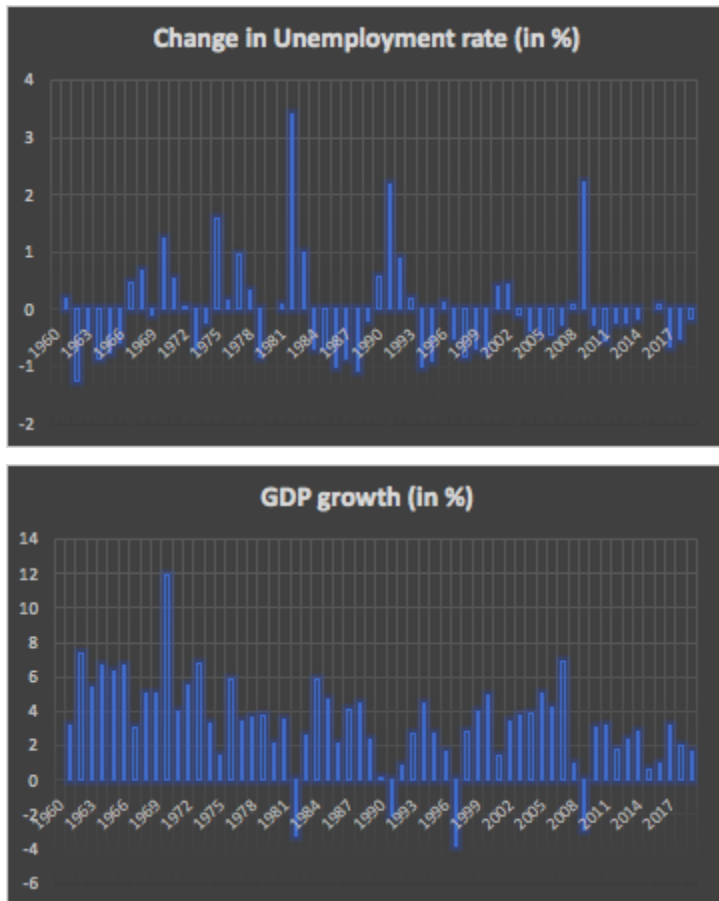


## *Okun's Law*

Okun's law investigates the statistical relationship between a country's unemployment rate and the growth rate of its economy. Output depends on the amount of labour used in the production process, so there is a positive relationship between output and employment. Total employment equals the labour force minus the unemployed, so there is a negative relationship between output and unemployment. In other words, this law (named after economist Arthur Melvin Okun) is intended to tell us how much of a country's gross domestic product (GDP) may be lost when the unemployment rate is above its natural rate.

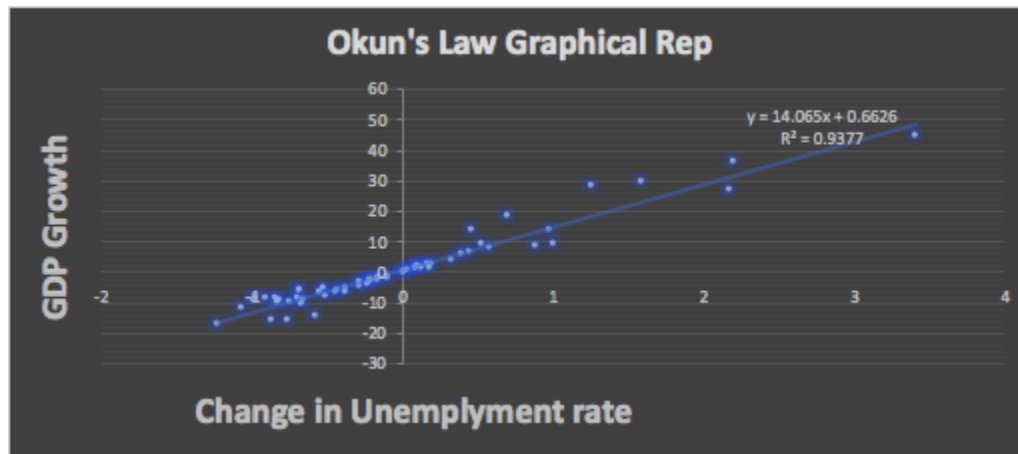
Let us first analyse the trends of change in Unemployment and GDP growth rate:



Analysing the relationship between GDP and unemployment from the above given graphs we can see that GDP growth and unemployment grow in different directions. From the 1960 to the 1970 we can see negative unemployment levels whereas positive GDP growth. This shows that when the GDP increases that is when there is a rise in the output in the economy the unemployment levels decrease as more labour is hired to increase the output in the economy. We can clearly see that in the 1970 the GDP increase is on a high whereas unemployment growth is negative. Next week and see that in 1982 GDP growth is in the negative whereas there is a clear spike in the Unemployment rate. Similar Trends of negative relationship between GDP and

unemployment can be seen in the year 2009 where GDP growth is in negative whereas unemployment rate is high.

