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CONSTRUCTING AN ENHANCED UNEMPLOYMENT MODEL IN CANADA, USING ARDL

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Abstract

The unemployment rate in Canada has been increasing from 2019 to 2023 and this high volatility of Canada's unemployment rate has drawn researchers' attention in recent times. Quarterly data from OECD Data, World Bank, IMF Data and DataStream, were collected from 1993 to 2023, to examine the factors affecting unemployment rate in Canada, using the Unit Root Test and the Autoregressive Distributed Lag (ARDL) approach. ARDL was used

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to study the long run effect between unemployment rate and related factors. This approach can be used only when Unit Root Test had been applied. The results of the study revealed that only Gross Domestic Product (GDP) reported a short run causality with the unemployment rate in Canada while other independent variables did not. The study indicated no long run causality relationship between all independent variables, namely population, GDP, inflation, foreign direct investment and average wages, as the F-statistics was below the threshold value. This study added a new independent variable, that is average wages, in the study of unemployment rate in Canada. This study covered the period from 1993 until 2023.

Keywords: *Unemployment Rate, Population, Gross Domestic Product, Inflation, Foreign Direct Investment, Average Wages*

JEL Code *E31, E24*

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1. Introduction

The unemployment rate in Canada has shown a downward trend, from mid-1990s to 2019. Demographic development and lower payroll taxes are likely contributors to this declining trend. However, as shown in **Figure 1**, in the fourth quarter of 2018, the unemployment rate was between 5.6 percent and 6.7 percent. The increased number in the working-age population tended to lower unemployment rates (**Brouillette et al., 2019**). In April 2020, Canada lost a record number of jobs and the unemployment rate rose to 13 percent as businesses were forced to reduce payroll in response to lockdown measures, aimed at containing the spread of the COVID 19. According to Statistics Canada (2023), the number of employed people fell by nearly two million, which resulted in approximately three million people losing their jobs and millions more saw their workhours significantly reduced. The unemployment rate increased from 7.8 percent in March to 9.8 percent in April 2023 (**Lundy, 2020**).

According to CBC News, the unemployment rate for workers in Canada increased from 0.6 percent to 9.4 percent in August 2020 and it marked the highest level during that year. This revealed that overall employment dropped to the lowest level since that month. Canada's economy also reported losing 213,000 jobs since January 2023. In addition, Statistic Canada announced that 129,000 full-time jobs, along with 78,000 part time positions, were lost. While economists estimated that 175,000 jobs would be lost in the month, the actual number of jobs lost was higher than expected. Almost half of those who lost their jobs, were young workers aged between 15 to 24 years old.

One of the reasons, that led to the high unemployment rate in Canada, was the country's economic downturn since COVID-19 pandemic hit the entire world. This factor was due to the lockdown, that was imposed by the government to prevent the spread of the disease. As a result, many businesses in Canada were required to shut down and they had to cease operation. As a result, they were forced to lay off workers and close their doors across the country. The examples of the worst affected economic sectors, that caused many people to lose their jobs, were retail, food services and information, travel related and cultural industries (**Evans, 2021**). This situation also disrupted business activities and reduced the demand for

all business services, resulting in a decline in Canada's real GDP growth (**Bernard, Fell and Lin, 2021**).

The declining employment rate in Canada, brought about long-term consequence on the workers and businesses affected (**Jordan, 2021**). The increase in Canada's unemployment rate resulted in an economic crisis and the income gap between the rich and the poor became wider. According to CIBC Economics, based on Statistics Canada, all the jobs, lost in 2020, were among employees who earned less than average wages. This automatically widened the gap between these two groups (the rich and the poor) (**Bundale, 2021**). Further, most unemployed Canadians were struggling financially and said that they will not be able to afford this much longer. Unemployment reported severe financial consequences. To make ends meet, about 40 percent of unemployed Canadians were currently relying on their savings while 26 percent of them were relying on Canadian Emergency Response Benefit (CERB), 25 percent were relying on Employment Insurance (EI) and the other 23 percent were depending on financial assistance from family and friends (**Curic, 2020**).

