

Canada in the 21st century: A macroeconomic analysis by province/territory

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1. Project overview

2. Data analysis

3. Data visualization

4. Conclusion

Executive summary

The economy is central to the lives and wellbeing of individuals.

Its trends describe the constantly changing environment within which people live their daily lives.

This project provides **information** about the main aspects **of the economy in Canada's national accounts from the year 2000 to 2019**.

Project significance

Consumer -> savings, investments and long-term financial planning.

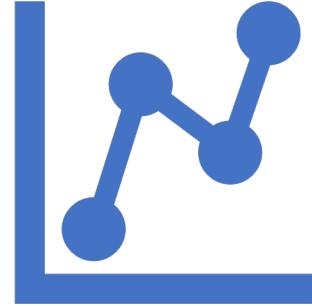
Policymakers -> interest rates, tax and trade policies.

Workers -> business conditions and investment decisions.

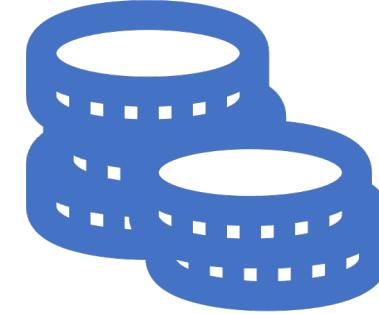
Governments -> shape policy and public spending.

Academia -> research and inform.

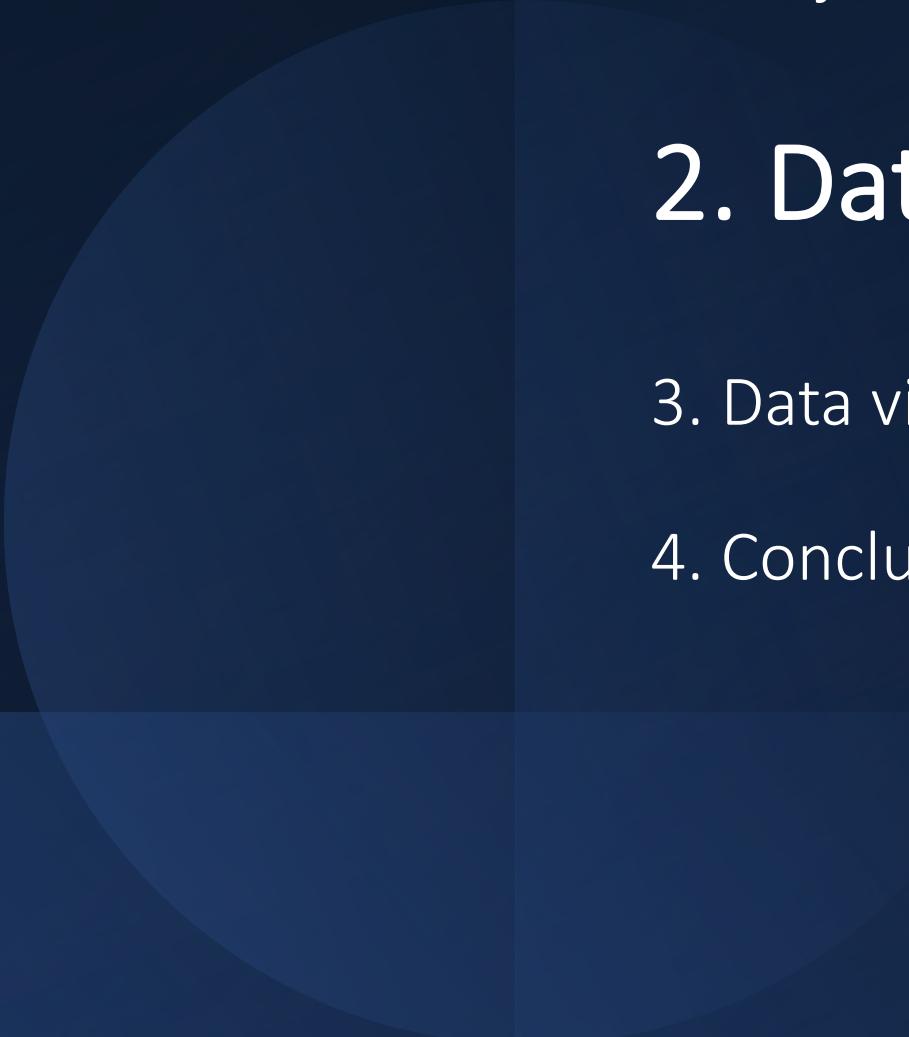
Project objective



Provide **access** to accurate, up-to-date macroeconomic data and information for past and current analysis.



