

What is Macroeconomics?

1. Macroeconomics

Macroeconomics: the study of the major economic totals (aggregates). Issues involving the overall economic performance of the nation:

- do people find it easy or difficult to find jobs?
- on average, are prices rising quickly, slowly, or not at all?
- how much total income is the nation producing per year, and how rapidly is total income growing?
- is the interest rate charged to borrow money high or low? rising or falling?
- is the government spending more than it collects in tax revenue?
- is the nation as a whole accumulating assets in other countries or is it becoming more indebted to them?
- what level is the Australian dollar? will it rise or fall?

Each of these seven questions involves a central macroeconomic concept. Basic task of short-term macroeconomics is answer the two questions:

1. What causes output and employment to fluctuate?
2. How should monetary and fiscal policymakers respond to these fluctuations?

We are also interested in the *long-run* issues of the wealth of nations:

- why do long-term national growth rates differ?
- what are the costs of long-term growth?

From the perspective of non-Treasury managers, we focus on the first question, and only look at the second in an attempt to understand how government responses will, in turn, affect macro variables.

Definitions:

1. The *unemployment rate* is the number of jobless individuals who are actively looking for work (or are on temporary layoff), divided by the total of those employed and unemployed.
2. The *inflation rate* is the percentage rate of increase in the economy's average level of prices.
3. *Productivity* is the average amount of output produced per employee or per hour of work.
4. The *interest rate* is the percentage rate per year (normally) that is paid by borrowers to lenders.
5. The *government budget deficit* is the excess of government expenditures (on goods, services, and transfer payments) over the government's tax revenues.
6. The *foreign trade deficit* is the excess of the nation's imports of goods and services over

its exports of goods and services.

Macroeconomics deals with totals or aggregates: the total amount for the economy as a whole.

Other aggregates, apart from the six above, are: total *wealth*, *money*, *income*, and *business investment*; the *exchange rate* is a single price which however affects the aggregate economy.

Macroeconomics — the economics of the economy as a whole — and microeconomics — the economics of the single market — are not incompatible, indeed, there is a strong effort to build macroeconomic theory founded on microeconomics.

Macroeconomics simplifies by ignoring differences among individual households. Macroeconomics is important — and even interesting — because it affects all of us. By learning a few basic macroeconomic relations, you can quickly learn how to sift out the irrelevant details in the news in order to focus on the few key items that foretell where the economy is going. Which national, business, and personal goals can be attained, and which are pipedreams is also possible.

See: • the last two pages of *The Economist*, and
• the third last page of the *Australian Financial Review* on Fridays

for the latest figures (measurements) of the above variables.

2. Gross Domestic Product

To understand the behaviour of the six key aggregates above: a measure of the economy as a whole: *gross domestic product* (GDP). GDP is of interest as a means to the end of understanding the six or seven central aggregates that affect households and firms.

Gross domestic product is a measure of the total value of goods and services produced in a country in a single year. Another term, *gross national product* (GNP), is the GDP plus the income accruing to Australian residents from investments abroad, less the income earned in Australia owing to overseas residents.

Non-farm product is GDP excluding the value of goods and services produced in the farm sector, surprisingly. *Nominal GDP* is the value of GDP in current (actual) prices. *Real GDP* is the value of GDP in constant prices.

A country's rate of growth is generally the annual percentage increase in real GDP. Tables on GDP, both real and nominal, are published quarterly by the ABS in tables known as the *National Accounts*.

3. Prices and Inflation

The *implicit GDP deflator* is the economy's aggregate price index, and is defined as the ratio of nominal GDP to real GDP. The implicit GDP deflator is the ratio of prices charged in each year to those charged in the base year. The *inflation rate* is the percentage rate of change of the implicit GDP deflator. Movements in the implicit GDP

deflator reflect changes not only in consumer goods and services but also in capital goods, exports, and government services. The implicit GDP deflator reflects price changes only of goods and services produced in Australia.

The best known price index is the *consumer price index* (CPI), the weighted average of the prices of a broad range of goods and services purchased by households. (The weights are given in the attached table.)

There are other price indices: the *implicit price deflator for personal consumption* is calculated by dividing the estimate of value of household consumption expenditure by the estimate of the quantity of goods and services consumed.

Movements in this deflator reflect movements in the prices of consumer goods, both produced in Australia and imported.

The *gross national expenditure* (GNE) is the sum of consumption, investment, and government expenditure. Movements in the *implicit GNE deflator* reflect movements in the prices of all goods and services absorbed in Australia, both those produced in Australia and those imported; it doesn't include the prices of exported goods.