2. Review of Literature

In the late 1960s, economists, Milton Friedman and Edmund Phelps, developed the unemployment rate theory and they found that the unemployment rate exercised significant impact on how economists thought about economic growth. The concept of a natural rate of unemployment is a throwback to the traditional pre-Keynesian economics, that dominated before and throughout the Great Depression. Unemployment occurs because of economic frictions and rigidities, that prohibit labour markets from operating smoothly. The level of labour-market frictions and rigidities defines the rate of so-called natural unemployment (**Cross, 1984**). According to **Nwoye and Ikechukwu (2018**), the findings revealed that population growth recorded bidirectional causal relationship with unemployment. **Yusuf (2021)** conducted a study on the effect of population growth on unemployment in Somalia. The study implemented time-series annual data from 1990 to 2019. The Autoregressive Distributed Lag Model (ARDL) bounds test was used to examine the long and the short run co-integration between the two variables. According to the findings, population growth reported long run co-integration relationship with unemployment. As a result, it shows that the population growth has a positive and significant long run relationship and great impact on unemployment. According to **Chand, Tiwari and Phuyal (2018**), there is a strong negative and significant long run relationship between GDP and unemployment rate. **Pasara and Garidzirai (2020)** found negative and significant relationship between GDP and unemployment in South Africa. This is because as the economy expands, more workers will be absorbed into the system which then lowers the unemployment rate. Further, they also found that that GDP reported short run causality with unemployment rate in South Africa.

Khumalo and Eita (2015) demonstrated that the relationship between inflation and unemployment in Swaziland was negative and insignificant in the long run. **Elliot (2015**) also concurred that a change in inflation had no effect on unemployment in Ghana and there was negative and insignificant long run relationship between inflation and unemployment. This is due to the rapidly rising labour population, that lacks the necessary skills to find work, the alarming rate of rural-urban movement and imprecise market information that resulted in a mismatch, which constructs the inflation to be unresponsive towards unemployment. **Abdulrahman, Sabil**

and Mohamed (2016) reported that inflation and unemployment rates in Sudan had no relationship in the short run, from 1992 to 2015. **Karimov, Dolgos and Pavlin (2020**) found negative and significant long run relationship between FDI and unemployment rate in Turkey, from 1980 until 2017. This was because new companies, established by foreign investors, reported positive effect on the host country's labour market and thus created employment. This proves that FDI has significant impact on reducing the unemployment rate and stabilizing Turkey's economy. The study, conducted by **Mkombe et al. (2020**), revealed that the relationship between FDI and unemployment in the Southern African Development Community (SADC) regions, was negative and insignificant relationship in the long run. This result might be related to the type of FDI, that flowed into the region, which was primarily made up of mergers and acquisitions that had lower capacity for job creation compared to Greenfield investments. **Korkmaz (2021**) found negative and insignificant relationship between average wages and unemployment in Turkey. This was due to the persistent financial issues among private companies in general.

Additionally, the fallen average wages will increase the unemployment rate in that country. The study also revealed that in Turkey, the average wages did not cause the unemployment rate in the short run, which implied that there was no short run causality between the variables. **Kim and Lim (2018)** argued that the average wages and unemployment reported positive significant long run relationship, in which an increase in one percent average wages will lead to an increase of 0.064 percent of the unemployment rate. This was because the minimum wage differed by countries.

3. Statement of the Problem

As the pandemic hit the entire world, the unemployment rate in Canada worsened and posed a threat to the country because long term unemployment caused adverse impact on lifetime income and young job seekers' well-being. The worsening conditions in Canada's labour market also affected the aggregate economy, that was weighing down productivity and undermining the country's workforce ability to accumulate human capital (Goldstein, 2020). Therefore, it is important to identify the key to the unemployment problem in Canada, in order to ensure sustainable economic growth. Hence this study aims to examine the impact of economic variables on unemployment rate in Canada.

4. Need of the Study

This study added a new independent variable, called average wages, in the study of unemployment rate in Canada. The period of analysis was from 1993 to 2023. This study can help policymakers to modify macroeconomic approaches, based on the significant variable influencing Canada's long-run unemployment rate. Hence this study examined the relationship between selected macroeconomic variables, in both short and long run, which influenced unemployment in the country.

5. Objectives of the Study

The general objective of this study was to examine the short run and long run equilibrium relationship between the unemployment rate and the independent variables in Canada, from 1993 to 2023.

6. Hypotheses of the Study

H : At least one independent variable has short run or long run equilibrium relationship with unemployment rate in Canada.

H_2: There is short run or long run equilibrium relationship between population and unemployment rate in Canada.

H_3: There is short run or long run equilibrium relationship between GDP and unemployment rate in Canada.

