries not directly related to the boom experienced relatively stronger wage growth.

Table 2. Real Wage Growth for the Energy Sectors

	Alberta <sup>a</sup>	US <sup>a</sup>	Norway <sup>b</sup>	UK <sup>c</sup>
2002	0.6	-9.3	4.4	-0.7
2003	0.8	0.0	0.0	2.4
2004	1.5	1.1	3.2	3.8
2005	0.4	2.6	0.7	7.4
2006	1.8	4.2	4.4	3.7
2007	-0.4	7.2	6.0	9.8
2008	3.2	6.3	0.3	4.9
2001-08 <sup>d</sup>	1.2	1.6	2.7	4.4

<sup>a</sup> Average weekly earnings for the oil and gas extraction industry adjusted using the consumer price index.

<sup>b</sup> Average monthly earnings for the oil and gas extraction industry adjusted using the consumer price index.

<sup>c</sup> Average weekly pay for the mining and quarrying sub-sector adjusted using the consumer price index.

<sup>d</sup> Compounded annual growth rate for the 2001-2008 period.

Sources: Statistics Canada, Bureau of Labor Statistics (US), Office of National Statistics (UK), and Statistics Norway.

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Prepared by Economics and Statistics.

For further information contact Paul LeBane (780)638-3000 or Mary MacGregor (780)427-8790.

## Wage Growth during the Boom!

Table A1. Employment and Unemployment Rate by Industry for Alberta

	Employment			Unemployment Rate		
	2001	2008	% Change	2001	2008	2005-08 Average
<b>Total</b>	<b>1,630,900</b>	<b>2,013,300</b>	<b>23.4%</b>	<b>4.7</b>	<b>3.6</b>	<b>3.6</b>
<b>Goods-producing sector</b>	<b>445,500</b>	<b>577,100</b>	<b>29.5%</b>	<b>4.3</b>	<b>3.1</b>	<b>3.0</b>
Agriculture	60,000	61,000	1.7%	3.0	2.3	2.5
Mining and oil and gas extraction	97,600	145,500	49.1%	3.4	3.1	2.8
Utilities	13,900	17,500	25.9%	n.a.	n.a.	n.a.
Construction	131,300	205,300	56.4%	6.7	4.3	4.1
Manufacturing	139,000	144,100	3.7%	3.7	2.3	2.5
<b>Services-producing sector</b>	<b>1,185,400</b>	<b>1,436,200</b>	<b>21.2%</b>	<b>3.3</b>	<b>2.7</b>	<b>2.7</b>
Wholesale trade	68,500	87,300	27.4%	3.5	3.1	3.2
Retail trade	185,300	229,700	24.0%	3.5	3.7	3.6
Transportation and warehousing	98,700	102,200	3.5%	2.3	3.0	2.7
Finance; insurance; real estate and leasing	82,300	111,700	35.7%	2.1	1.9	2.1
Professional; scientific and technical services	123,500	164,200	33.0%	3.0	1.9	2.0
Business; building and other support services	48,000	63,900	33.1%	7.7	4.1	4.5
Educational services	109,400	126,800	15.9%	3.6	3.6	3.8
Health care and social assistance	148,900	190,200	27.7%	1.8	1.6	1.6
Information; culture and recreation	67,400	71,600	6.2%	4.0	3.8	4.4
Accommodation and food services	110,800	114,000	2.9%	6.4	5.8	5.5
Other services	77,600	91,200	17.5%	n.a.	n.a.	n.a.
Public administration	65,000	83,500	28.5%	n.a.	n.a.	n.a.

Note: May not sum to total as a result of rounding; n.a. - not available.

