

Inflation, Consumer Price Index, and COLA: WHAT IS IT ALL ABOUT?

Consumer Price Index

The Alberta Consumer Price Index (ACPI) provides a broad measure of the cost of living in Alberta by illustrating how the average cost of a large basket of goods and services changes over time.

Although ACPI is an index, what we usually hear referred to when the term Consumer Price Index is used is the percentage change over time in the index. For instance, it is rare to hear that the ACPI is 135.2 but it is common to hear that consumer price index rose by “1.5% percent.”

This percentage change in Alberta Consumer Price Index is generally taken as a measure of inflation.

Statistics Canada calculates the ACPI both as a month-to-month percentage increase – for example from September 2017 to October 2017 – and as year-over-year monthly percentage increase – for example from September 2016 to September 2017.

However both these percentage increases can fluctuate a great deal. Therefore Statistics Canada also calculates the average percent change for any given year simply by averaging the monthly year-to-year percent changes over the course of a 12-month calendar year.

The most recent annual average percent increase in the Alberta Consumer Price Index available from Statistics Canada is for the 2016 year. The 2017 average annual percent change in Alberta Consumer Price Index (ACPI) will not be available for some weeks.

This document uses a *preliminary* year-to-date average annual ACPI (noted by an asterisk in the following Table 1) based on the currently available 11 months of data –January 2017 through November 2017 from Statistics Canada.¹

Table 1 Year over Year Changes in the Alberta Consumer Price Index, 2006-2017

	ANNUAL AVERAGE ALBERTA CONSUMER PRICE INDEX	AVERAGE ANNUAL % CHANGE IN ALBERTA CONSUMER PRICE INDEX
2006	112.3	–
2007	117.9	4.99%
2008	121.6	3.14%
2009	121.5	-0.08%
2010	122.7	0.99%
2011	125.7	2.44%
2012	127.1	1.11%
2013	128.9	1.42%
2014	132.2	2.56%
2015	133.7	1.13%
2016	135.2	1.12%
2017	137.2*	1.48%*

1 Use of the preliminary values marked by an asterisk is also supported by forecasts generated by the provincial government and financial institutions (See Table 2)

Looking Ahead: Forecasted Annual Percent Change in ACPI

Governments and financial institutions produce short term forecasts of predicted year over year annual percent changes in the Alberta Consumer Price Index or, as it is commonly referred to, inflation. As of the end of 2017 forecasted annual percent changes in the ACPI hover in the vicinity of 1.5% for 2017 and 1.9 to 2% for both 2018 and 2019.

Table 2 Forecasted Average Annual Percent Change in Alberta Consumer Price Index 2017, 2018 and 2019

SOURCE	RELEASE DATE	2017	2018	2019
Gov AB 2nd Quarter Fiscal Update & Economic Statement	November 2017	1.6	2.0	2.0
ATB Financial: Alberta Economic Outlook	November 2017	1.6	2.3	1.9
TD Bank Provincial Economic Forecast	December 14 2017	1.4	1.8	2.1
RBC Provincial Outlook	December 2017	1.4	1.6	1.7

COLA or Cost of Living Adjustments

Cost of Living Adjustments (COLA) are based on CPI but can be calculated differently by different organizations and don't necessarily include the entire change in CPI. COLAs consist of formulas that specify exactly which time period of change in CPI are to be considered and what proportion of the percent change in CPI should be included.

For example, the Alberta Teachers Association Cost-of-Living adjustments for pension payable on Pensionable Service from January 1, 1993 onwards, has been defined as 70% of the change from year to year in the Alberta Consumer Price Index.

The UNA AHS 2013 – 2017 Collective Agreement Letter of Understanding re: Cost of Living Lump Sum Payment states that UNA members would receive a lump sum COLA payment only if the percentage increase in ACPI was over 5%. The actual average percent change in Alberta CPI over the course of the agreement has been less than 5% and a result no lump sum COLA payment was made.

Has the Increase in Nurses' Salary Kept Pace with Inflation?