H_4: There is short run or long run equilibrium relationship between inflation and unemployment rate in Canada.

H_5: There is short run or long run equilibrium relationship between FDI and unemployment rate in Canada.

H_6: There is short run or long run equilibrium relationship between average wages and unemployment rate in Canada.

7. Research Methodology

7.1 Sample Selection

All the information utilized in this research, was based on secondary sources. The study gathered data related to key economic indicators, including population size, gross domestic product (GDP) growth rate, inflation levels, foreign direct investment (FDI), and average wage trends in Canada. These figures were obtained from credible sources such as government reports, financial institutions, and statistical databases. By incorporating multiple references, the study was designed to enhance the accuracy and reliability of the findings.

7.2 Sources of Data

All the economic variables were collected from data sites such as OECD Data (https://www.oecd.org/en/data.html), World Bank (https://data.worldbank.org/), IMF Data (https://www.imf.org/en/Data) and DataStream (https://www.lseg.com/en/data analytics/products). Besides, sources like books, newspapers, journals, and internet, that were relevant to the research area were also used.

7.3 Period of Study

The data employed in this study, consisted of time series data, for the period 1993 to 2023

7.4 Tools used in the Study

This study used EViews (Econometrics Views), to examine quantitative standards between socioeconomic relations and economic activities. ARDL (Autoregressive Distributed Lag) was used as a modelling technique in this study. It was used to examine the relationship between variables over different time periods. It was particularly useful for analyzing both short-run and long-run relationships between dependent and independent variables, even when the data reported mix of stationary and non-stationary properties.

The estimated economic model, developed in the study, was as follows:

$$URt = \beta_0 + \beta_1 POPt + \beta_2 GDPt + \beta_3 INFt + \beta_4 FDIt + \beta_5 AWt$$

8. Data Analysis and Interpretation

This study used Augmented Dickey-Fuller (ADF) and Philip Perron Test (PP), to discover stationarity and both methods of unit root found the data to be stationary, at 1% and 10%. Due to stationarity under both methods, a short run and long run relationship was tested between the variables, through a co-integration test.

According to **Table 1,** independent variables, namely, population (POP), inflation (INF), foreign direct investment (FDI) and average wages (AW), did not have a short run equilibrium relationship with unemployment rate (UR), except gross domestic product (GDP) and hence the null hypothesis (H_1) was rejected (**Table -3**). GDP reported short run equilibrium relationship with the unemployment rate and hence the null hypothesis (H_3) was rejected.

Population did not have short run equilibrium relationship with the unemployment rate in Canada and hence the null hypothesis (H_2)was accepted. This result was supported by **Yusuf (2021),** who found no short run equilibrium relationship between population growth and unemployment in Somalia. This result was supported by **Baba and Haszlienna (2021),** who established that the population growth did not have short run equilibrium relationship with unemployment rate in Malaysia. This was because population did not influence the unemployment rate in Malaysia. This result also was similar with the results by **Ali, Omar, and Yusuf (2021),** who demonstrated that there was no short run equilibrium relationship between population growth and unemployment rate in Zanzibar.

The gross domestic product (GDP) reported short run equilibrium relationship with the unemployment rate in Canada and hence the null hypothesis (H_3) was rejected. This was supported by **Pasara and Garidzirai (2020),** who found that the GDP reported short run equilibrium relationship with unemployment rate in South Africa. The study, conducted by **Salman and Shukur (2018),** also supported the result of this study since they revealed that there was short run equilibrium relationship between GDP and the unemployment rate in Finland. But the result was contrary to the study by **Padder and Mathavan (2021),** who found that the GDP did not have any short run equilibrium relationship with the unemployment rate in that country.

The study revealed no short run equilibrium relationship between inflation and unemployment rate in Canada and hence the null hypothesis (H_4) was accepted. This result was supported by **Umar et al. (2021),** who demonstrated that inflation did not cause unemployment in the short run. In addition, this result was similar to a study by **Sinha (2017),** who discovered that there is no short run equilibrium relationship between inflation and unemployment rate in India. But the study by **Sasongko and Huruta (2018),** contradicted this study and found short run equilibrium relationship between inflation and unemployment in Indonesia.