Source: Statistics Canada; *Labour Force Survey*

Table A2. Average Weekly Earnings by Industry for Alberta

	2001	2008	Percent Change <sup>a</sup>	Annual Compound Growth Rate <sup>b</sup>
<b>Total</b>	<b>676.07</b>	<b>923.21</b>	<b>36.6</b>	<b>4.6</b>
<b>Goods-producing sector</b>	<b>923.29</b>	<b>1,271.77</b>	<b>37.7</b>	<b>4.7</b>
Mining and oil and gas extraction	1,202.69	1,629.24	35.5	4.4
Oil and gas extraction	1,386.57	1,886.72	36.1	4.5
Utilities	1,069.71	1,512.58	41.4	5.1
Construction	856.52	1,183.48	38.2	4.7
Manufacturing	803.81	1,066.05	32.6	4.1
<b>Services-producing sector</b>	<b>601.89</b>	<b>810.19</b>	<b>34.6</b>	<b>4.3</b>
Wholesale trade	804.77	1,070.65	33.0	4.2
Retail trade	437.13	518.32	18.6	2.5
Transportation and warehousing	734.76	991.97	35.0	4.4
Finance and insurance	--	1,130.71		
Professional; scientific and technical services	928.23	1,194.24	28.7	3.7
Educational services	655.42	897.13	36.9	4.6
Health care and social assistance	566.01	753.16	33.1	4.2
Information; culture and recreation	722.42	947.67	31.2	4.0
Accommodation and food services	262.77	372.37	41.7	5.1
Arts; entertainment and recreation	377.98	482.17	27.6	3.5
Administrative and support; waste management and rerr	571.68	790.64	38.3	4.7
Other services	483.91	736.59	52.2	6.2
Public administration	726.12	1,042.16	43.5	5.3

<sup>a</sup> Total percentage change between 2001 and 2008.

<sup>b</sup> Compound annual growth rate for the 2001 to 2008 period.

Source: Statistics Canada; *Labour Force Survey*.

## Wage Growth during the Boom!

Table A3. Various Measures of Earnings

	Average Hourly Wage Rate <sup>a</sup>			Average Hourly Earnings <sup>b</sup>			Average Weekly Earnings <sup>b</sup>		
	2001	2008	Annual Growth <sup>c</sup>	2001	2008	Annual Growth <sup>c</sup>	2001	2008	Annual Growth <sup>c</sup>
<b>Canada</b>	<b>17.22</b>	<b>21.32</b>	<b>3.1</b>	<b>15.92</b>	<b>19.64</b>	<b>3.0</b>	<b>656.74</b>	<b>810.40</b>	<b>3.0</b>
Nfld	14.33	18.86	4.0	14.89	19.05	3.6	592.91	766.11	3.7
PEI	13.25	16.98	3.6	13.00	16.24	3.2	528.04	661.79	3.3
NS	14.53	18.12	3.2	14.55	17.36	2.6	575.03	713.82	3.1
NB	14.22	17.80	3.3	14.28	17.81	3.2	589.28	729.11	3.1
QC	16.63	20.03	2.7	15.21	18.55	2.9	622.84	751.13	2.7
ON	18.17	22.15	2.9	16.59	19.83	2.6	695.24	837.45	2.7
MB	15.35	19.24	3.3	14.34	18.35	3.6	587.31	750.77	3.6
SK	15.35	20.33	4.1	14.81	19.56	4.1	597.04	785.59	4.0
<b>AB</b>	<b>17.13</b>	<b>23.68</b>	<b>4.7</b>	<b>16.26</b>	<b>22.27</b>	<b>4.6</b>	<b>676.07</b>	<b>923.21</b>	<b>4.6</b>
BC	17.98	21.47	2.6	16.31	19.73	2.8	658.04	790.93	2.7

<sup>a</sup> Average hourly wage rate is an estimate based on the monthly *Labour Force Survey*.

<sup>b</sup> Average hourly earnings (excluding overtime) and average weekly earnings (including overtime) are estimates based on the *Survey of Employment, Payrolls and Hours*.

<sup>c</sup> Compound annual growth rate for the 2001 to 2008 period.

Source: Statistics Canada; *Labour Force Survey* and *Survey of Employment, Payrolls and Hours*.

Table A4. Average Weekly Earnings Growth (including overtime)

	Provincial Average			Oil and Gas Extraction			Construction		
	SK	AB	BC	SK	AB	BC	SK	AB	BC
2002	2.3	2.6	2.0	-1.4	4.0	-8.7	3.8	1.8	4.4
2003	4.2	3.4	2.3	7.6	5.3	15.6	2.1	4.8	2.7
2004	3.0	3.3	1.8	6.8	3.0	9.1	0.0	0.5	-0.8
2005	4.3	5.8	3.6	2.4	2.5	-2.3	1.1	6.4	3.7
2006	3.9	5.0	2.9	7.6	5.8	23.0	4.4	4.0	3.9
2007	5.4	5.8	3.3	8.5	4.6	2.4	7.3	7.8	5.8
2008	4.8	6.0	2.8	5.2	6.5	5.1	2.7	8.0	4.7
2001-08 <sup>a</sup>	4.0	4.6	2.7	5.2	4.5	5.9	3.0	4.7	3.5
2008 Level	785.59	923.21	790.93	1,805.66	1,886.72	1,700.24	921.60	1,183.48	970.69

<sup>a</sup> Compound annual growth rate for the 2001 to 2008 period.

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours*.