Offer **insight** into the way the economy works.



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Data set

- 1. Gross domestic product, expenditure-based, provincial and territorial, annual (x 1,000,000). Table 36-10-0222-01.**
- 2. Population estimates on July 1st, by age and sex. Table 17-10-0005-01.**
- 3. Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000). Table 36-10-0402-01.**
- 4. Labour force characteristics by industry, annual. Table 14-10-0023-01.**
- 5. Average weekly earnings by industry, annual. Table 14-10-0204-01.**
- 6. Consumer Price Index, annual average, not seasonally adjusted. Table 18-10-0005-01.**

Data analysis

Dataset loading -> CSV format.

Dataset exploration -> Irrelevant values, incorrect data types.

Data wrangling -> Merging and creating data frames.

Data set description

```
eco.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 777 entries, 0 to 1007
Data columns (total 16 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Geography        777 non-null    object  
 1   Year             777 non-null    object  
 2   Real GDP         777 non-null    float64 
 3   Nominal GDP      777 non-null    float64 
 4   Population       756 non-null    float64 
 5   Industry          693 non-null    object  
 6   Employed         693 non-null    float64 
 7   Unemployed       693 non-null    float64 
 8   Unemployment rate 693 non-null    float64 
 9   All industries   684 non-null    float64 
 10  Goods-producing sector 684 non-null    float64 
 11  Service-producing sector 684 non-null    float64 
 12  All-items        756 non-null    float64 
 13  Gasoline          756 non-null    float64 
 14  Real GDP per Capita 756 non-null    float64 
 15  Nominal GDP per Capita 756 non-null    float64 
dtypes: float64(13), object(3)
memory usage: 103.2+ KB
```

```
industry_gdp.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 7917 entries, 0 to 7916
Data columns (total 4 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Geography        7917 non-null    object  
 1   Industry          7917 non-null    object  
 2   Year             7917 non-null    object  
 3   Industry GDP     7917 non-null    float64 
dtypes: float64(1), object(3)
memory usage: 247.5+ KB
```

- **Categorical data->** Geography and industry.
- **Numerical data ->** Year, real and nominal GDP and GDP per Capita, population, employed and unemployed persons, employment rate, weekly earnings by industry and gasoline and general inflation.