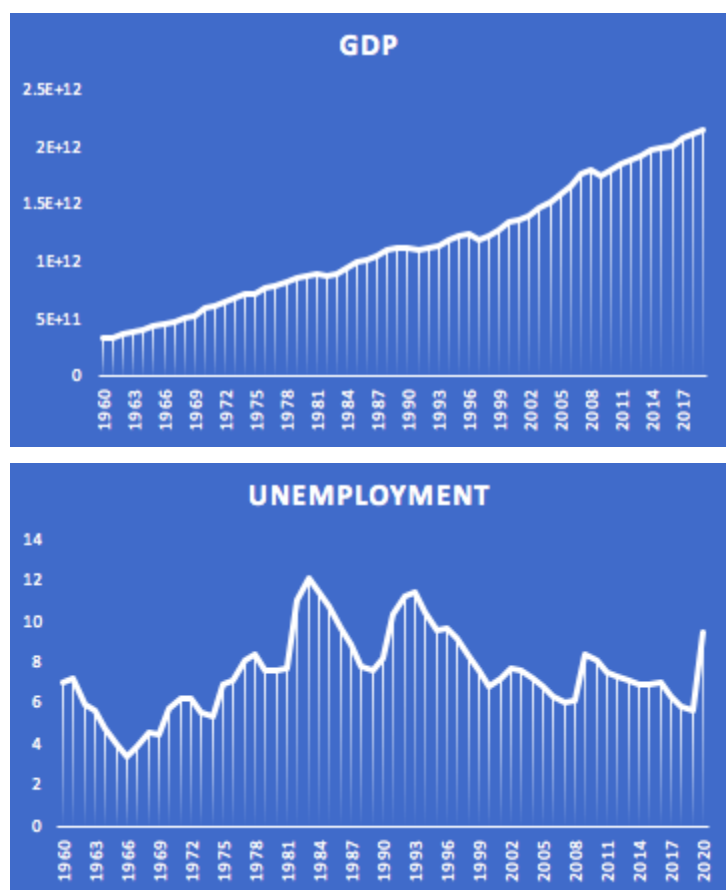
Now to analyse the Okun's Law for Canada:



We can see a clear positive relationship between the GDP growth and change in unemployment rate in the graph given above. This defeats the findings and explanations of the Okun's Law which states that there is a negative relationship between output and unemployment. Because as the GDP or the output of the economy increases more labour is hired to increase that output and hence the unemployment level decreases or the employment level increases.

It is clear by the positive sloping graph above that Okun's Law does not hold true for Canada. Here are some reasons to justify that:

- The Canadian economy in the 1970s was plagued by stagflation, ie, sharp increases in unemployment and inflation, and a sustained slowdown in the rate of growth of real output and productivity (as we can clearly see in the graphs given below). This slowdown in economic growth clearly defines a negative relationship between GDP and unemployment, hence it does not justify the positive sloping Okun's Graph given above.
- When the Bank of **Canada's** anti-inflationary policy actions in the late 1980s finally convinced **Canadians** that inflation would be brought under control, the inflationary excesses that had built up contributed to a severe **recession** in **1990–91**. This led to an increase in the unemployment rates and a slowdown in the economic growth, causing a decrease in the GDP of the country. This clearly shows the negative relationship between GDP and unemployment, and hence we can say that the Okun's Law does not hold true for Canada.

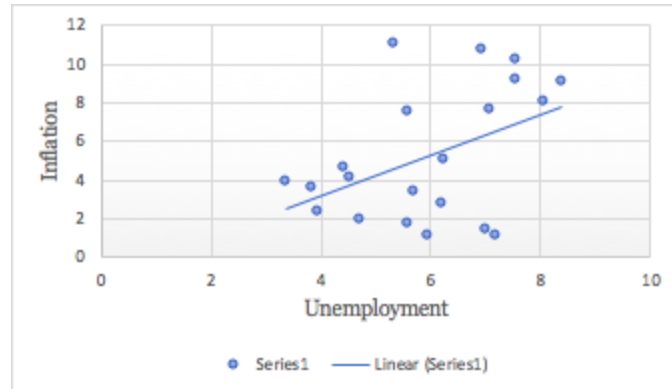


### *The Phillips Curve*

The Phillips curve depicts the relationship between inflation and unemployment rates. The long-run Phillips curve is a vertical line that illustrates that there is no permanent trade-off between inflation and unemployment in the long run. However, the short-run Phillips curve is roughly L-shaped to reflect the initial inverse relationship between the two variables. As unemployment rates increase, inflation decreases; as unemployment rates decrease, inflation increases.

