

ECON 203: Introduction to Macroeconomics

Anthony Bourboujas

May 7, 2022

1 What macroeconomics is all about

Macroeconomics is the study of the determination of economic aggregates, such as total output, total employment, the price level, and the rate of economic growth.

A full understand of macroeconomics requires understanding the nature of short-run fluctuations as well as the nature of long-run economic growth.

1.1 Key macroeconomics variables

1.1.1 National product and national income

National product or output: measure of the total national production of goods and services.

National income: measure the national income that is generated from the national production.

Nominal national income: total national income measured in current dollars. Also called *current-dollar national income*.

Real national income: national income measured in constant (base-period) dollars. It changes only when the quantity of the national production changes. Also called *constant-dollar national income*.

GDP The most commonly used measure of national income is called the **Gross Domestic Product (GDP)** (*Produit Intérieur Brut (PIB) en français*). The major movement of real GDP is a positive trend that increased real output by approximately 4 times since 1965 and is referred as long-term economic growth. Real GDP also shows short-term fluctuations around the trend.

The business cycle is the fluctuations of the real national income around its trend value that follow a more or less wavelike pattern. It is composed of 4 patterns:

- Trough: unemployed resources, low output, unused productive capacity, low profits, fear of making new investments.
- Recovery: rundown/obsolete equipment replaced, rise in employment, income and consumer spending, investments are made, production increases.
- Peak: existing capacity used to high degree, labour and raw materials shortages.
- Recession: fall in real GDP for 6 months, falls of output, employment and household incomes, profit drop,

unused capacity

Potential output and the output gap The potential output (Y^*) is the real GDP that the economy would produce if its productive resources were fully employed. Also called potential GDP.

The output gap is the actual output Y subtracted by the potential output Y^* .

$Y < Y^*$: recessionary gap, the economy's resources are not fully employed.

$Y > Y^*$: inflationary gap, excess of what the economy can product on a sustained basis.

Why national income matters National income is an important measure of economic performance and the long-run trend in real per capita is an important determinant of standard of living

1.1.2 Employment, unemployment, and the labour force

Employment: the number of adult workers^[1] who have jobs.

Unemployment: the number of adult workers^[1] who are not employed and are actively searching for a job.

Labour force: the total number of persons who are either employed or unemployed.

Unemployment rate: unemployment as a fraction of the labour force.

$$\text{Unemployment rate} = \frac{\text{Number of people unemployed}}{\text{Number of people in labour force}}$$

Frictional, structural and cyclical unemployment

When the economy is at potential GDP, the job market is at full employment. However, there can still be unemployment due to 1 reasons:

Frictional unemployment: natural turnover in the labour market which leave some people without a job for some period of time.

Structural unemployment: mismatch between jobs and workers.

When the real GDP is less than the potential GDP, there is cyclical unemployment: the unemployment is subject

^[1]Defined in Canada as workers aged 15 and over

to seasonal fluctuations or simply the rises and falls of the job market and the business cycle.

Why unemployment matters Unemployment has an enormous social significance as it comes with loss of income and output in the short-term, but also long-term unemployment tends to increase crime, mental illness, and general social unrest.

1.1.3 Productivity

Productivity: a measure of the amount of output that the economy produces per unit of input.

Labour productivity: level of real GDP divided by the level of employment (GDP per worker) or total hours worked (GDP per hour worked).

There has been a significant increase in the labour productivity over the past 40 years, which has led to the largest cause of rising material living standards over this long period of time.

1.1.4 Inflation and price level

Price level: average level of all prices in the economy, expressed as an index number.

Inflation: a rise in the average price level.

Consumer Price Index (CPI): an index of the average prices of goods and services commonly bought by households.

Remark. Since the price level is measured with an index number, its value at any specific time has meaning only when it is compared with its value at some other time.

The rate of inflation can be computed between year a and the next year b with the CPI data:

$$\text{Rate of inflation} = \frac{\text{CPI}_b}{\text{CPI}_a} - 1$$

Why inflation matters Money is valued not for itself, but for what can be bought with it. The purchasing power of money is the amount of goods and services that can be purchased with a unit of money. The inflation reduces the purchasing power of money, as well as the real value of any fixed sum in nominal terms (\$ 1 today has less real value than \$ 1 200 years ago).

If households and firms fully anticipate inflation over the coming year, they are able to adjust many nominal prices and wages to maintain their real values. However, unanticipated inflation generally leads to more changes in the real value of prices and wages. Some adjustment are made but not that all that would be required to leave the economy's allocation of resources unaffected.

1.1.5 Interest rates

Nominal interest rate: price paid per dollar borrowed per period of time.

Real interest rate: nominal rate of interest adjusted for the change in the purchasing power of money. Equal to the nominal interest rate subtracted by the rate of inflation.

The burden of borrowing depends on the real rate of interest and not the nominal one.

1.1.6 Exchange rates and trade flows

Exchange rate

Exchange rate: number units of domestic currency required to purchase one unit of foreign currency.

Foreign exchange: foreign currencies that are traded on the foreign-exchange market.

Foreign-exchange market: the market in which different national currencies are traded.

Depreciation and appreciation

Depreciation: rise in the exchange rate as it takes more units of domestic currency to purchase one unit of foreign currency.

Appreciation: fall in the exchange rate as it takes fewer units of domestic currency to purchase one unit of foreign currency.

Trade flows: exports and imports In Canada, the path of the trade-weighted exchange rate is virtually identical to the Canadian-US exchange rate, reflecting the very large proportion of total Canadian trade with the United States.

Net exports: difference between exports and imports, and are often called the trade balance.

Canada has long been a trading nation, and its imports and exports have increased fairly closely in step with each other over the past 45 years. The trade balance has fluctuated mildly over the years, but it has stayed small relative to the total GDP.

1.2 Growth versus fluctuations

1.2.1 Long-term economic growth

Long-term trends of rising total output and output per person have meant rising average living standards. Long-term growth receives less attention in the media but has more importance for a society's living standards from generation to generation.

There is considerable debate regarding the ability of government policy to influence the economy's long-run rate of growth.

1.2.2 Short-term fluctuations

Short-term fluctuations lead economists to study business cycles, and to debate about the effectiveness of monetary and fiscal policy in influencing these fluctuations.

Some economists argue that despite the power of policy to affect the economy, governments should not attempt to “fine-tune” the economy by making frequent changes in spending and taxing.

2 The measurement of national income

2.1 National output and value added

2.2 National income accounting: the basics

2.3 National income accounting: some further issues

3 The simplest short-run macro model

3.1 Desired aggregate expenditure

3.2 Equilibrium national income

3.3 Changes in equilibrium national income