4. Employment and the Labour Force

People in Australia are said to be *employed* if they fulfil various conditions including the following:

- they must be aged 15 or more;

- they must have worked for one hour or more, for pay or profit, or they must have been on leave from a job where they receive pay or profit.

Unemployed are those aged 15 years or more who are not employed but are actively seeking employment. The *labour force* are all who are either employed or unemployed. The *unemployment rate* is the number of unemployed people expressed as a percentage of the labour force.

5. Productivity

Total labour productivity is real GDP divided by employment. *Labour productivity in the non-farm sector* is real non-farm product divided by employment (not by total employment excluding farm workers, although that would be preferable).

New machines and inventions tend to raise labour productivity by helping workers produce more.

6. The External Accounts

Australia's external accounts track transactions between Australian residents and people overseas.

The *trade balance or the balance on goods and services account* for a particular period (usually a year) is the value of Australia's exports of goods and services less the value of Australia's imports and goods and services.

The *current account* is equal to the trade balance plus interest and dividend payments

received by Australian residents from abroad minus interest and dividend payments made by Australians to people overseas. It also includes some minor items, such as foreign aid. Recently Australia's current account has been in deficit, reflecting a deficit in the trade balance and an excess of interest and dividends payments out of Australia over those coming into Australia.

Australia's *net overseas debt* or *net foreign debt* is the amount (a *stock*) of money owed by Australian residents to people overseas minus the amount of money owed by people abroad to Australian residents.

Recently, Australia's current account deficits have been financed mainly by *overseas borrowing*, which has led to rapid accumulation of the net overseas debt. Another way to finance the current account deficit is *foreign equity inflow*, which is money paid by foreigners for Australian assets.

The *terms of trade* is an index of the prices of exports divided by an index of the prices of imports. As a relatively small country, Australian firms have little market power on world markets, and so we have little or no control over our terms of trade — we are a price taker.

7. Australian Macroeconomic Variables

To complement the tables on the USA, Canada, Japan, France, (West) Germany, Italy, and the U.K. — the so-called Group of Seven, or G-7 — presented in Appendices A and B of Gordon, I attach a table of the corresponding Australian

variables over the period 1960–1991, without figures on Labour Productivity and Labour Share (of which more anon.). These figures mainly appear in the *OECD Main Economic Indicators*, plus the *Reserve Bank of Australia Bulletin*.

8. Six Macroeconomic Puzzles

8.1 *Why has the unemployment rate been so high and so variable?*

The unemployment rate is the mirror image of real GDP, rising when real GDP falls and vice versa.



As the diagram shows, from less than 2% in the 1960s, unemployment rose through the 1970s, and reached a high with the recession of 1983, before falling until the late 1980s, after which it swiftly rose, but is now slowly falling. There are two parts to this puzzle:

- a. Why is unemployment so volatile?
- b. Why has it risen over the past 25 years, with an apparent tendency to rise higher with each trough of the business cycle? Even at the height of the boom in 1989, the level of unemployment, although lower than 1983, was still about the same level as the height of 1980.