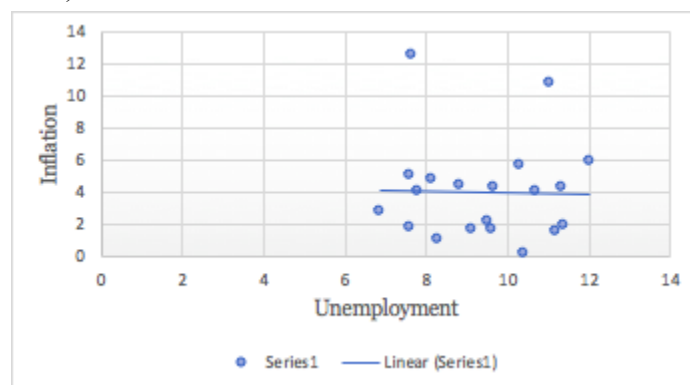
For this assignment, I will be analysing the inflation and unemployment rates and making the Phillips curve for the Canadian Economy.

During the decade of the 1960s as well as the 1970s Canada experienced high rates of both *inflation* and *unemployment*. Possible explanations of the positive correlation (as seen the Graph 1 in the excel sheet) between the unemployment and the inflation rate in the 1960-1980s can be:



- Inflationary expectations and the inflation-unemployment trade-off: The basic idea of this hypothesis is that an increase in inflation Expectations will cause wages to rise (and consequently price increases) to be hired at any given unemployment rate that is the Phillips curve will shift upward. An increase in inflationary Expectations does not just happen however the results from the economy experiencing higher actual rates of inflation by moving leftward along the Phillips curve.
- Another explanation for the positive sloping Phillips curve is that the measured unemployment rate is now higher at any given state of labour market conditions. this implies a rightward shift of the Phillips curve that is the unemployment rate will now be higher for any given rate of weight change, other things being held constant. The rightward shift of the short-run Phillips curve will also cause the long-run Phillips curve to shift right.

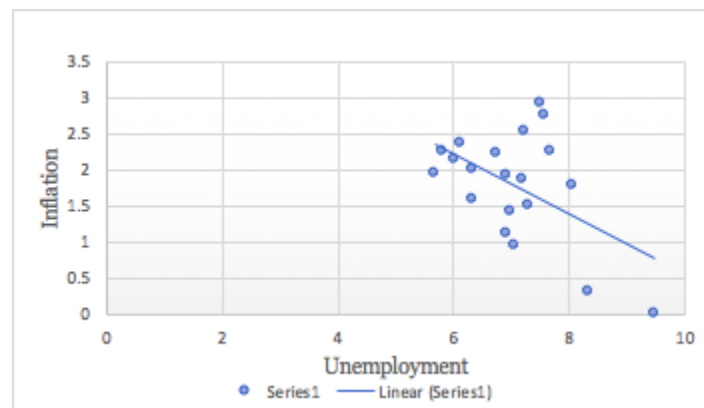
During the decade of the 1980s as well as the 1920s Canada experienced declining rates of both *inflation* and *unemployment*. Possible explanations for a flattened Phillips curve(as seen the Graph 2 in the excel sheet) can be:



- As we can see in the above graph that the Phillips curve for the term 1980 to 2000 is fairly flat This implies a weak correlation between inflation and the unemployment rates during this period. This learning may be related to a secular downtrend in imported good prices mismeasurement of economic slack in the post-crisis period demographic Trends increase automation or other reasons.

