

# Chapter 2: How to Think and Do Macroeconomics

## Chapter Outline

- 2.1 Introduction
  - 2.2 Thinking in a Macroeconomic Way
  - 2.3 What Should a Macroeconomic Theory be Able to Explain?
    - Real GDP growth
    - Unemployment
    - Real wages and productivity
    - Private sector indebtedness
    - Central bank balance sheets
    - Japan case study
    - Summary
- Appendix
- The Buckeroos model
  - Implications of the Buckeroos model

## Learning Objectives

1. Recognise the importance of the fallacy of composition in understanding macroeconomics.
2. Gain an awareness that macroeconomics is a highly contested discipline in terms of theory and policy prescription.
3. Note the importance of referring to the stylised facts in analysing theory and policy prescription.
4. Develop critical thinking skills about the working of a macroeconomy with its own sovereign currency

## 2.1 Introduction

In Chapter 1, we noted that any science, whether physical or social, develops theories to gain an understanding of the specific phenomena that it is trying to explain. This necessitates abstraction. In economics there are two broad schools of thought, which means that economics is a contested discipline, with ongoing debates about both theory and policy. We outlined the subject matter of macroeconomics and highlighted the distinct features of Modern Monetary Theory (MMT). Finally we provided a discussion of macroeconomic policy objectives, by introducing the concept of public purpose.

All disciplines have their own language and way of thinking. In the next Section of this Chapter, we argue that thinking as a macroeconomist is particularly challenging, because the discipline is highly contested with self-styled experts offering diverse views. An important contemporary example is the MMT rejection of the neoclassical claim that a currency-issuing national government is like a household and subject to same type of ‘budget’ constraint. More generally some propositions, which make sense at an intuitive, personal level, fail to hold an aggregate level. This is referred to as the **fallacy of composition**. A number of examples, both economic and non-economic, are provided. We then discuss what macroeconomics should be able to explain and outline two empirical examples relating to unemployment and the conduct of fiscal policy in which there are sharp theoretical differences between MMT and orthodoxy.

Finally in the Appendix, we provide a brief outline the **Buckaroos model**, which has been implemented at the University of Missouri at Kansas City (UMKC) in the United States. UMKC students are required to undertake a certain number of hours of voluntary labour for community service providers prior to graduation. The Buckaroos model is a means of operationalising the administration of this scheme and provides insights about the operation of a modern monetary economy.

## 2.2 Thinking in a Macroeconomic Way

Macroeconomics is a controversy-ridden area of study. In part, this is because the topic of study is seen as being of great significance to our nation and our daily lives even though the details that are discussed are mostly difficult for us to understand.

The popular press and media in general are flooded with macroeconomics – the nightly news bulletins invariably have commentators speaking about macroeconomic issues – such as the real GDP growth rate, the inflation rate or the unemployment rate. The population has been more exposed to macroeconomic terminology over the last two or so decades and the advent of social media has given voice to anyone who wants to be a macroeconomic commentator.

The so-called blogosphere is replete with self-styled macroeconomic experts who wax lyrical about all and sundry, often relying on intuitively logical arguments to make their cases. The problem is that common sense is a dangerous guide to reality and not all opinion should be given equal privilege in public discourse. Our propensity to generalise from personal experience, as if the experience constitutes general knowledge, dominates the public debate – and the area of macroeconomics is a major arena for this sort of problematic reasoning.

A typical statement that is made in the public arena is that the government might run out of money if it doesn’t curb spending. Conservative politicians who seek to limit the spending ambit

of government often attempt to give this statement authority by appealing to our intuition and experience.

They draw an analogy between the household and the sovereign government to assert that the microeconomic constraints that are imposed on individual or household choices apply equally without qualification to the government.

So we are told that governments, like households, have to live within their means. This analogy resonates strongly with voters because it relates the more amorphous finances of a government to our daily household finances.

As we noted in Chapter 1, we know that we cannot run up our household debt forever and that we have to moderate our spending when we reach the borrowing limits on our credit cards. We can borrow to enhance current spending, but eventually we have to sacrifice spending to pay the debts back. We cannot indefinitely live beyond our financial means.

Neoliberals draw an analogy between the two – household and government – because they know we will judge government deficits as being reckless, more so if fiscal deficits rise. But the government is not a big household. It can consistently spend more than its revenue if it creates the currency.

Whereas households have to save (spend less than they earn) or borrow to spend more in the future, governments can purchase whatever they like whenever there are goods and services for sale in the currency they issue. Governments always have the capacity to spend in their own currencies. Governments like Britain, the United States, Japan and Australia can never run out of money. We make brief reference to the Japanese economy later in this Chapter.

In addition, fiscal surpluses (taxation revenue greater than government spending) today do not provide greater capacity to governments to meet future spending needs, nor do fiscal deficits (taxation revenue less than government spending) erode that capacity.