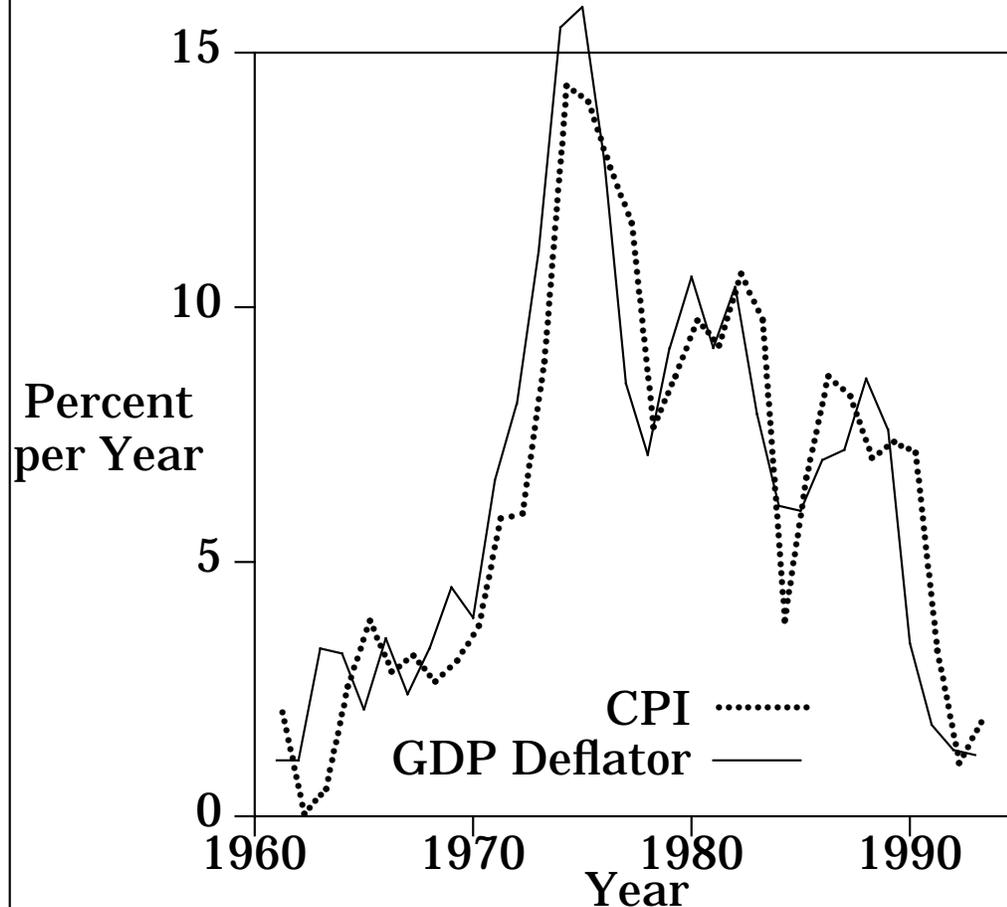
8.2 Why has the inflation rate been so high and variable?

The inflation rate, calculated from the GDP Deflator in the Table, is given in the following diagram.¹ Is there a relationship between the high rates of inflation (peaks in 1974, 1982, and 1986) and the unemployment levels of the previous diagram? What has resulted in the peaks and troughs of Australian inflation?

Why has the inflation rate been so high and volatile, especially after the mid-1970s? If the

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1. For 1991 the inflation rate 1.8% p.a. is calculated as

$$\frac{142.8 - 140.2}{\frac{1}{2} \times (142.8 + 140.2)} \times 100\%$$



Australian Inflation (GDP Deflator v. CPI)

government in Canberra responds to high inflation with policies which indirectly result in higher unemployment, then it is important to understand what causes inflation. Will the current low level of inflation be sustainable when the economy “picks up”? (That is, when unemployment falls and the GDP growth rises.)

8.3 What determines productivity growth?

The rate of productivity growth determines how rapidly the well-being of the average citizen increases. Will our children enjoy higher living standards than we do? The answer will depend in part on whether productivity growth grows or not.

Productivity is very difficult to measure, but the ABS publishes quarterly data in ABS 5222.0 and 5206.0. The figure attached (from McDonald, Package 10) shows the fall in labour productivity in the non-farm sector since 1963. She identifies a 3.1%p.a. growth rate until 1971, a 2.1%p.a. growth rate until 1979, and a 1.2%p.a. growth rate more recently.

Because the downturn in productivity (also experienced in other countries, such as the USA) extends over several business cycles (see the unemployment diagram above), its analysis requires different tools from business-cycle analysis.