There was no short run equilibrium relationship between FDI and the unemployment rate in Canada and hence the null hypothesis (H_5) was accepted. This result was supported by **Strat, Davidescu and Paul (2015),** who found no equilibrium relationship in the short run between FDI and unemployment in six countries of the European Union. **Alalawneh and Nessa (2020)** also concurred that there was no short run relationship between FDI and unemployment in six countries of the Middle East and North Africa. In other words, FDI did not influence the unemployment rate in those countries in the short run. But **Polinon and Hakim (2019)** observed short run equilibrium relationship between FDI and unemployment in Asian countries. There was no short run equilibrium relationship between average wages and unemployment rate in Canada and hence the null hypothesis (H_6) was accepted. This result was supported by **Andriopoulou and Karakitsios (2021),** who revealed that in Greece, the average wages did not cause the unemployment rate in the short run. But **Noor (2019)** did not support the result of this study as he established that the average wages reported short run equilibrium relationship with unemployment in South Borneo, Indonesia.

The coefficient of ECT, as shown from **Table 2,** was statistically significant as it recorded a p-value of 0.0012, with a negative sign, which was desirable. The coefficient of ECT or the speed of adjustment was -0.9606, implying that the whole system was getting adjusted towards long run equilibrium, at the

speed of 96.06%. Further, since the F-statistic of 0.0008 was below the bound value, there was no long run equilibrium relationship between all independent variables, namely, population, GDP, inflation, FDI and average wages and unemployment rate in Canada. Therefore, the null hypotheses, which stated that all variables were equal to zero, cannot be rejected. In other words, there was no long run equilibrium relationship between all independent variables and the dependent variable.

9. Findings of the Study

This study examined the dynamic relationship between energy consumption and level of unemployment rates in Canada. This study used Augmented Dickey-Fuller (ADF) and Philip Perron Test (PP) methods to test the results and both methods found the data to be stationary at 1% and 10%. Due to stationarity under both methods, a short run and long run relationship was tested between the variables through the co-integration test. The co-integration test revealed that there were no long run relationships between the variables. Based on the results of the study, the study concluded that only GDP significantly affected the level of unemployment rates in the short run, based on different lag value and expected sign. In other words, GDP played an important role in decreasing the unemployment rate in Canada. The increase in GDP will help the country to reduce the unemployment rate problem. Meanwhile, it was found that there were no long run relationships between all the independent variables and unemployment rates in Canada.

10. Suggestions

There are few policy recommendations, based on the findings of this study. Firstly, government needs to ensure unemployed Canadians to meet all the requirements of various pandemic-related supports. Both the Canada Recovery Benefit and enhancements to employment insurance (EI) benefit claimants, actively seeking employment. Secondly, while programs such as the Canada Recovery Hiring Program can help, it is critical to note that certain incentives from employers, such as bonuses and increased wages, can further entice the unemployed Canadians to take jobs as it gives them an extra "push", especially those who can find work but are hesitant to accept offers. In addition, workers in high demand are expecting higher wages, better benefits and more flexibility. One of the most effective ways to address high unemployment combined with labour shortages, is to help unemployed Canadians get new skills they need to either transition to new jobs in different industries or update their skills to get new jobs in the same industry they worked in previously.

11. Conclusion

The results of the study revealed that there was short run equilibrium relationship between GDP and unemployment rate in Canada. Changes in GDP might be driven by household spending and exports. The increase in export activities will help the government to increase the GDP and reduce unemployment rate in Canada. Besides, export promotion helps reduce unemployment, especially when governments focus their promotion efforts on sectors where a country has a comparative advantage. Hence the government must increase the country's export activities to increase the GDP of the country. Meanwhile, other independent variables such as population, inflation, FDI and average wages, did not have any relationship with the unemployment rate in the short run. Besides, the diagnostic checking of long run equilibrium relationship revealed no long run equilibrium relationship between all the independent variables i.e. population, GDP, inflation, FDI and average wages and unemployment rate in Canada.

12. Limitations of the Study

There were several limitations in this study. Firstly, the data constraints. Due to the data constraints, only a small sample size was available. For a study, with a small sample size, there will be a high potential for the study to increase the margin of error and lessen the confidence level of the study. Next, the results and information obtained in this study, may differ with the results gained by other researchers in other countries. This is because all countries in the world have different economic situations and policy implications. Thus, the result of this study is not applicable to all countries. Finally, this study examined only five types of macroeconomic factors, that would affect the unemployment rate in Canada. There are other important factors, that were not included in this study such as interest rate, exchange rate, income and money supply. Therefore, this study may not be helpful for the researchers with different objectives.