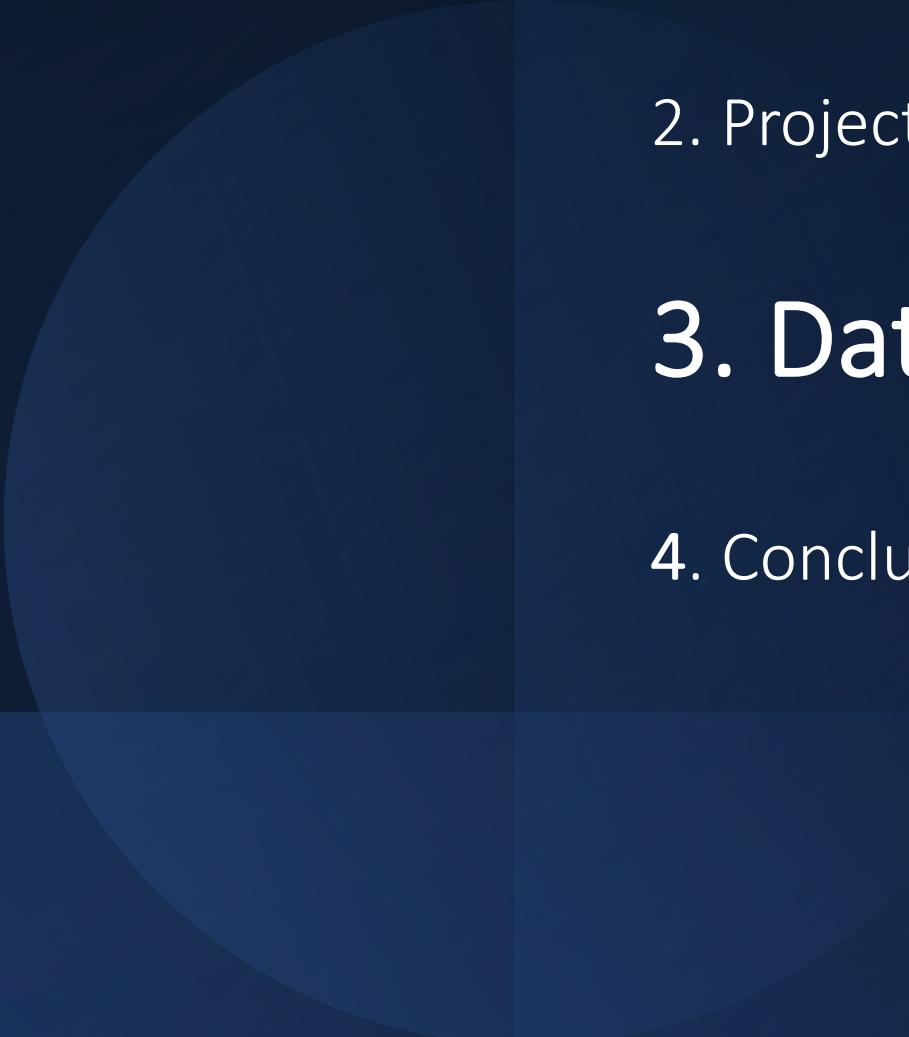
Research questions

Macroeconomic analysis broadly focuses on three aspects: **national output** (measured by Gross Domestic Product), **unemployment**, and **inflation**.

GDP refers to the total amount of goods and services a country produces.

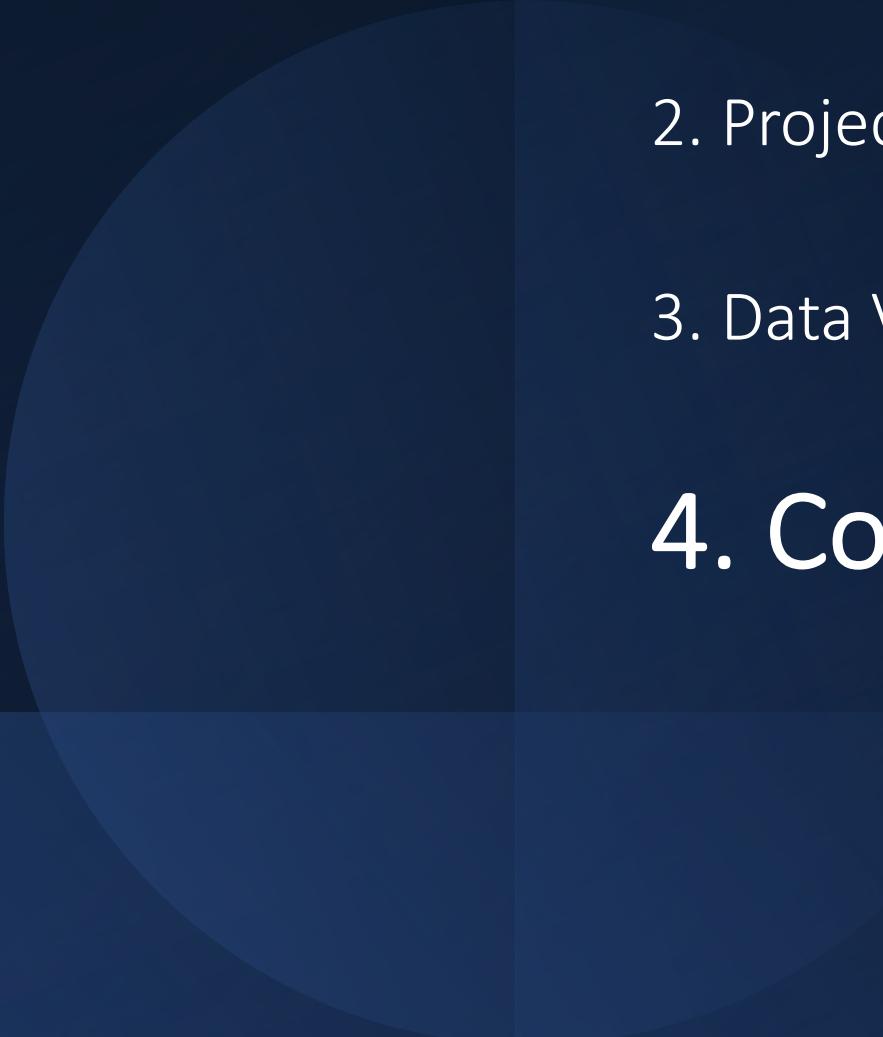
The **unemployment rate** indicates how many people from the labour force are unable to find work.

The **inflation rate** is a measure of the rate at which prices rise.

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Dashboard live demo

- DASHBOARD

- 
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Summary and Conclusion

- The analysis and dashboard developed can be used to **forecast** economic conditions to help consumers, firms, and governments **make better decisions**.
- For **policy analysis** and for **econometric modelling** and **hypothesis testing** by federal and provincial government officials, businesspeople, academics, economists and international organizations.

Next steps