This document compares the rate of change in UNA nursing salaries over the past 11 years² with the rate of change in Alberta Consumer Price Index.

To better reflect the contents of Salary Appendices at the end of the Collective Agreements for the years in question, Table 3a uses the metric of UNA's Year 1 hourly salary between 2006 to 2017 as the basis for comparison with the Alberta Consumer Price Index. The table does not take into account the lump sum payments which have increased from zero in 2006 to \$1,750 in subsequent years.

Increases in shift differentials and charge pay, as well as adjustments for long service³ over the years in question are not included as the proportion of nurses who received these adjustments and premiums in any given year is not known.

The information in Tables 3a and 3b can be analysed in a number of ways in order to answer the question of how changes in salary compare with changes in inflation.⁴

2 Calculations for other time periods available on request.

3 Pay adjustment of 2% for nurses with 20 or more years of experience was first introduced in 2007. Because the proportion of nurses who received that adjustment in any given year is not known, the long service rate adjustment has not been included in the above figures.

4 As an aside, the informal approach of summing annual percent increases to estimate growth in salary does not take into account the impact of compounding interest. As a result, this approach underestimates growth over time.

Table 3a Percent Change in Yr 1 Hourly Salary, 2006 -2017⁵

	YR 1 HOURLY RATE	ANNUAL % CHANGE IN YR 1 HOURLY RATE
2006	27.93	—
2007	29.33	5.0%
2008	30.80	5.0%
2009	32.34	5.0%
2010	32.34	0.0%
2011	32.99	2.0%
2012	34.31	4.0%
2013	34.31	0.0%
2014	35.00	2.0%
2015	35.78	2.2%
2016	36.86	3.0%
2017	36.86	0.0%

Table 3b Percent Change in ACPI, 2006 -2017

	ACPI	ANNUAL % CHANGE IN ACPI
2006	112.3	—
2007	117.9	5.0%
2008	121.6	3.1%
2009	121.5	-0.1%
2010	122.7	1.0%
2011	125.7	2.4%
2012	127.1	1.1%
2013	128.9	1.4%
2014	132.2	2.6%
2015	133.7	1.1%
2016	135.2	1.1%
2017	137.2	1.5%

Growth over time: One simple method that captures growth over time is to calculate the salary difference between the salary at two points in time and divide that by the salary at the earliest of the two time points of interest.

Example: to calculate the growth in nurse salary between 2006 and 2017, subtract the 2006 hourly salary from the 2017 hourly salary and then divide by the 2006 hourly salary.

$$[(137.2-27.93)/27.93] = 0.31973 \text{ OR } 32.0\%.$$

The same method applied to the change in Alberta’s Consumer Price Index over that same time period results in a growth rate –or in what is often referred to as inflation– of 22.2%.

$$[(36.86-112.3)/112.3] = 0.22173 \text{ OR } 22.2\%$$

Between 2006 and 2017 inflation was 22.2%, while growth in nurses’ basic hourly salary grew by 32.0%

Figure 1 and Figure 2 illustrate the differences in cumulative growth rate for inflation and nurse salary

Figure 1 Annual Cumulative Percent Change in Alberta Consumer Price Index & UNA Salary, 2006 to 2017