13. Scope for Further Study

It is recommended that future studies should be done with larger sample size of data. The larger number of sample size will increase the accuracy of the results. A large sample size may allow researchers to control the error in the analysis. Other than that, an appropriate sample size is essential to draw effective research findings from a study. If the sample data did not represent the variables, it might lead to unreliable conclusions. Future studies should also add more independent variables, while examining the impact of economic variables on the unemployment rate in Canada.

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15. References

Abdulrahman, B. M., Sabil, A. A. & Mohamed, A. A. (2016). The relationship between inflation and unemployment in Sudan: An empirical analysis, 1992-2015. *Research in Economics and Management*. https://doi.org/10.22158/rem.v1n2p113

Alalawneh, M. & Nessa, A. (2020). The Impact of Foreign Direct Investment on Unemployment: Panel Data Approach. *Emerging Science Journal*. https://www.ijournalse.org/index.php/ESJ/article/view/387/pdf

Ali, O., Omar, M., & Yusuf, S. (2021). Population Growth and Unemployment in Zanzibar. *International Journal of Sciences: Basic and Applied Research (IJSBAR),* 59(2). https://www.researchgate.net/publication/353378247_Population_Growth_and_Unemployment_in_Zanzibar

Andriopoulou, E. & Karakitsios, A. (2021). Unemployment transitions and the role of minimum wage: from pre-crisis to crisis and recovery. *Athens University of Economics and Business.* http://www2.aueb.gr/conferences/Crete2021/Papers/Karakitsios.pdf

Baba, J. F., & Haszelinna, D. (2021). Economic Determinants of Unemployment in Malaysia: Short and Long Run Equilibrium relationship. *Journal of Public Administration and Governance*, 11(1). Retrieved from https://doi.org/10.5296/jpag.v11i1.17794

Bernard, M., Fell, G. & Lin, V. (2021). Fallout from the COVID-19 pandemic. A look back at selected industries in the service sectors in 2020. *Statistics Canada.* https://www150.statcan.gc.ca/n1/pub/45-28-0001/2021001/article/00020-eng.htm

Brouillette, D., Marie-Noëlle, R., Laurence, S.,, Pierre, S., Bassirou, G., and Elise, N., (2019). The trend unemployment rate in Canada: Searching for the unobservable. Bank

of Canada Staff Working Paper. https://www.bankofcanada.ca/2019/03/staff-working-paper-2019-13/

Bundale, B. (2021). All the jobs lost in 2020 among workers with wages below Canadian average: report. CTV News. https://www.ctvnews.ca/business/all-the-jobs-lost-in-2020-amongworkers-with-wages-below-canadian-average-report-1.5317194

Cross, R. (1984). Friedman and Phelps on the natural rate of unemployment. *Atlantic Economic Journal,* 12(2), 47-53

Curic, A. (2020). NEW POLL: COVID-19 Pandemic Having Severe Impacts on Unemployed Canadians. Globe Newswire. https://www.globenewswire.com/news-release/2020/12/09/2142314/0/en/NEW-POLL-COVID-19-Pandemic-Having-Severe-Impacts-on-Unemployed-Canadians.html

Evans, P. (2021). Canada's economy lost 207,000 jobs last month. CBC News. https://www.cbc.ca/news/business/canada-jobs-april-1.6017618

Goldstein, L. (2020). We're number one! Highest unemployment rate in the G7. *Toronto Sun.* https://torontosun.com/opinion/columnists/goldstein-were-number-one-highest-unemployment-rate-in-the-g7

Johnny, N., Timipere, E. T., Krokeme, O. & Markjackson, D. (2018). Impact of Foreign Direct Investment on Unemployment rate in Nigeria (1980–2015). Research Gate. https://www.researchgate.net/publication/325123904_Impact_of_Foreign_Direct_Investment_on_ Unemployment_rate_in_Nigeria_1980-2015

Jordan. (2021). Canada lost 207,000 jobs in April amid renewed COVID-19 restrictions. Global News. https://globalnews.ca/news/7842060/april-jobs-data-statistics-canada/amp/

Karimov, M., Dolgos, A. P. & Pavlin, R. K. (2020). An Empirical Analysis of the Relationship between Foreign Direct Investment and Unemployment Rate: Evidence from Turkey. *European Research Studies Journal*, XXIII (1), 453-464,

Khumalo, Z. Z. & Eita, J. H. (2015). Determinants of Unemployment in Swaziland. *Journal of Applied Sciences*. 15(9), 1190-1195