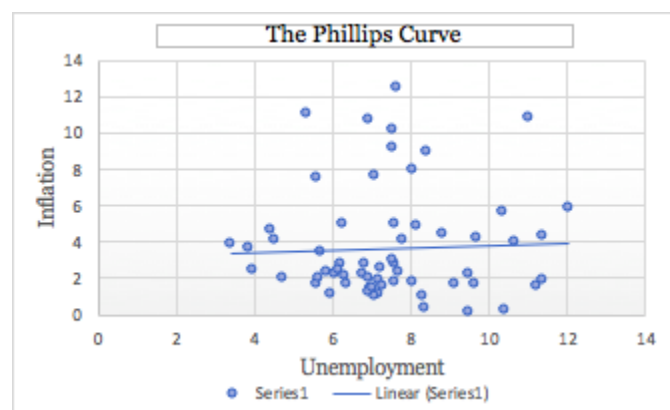
- The flattening of the curve most likely results from a domestic unemployment figure that doesn't capture global labour market competition. Prices aren't increasing as a result of rising employment because wages aren't increasing.

In the last 2 decades, we can see a clear inverse relationship between the unemployment rates and inflation rates in Canada. Possible explanations for a negatively sloped Phillips curve(as seen the Graph 3 in the excel sheet) can be:



- One of the reasons for the downsloping Phillips curve in the period 2000 to 2020 is the recession of 2008 which caused a downfall in the prices leading to low inflation rates and an increase in the unemployment rate of the economy.
- The adoption of explicit inflation targets in 1991 resulted in a decline of the inflation rates in Canada. An increase in technology in Canada led to the replacement of a lot of labour resulting in increased unemployment rates this also leads to a decline in the slope of the Phillips curve.

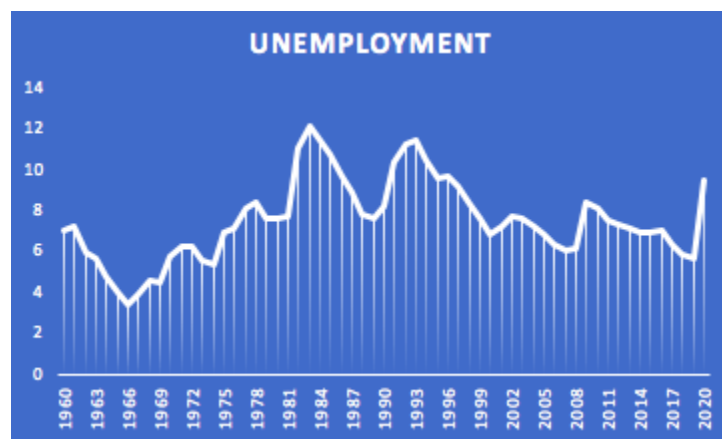
Now to analyse the Phillips curve of the whole period of 1960-2020:



- As we can see the Phillips curve for 1962 2020 is more or less flattened and a little positively sloped. The former assumption that the Phillips curve is negatively sloped doesn't hold true for Canada in the long term.

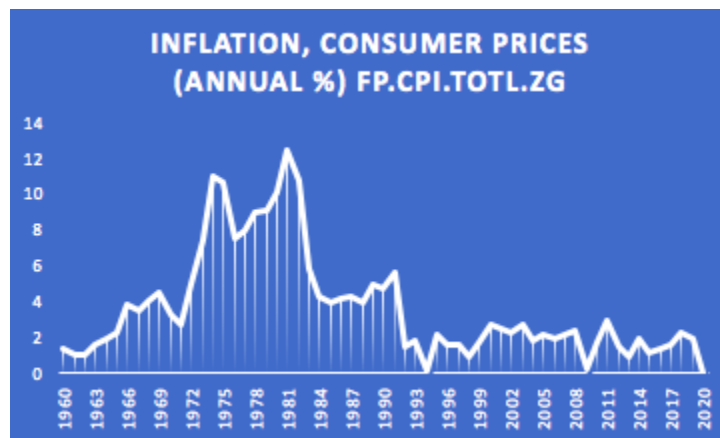
- In the former periods of 1960 to 1980 as we observe the Phillips curve is positively sloped owing to the inflationary expectations and labour market conditions.
- In the second half from 1980 to 2000 a flattened Phillips curve Due to demographic Trends and domestic unemployment.
- Finally, in the latter half from 2000 to 2020, we can see a negatively sloping Phillips curve due to the recession periods as well as declining employment due to an increase in technology.
- And analysing from these results we can say that the Phillips curve for Canada is flattened or mildly positive sloping.

Now to analyse the unemployment graph for the period 1960 to 2020 period.



From the graph given above, we can conclude that unemployment has been unstable throughout the period having up Trends and downtrends in no particular manner. However, we can see e that unemployment rates peak in the middle and thereafter decline towards the end.

Finally analysing the inflation trends in the 1960-2020 period.



Inflation rate as we can clearly see peaks during the 1970 to 1990 decade the after having a great drop and does being fairly inconsistent up until 2020.

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