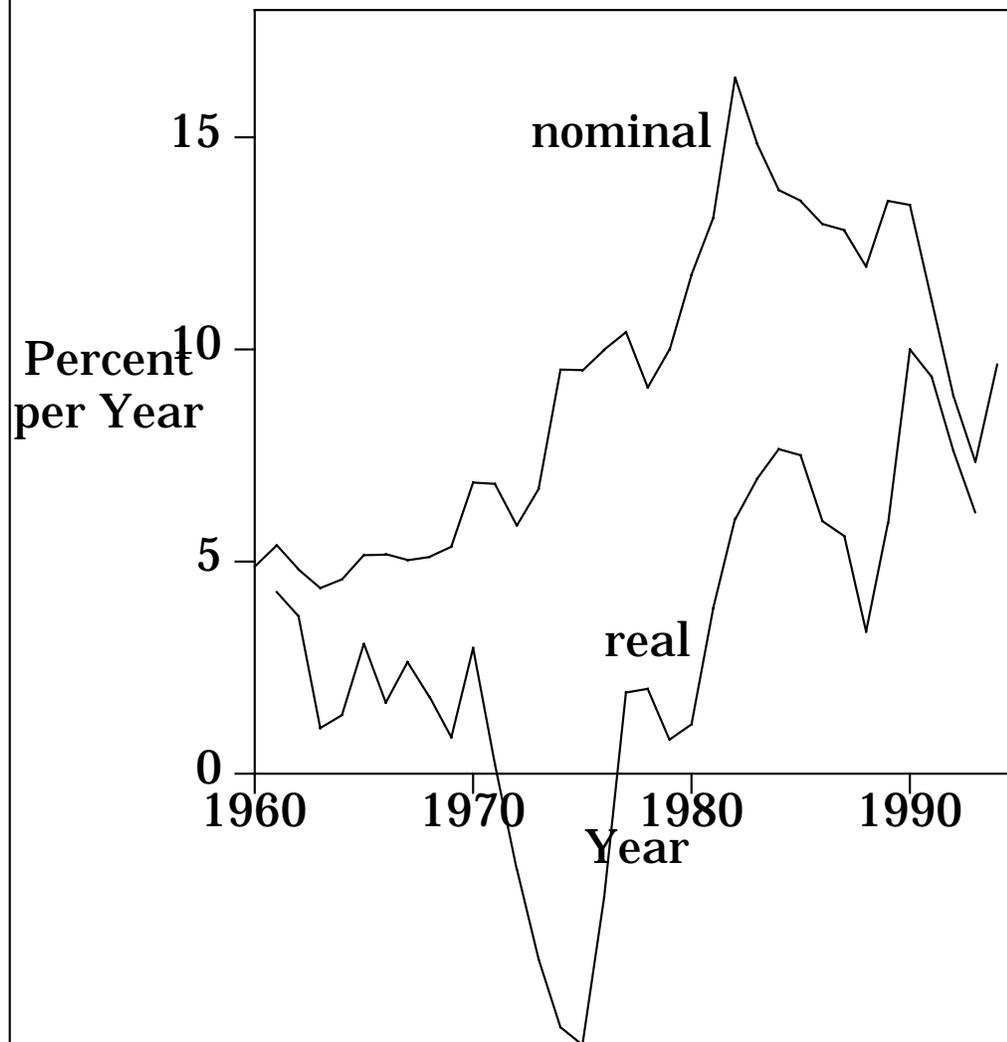
8.4 Why were interest rates in the 1980s higher than ever before?

The high inflation and unemployment figures are not historical records: unemployment was higher in the Great Depression of the 1930s and inflation has been higher at several times, most recently in the early 1950s. But the behaviour of interest rates in the 1980s was novel, with no precedent.

The following diagram represents real and nominal interest rates payable on 10-year Commonwealth bonds.

The *nominal interest rate* is the market interest rate actually charged; the *real interest rate* is the nominal interest rate minus the inflation rate (here, the GDP Deflator inflation rate).

High interest rates are a boon for lenders (those with substantial savings) but they impose a high



Australian Long-Term Interest Rates (10-yr Clth Bnds)

cost on borrowers, including many small businesses, which may contribute to their failure, and so the high rates of bankruptcy. (As seen in Carne, Chart E, Package 4)

High interest rates make investment in Australia attractive to foreigners, *cet. par.*, leading to an inflow of capital (usually as overseas borrowing), which may have the effect of raising the value of the Aussie dollar, which in turn may have adverse effects on Australian costs, and further distress Australian exporting businesses. (See Carne,

Chart F, Package 4)

The real interest rate line subtracts the effects of inflation from the nominal rate, but even the real rate is highly variable and reached an historical high in the 1980s.

8.5 What of the twin deficits?

Clark (Chart 9) shows the Public Sector Borrowing Requirements: the total net PSBR, the Commonwealth PSBR, and the State/local PSBR. After briefly becoming a net lender (1987/88 to 1989/90), the Australian public sector will mean higher interest rates than otherwise, as the government sector competes for lenders with the private, *cet. par.* (Puzzle 4)

This puzzle is related to Puzzle 3: when the government spends more than it receives, it must borrow from households and firms, who then have less remaining for consumption and for investment. A government deficit may thus cut private investment, which in turn may lead to slower growth in capital per employee and hence lower productivity growth.

A government deficit can lead to a trade deficit.

A country can buy more from abroad than it sells abroad by going into debt to foreigners: debt or equity. McDonald (Charts I, J, K, Package 10) shows Australia's increase in foreign debt. (See also Clark, Chart 26.)

The best way to cure the trade deficit is through declines in the *foreign exchange rate of the Australian dollar*: the amount of another country's

currency that residents of Australia can buy in exchange for one Aussie dollar.

A fall in the Aussie dollar, *cet. par.*, makes buying foreign goods and travelling overseas more expensive for Australians. It may also lead to high rates of inflation, as the prices of imports rise, to the extent that they're included in Australians' purchases.