Korkmaz, O. (2021). Is Labor Productivity Linked To Real Wages? An Empirical Study of the Turkish Manufacturing Sector. *Journal of Productivity*. https://dergipark.org.tr/tr/download/article-file/1804785

Lundy, M. (2020). Two million Canadian jobs lost in April as unemployment rate reaches 13 percent. The Globe and Mail. https://www.theglobeandmail.com/business/article-twomillion-canadian-jobs-lost-in-april-as-unemployment-rate-reaches/

Noor, M. (2019). Granger Equilibrium relationship between Minimum Wage and Labor Supply in South Borneo, Indonesia. *Journal of Emerging Technologies and Innovative Research (JETIR)*. http://repository.untag-sby.ac.id/8831/13/JURNAL%20INTERNASIONAL.pdf

Padder, A. H. & Mathavan, B. (2021). The Relationship between Unemployment and Economic Growth in India: Granger Equilibrium relationship Approach. Research Gate. https://www.researchgate.net/publication/355980692_The_Relationship_between_Unemployment_ and_ Economic_Growth_in_India_Granger_Equilibrium relationship_Approach

Pasara, M. T., & Garidzirai, R. (2020). Equilibrium relationship Effects among Gross Capital Formation, Unemployment and Economic Growth in South Africa. *Economies*. 8(2), 26 https://doi.org/10.3390/economies8020026

Polinon, M. H. & Hakim, T. A. (2019). The Long Run and Equilibrium relationship. Relationship between Entry Modes of Foreign

Direct Investment (FDI) Towards Unemployment: Evidence in Developing and Developed Asian Countries. Malaysian. *Journal of Business and Economics.* https://jurcon.ums.edu.my/ojums/index.php/mjbe/article/view/2079/1388

Salman, A. K., & Shukur, G. (2018). Investigating Causal Relations between the GDP Cycle and Unemployment: Data from Finland. *International Journal of Economics and Finance.* https://doi.org/10.5539/ijef.v6n4p118

Sasongko, G., & Huruta, A. D. (2018). The Equilibrium relationship between Inflation and Unemployment: The Indonesian Evidence. Vilnius Gediminas Technical University. https://doi.org/10.3846/btp.2019.01.

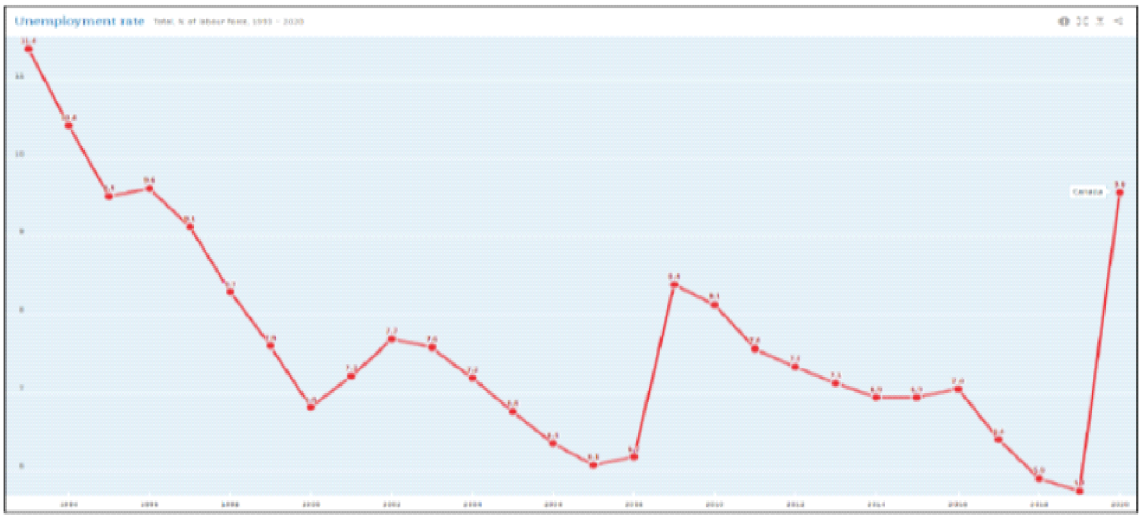
Sinha, A. (2017). Relationship between Inflation and Unemployment in India: Vector Error Correction Model Approach. International Journal of Advance Research and Innovative Ideas in Education. http://ijariie.com/AdminUploadPdf/Relationship_between_Inflation_and_ Unemployment_in_India__Vector_Error_Correction_Model_Approach_ijariie7168.pdf