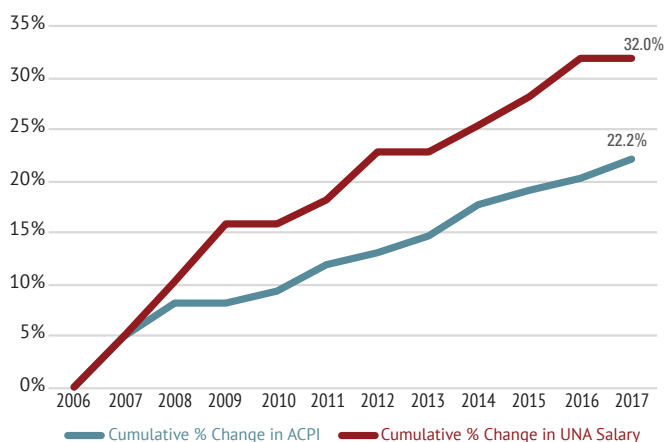
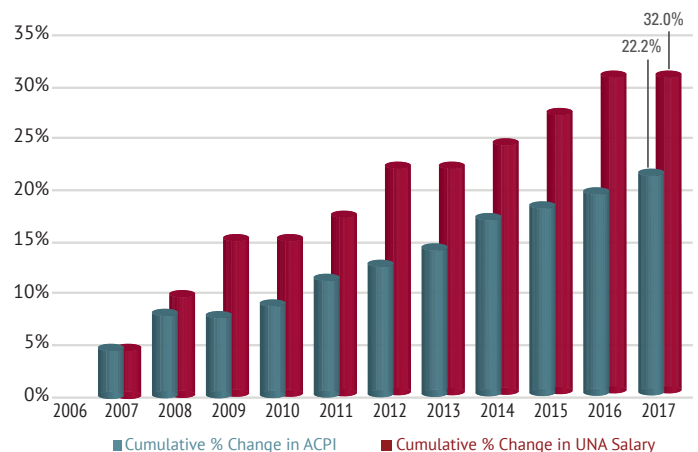


Figure 2 Annual Cumulative Percent Change in Alberta Consumer Price Index & UNA Salary, 2006 to 2017



5 Minor discrepancies between percent changes in this table and negotiated settlement increases are attributable to the rounding process used to generate this particular table.

Calculating salary in constant dollars: Another method that allows for the comparison of salary with inflation is to calculate a salary in constant dollars and then use the formula for calculating growth over time to see how salary has changed over the specified time period.

Table 4 shows the value of Year 1 hourly salary for 2006 through 2017 calculated in constant 2006 dollars.

Table 4 Yr 1 Hourly Salary Calculated as Constant 2006 Dollars, 2006-2017

YEAR	YR 1 HOURLY RATE	ACPI	FORMULA: (YR 1 RATE*2006 ACPI)/ GIVEN YEAR ACPI	YR 1 HOURLY RATE EXPRESSED IN CONSTANT 2006\$
2006	27.93	112.3	$(27.93*112.3)/112.3$	27.93
2007	29.33	117.9	$(29.33*112.3)/117.9$	27.94
2008	30.80	121.6	$(30.80*112.3)/121.6$	28.44
2009	32.34	121.5	$(32.34*112.3)/121.5$	29.89
2010	32.34	122.7	$(32.34*112.3)/122.7$	29.60
2011	32.99	125.7	$(32.99*112.3)/125.7$	29.47
2012	34.31	127.1	$(34.31*112.3)/127.1$	30.31
2013	34.31	128.9	$(34.31*112.3)/128.9$	29.89
2014	35.00	132.2	$(35.00*112.3)/132.2$	29.73
2015	35.78	133.7	$(35.78*112.3)/133.7$	30.05
2016	36.86	135.2	$(36.86*112.3)/135.2$	30.62
2017	36.86	137.2	$(36.86*112.3)/137.2$	30.17

By applying the previous method used to calculate growth over time to these constant 2006 dollar amounts (i.e. dollar amounts already adjusted for inflation) we can see how much the Year 1 hourly rate has increased over the time period 2006 through 2017, adjusted for inflation:

$$\frac{[(2017 \text{ HOURLY RATE EXPRESSED IN } 2006\$) \text{ MINUS } (2006 \text{ HOURLY RATE EXPRESSED IN } 2006\$)]}{2006 \text{ HOURLY RATE EXPRESSED IN } 2006\$}$$

OR

$$(30.17 - 27.93)/(27.93) = 0.08 \text{ OR } 8\%$$

Between 2006 and 2017, “real” nurses salary or nurses’ salary adjusted for inflation, grew by 8%. In terms of the amount of goods and services that could be bought, in 2017, nurses were able to buy 8% more goods and services with their salary than they had been able to purchase in 2006 with their salary at the time.