Strat, V. A., Davidescu, A., & Paul, A. M. (2015). FDI and the Unemployment - A Equilibrium relationship Analysis for the Latest EU Members. *Procedia Economics and Finance.* https://doi.org/10.1016/s2212-5671(15)00448-7

Umar, S. S., Abdulazeez, S. A., Damisa, A. J., Bako, S. S., & Samuel, A. N. (2021). Assessing Linear Interdependence between Inflation and Unemployment Rate in Nigeria. *International Journal of Intellectual Discourse (IJID).* https://ijidjournal.org/index.php/ijid/article/view/12

Yusuf, S. M. (2021). The Effect of Population Growth on Unemployment in Somalia: ARDL Approach Department of Statistics and Planning. https://www.researchgate.net/publication/354555484_The_Effect_of_Population_Growth_on_Unemployment_in_Somalia_ARDL_Approach

Figure - 1: Unemployment Rate in Canada from Year 1993 to 2023



Source : OECD Data (2023)

Table-1: Results of Short Run Equilibrium Relationship Analysis between Unemployment Rate and Independent Variables in Canada

	Dependent Variable	Independent Variables	p-value	Result
1	Unemployment rate (UR)	Population (POP)	0.2589	Does not have short run equilibrium relationship
2		Gross Domestic Product (GDP)	0.0031	Have short run equilibrium relationship
3		Inflation (INF)	0.5228	Does not have short run equilibrium relationship
4		Foreign Direct Investment (FDI)	0.5878	Does not have short run equilibrium relationship
5		Average Wages (AW)	0.5796	Does not have short run equilibrium relationship

Source: EViews (Econometrics Views) by using ARDL (Autoregressive Distributed Lag) as a modelling technique

Table-2: Long Run Equilibrium Relationship Analysis between Unemployment Rate and Independent Variables in Canada

Dependent Variable	Independent Variables	ECT(-1)	p-value	F-statistic
Unemployment rate (UR)	Population (POP)	-0.9606	0.0012	0.0008
	Gross Domestic Product (GDP)			
	Inflation (INF)			
	Foreign Direct Investment (FDI)			
	Average Wages (AW)			

Critical Values for F stat	Lower I(0)	Upper (1)
10%	1.96	3.06
5%	2.22	3.39
1%	2.79	4.1

Note: 1. The critical values are based on Pesaran et al. (2001), case III: unrestricted intercept and no trend. 2. k is a number of variables equivalent to 8. 3.**,*** represent 5% and 1% significance, respectively. Estimation is based on Schwarz Criterion (SC).

Source: EViews (Econometrics Views) by using ARDL (Autoregressive Distributed Lag) as a modelling technique

Table - 3: Summary of Hypothesis Testing for Short Run and Long Run Equilibrium Relationship between Unemployment Rate and Independent Variables in Canada

	Hypotheses in the Study	Decision
1.	H0: There is no short run or long run equilibrium relationship between all independent variables and unemployment rate in Canada. H1: At least one independent variable has a short run or long run equilibrium relationship with unemployment rate in Canada.	Reject H0
2.	H0: There is no short run or long run equilibrium relationship between population and unemployment rate in Canada. H1: There is a short run or long run equilibrium relationship between population and unemployment rate in Canada.	Fail to reject H0
3.	H0: There is no short run or long run equilibrium relationship between GDP and unemployment rate in Canada. H1: There is a short run or long run equilibrium relationship between GDP and unemployment rate in Canada.	Reject H0
4.	H0: There is no short run or long run equilibrium relationship between inflation and unemployment rate in Canada. H1: There is a short run or long run equilibrium relationship between inflation and unemployment rate in Canada.	Fail to reject H0
5.	H0: There is no short run or long run equilibrium relationship between FDI and unemployment rate in Canada. H1: There is a short run or long run equilibrium relationship between FDI and unemployment rate in Canada.	Fail to reject H0
6.	H0: There is no short run or long run equilibrium relationship between average wages and unemployment rate in Canada. H1: There is a short run or long run equilibrium relationship between average wages and unemployment rate in Canada.	Fail to reject H0

Source : EViews (Econometrics Views) by using ARDL (Autoregressive Distributed Lag) as a modelling technique