MMT teaches that our experience in managing our own household budgets provides no guidance about the management of the government fiscal position, yet on a daily basis, we are told it does. We are users of the currency that the government issues.

The government has to consider the real resources that are available to the economy and how best to deploy them. These are not financial considerations – there are no intrinsic ‘financial’ constraints that are relevant to a currency-issuing government.

A household always has to consider its financial means. Common sense tells us that if we have ‘too much debt’ then we can save and reduce that debt. But, putting aside whether public debt is problematic (see Chapter 14), if the government tries to ‘save’ (another inapplicable conceptual transfer from the individual level) then public debt will probably rise.

Indeed, in the 1930s macroeconomics started life as a separate discipline of study from microeconomics because the dominant way of thinking at the time was riddled with errors of logic that led to spurious analytical reasoning and poor policy advice.

Microeconomics develops theories about individual behavioural units in the economy – the person, household, or firm. For example, it might seek to explain the employment decisions of a firm or the saving decisions of an individual income recipient. However, microeconomic theory ignores knock-on effects on others when examining these firm level or household level

decisions. That is clearly inappropriate if we look at the macroeconomy, where we must consider the impacts on others.

We have learned that macroeconomics studies the aggregate outcomes of the behaviour of all firms and households. The question is how do we go from the individual unit (microeconomic) level to the economy-wide (macroeconomic) level? This is a question that the so-called aggregation problem seeks to address.

Prior to the 1930s, there was no separate study called macroeconomics. The dominant neoclassical school of thought in economics at the time considered macroeconomics to be a simple aggregation of the reasoning conducted at the individual unit or atomistic level.

To make statements about industry or markets or the economy as a whole, they sought to aggregate their atomistic analysis. For reasons that will become clearer, simple aggregation proved to be flawed.

The solution was to fudge the task and introduce the notion of a 'representative household' to be the demand side of a goods and services (product) market and the 'representative firm' to be the supply side of that market. Together they bought and sold a 'composite good'. These aggregates were fictions and assumed away many of the interesting aspects of market interaction.

For example, if we simply sum all the individual demand relationships between price and spending intention we could form a representative household demand function.

But what if the spending intentions of each household or a segment of them were interdependent rather than independent? What if one household changed their demand once they found out what the spending intentions of the next-door neighbour were (for example, the notion of keeping up with the Joneses!)? What if the actions of one household impinge on the feasible choices of another? Then a simple summation of demands is inappropriate.

But these issues were abstracted from and the representative firm and household were just bigger versions of the atomistic unit and the underlying principles that sought to explain the behaviour of the representative firm or household were simply those that were used to explain behaviour at the individual level which ignored any impacts on others. Accordingly, changes in behaviour or circumstances that might benefit the individual or the firm are automatically claimed to be of benefit to the economy as a whole.

In the Great Depression, this erroneous logic guided policy in the early 1930s and the crisis deepened. At that time, John Maynard Keynes and others sought to expose the logical error that the dominant orthodoxy had made in their approach to aggregation. In that debate this mode of thinking was considered to incorporate a compositional fallacy. This led to the development of macroeconomics as a separate discipline from microeconomics. Karl Marx had appreciated this fallacy in the mid-1800s but his contributions were largely ignored in the popular economic theory of the early 20th century.

**Compositional fallacies are errors in logic that arise when we infer that something, which is true at the individual level, is also true at the aggregate level.** The fallacy of composition arises when actions that are logical, correct and/or rational at the individual or micro level have no logic (and may be wrong and/or irrational) at the aggregate or macro level.

Keynes led the attack on the mainstream thinking at the time – mid-1930s – by exposing several fallacies of composition, including the paradox of thrift and the wage cutting solution to unemployment.

A contemporary example of the flawed reasoning that follows a fallacy of composition is the proposal to engage in fiscal austerity in response to higher fiscal deficits. Prior to considering the paradox of thrift and fiscal austerity, let us first consider two simpler examples, the first of which is non-economic and the second has economic relevance.

Consider a large crowd attending a sporting event. The stadium provides seating for all attendees. A spectator would get a better view of an incident occurring near the sideline by standing up. Would all members of the crowd get a better view by standing up? Clearly the answer to this question is no.

Consider an employee who loses their job on Thursday evening. On Friday morning they consult the vacancies advertised in the local newspaper and online and apply for suitable jobs. They also knock on the doors of local employers and present a C.V. and request a job. Within a week they have secured a new job, following their thorough job search. Would it be correct to argue that if all the unemployed searched as conscientiously for jobs, then the unemployment problem would be solved? The answer is no. To make the discussion simple, assume all the unemployed are qualified to fill the available job vacancies, but 100 workers are competing for 50 jobs. At best, 50 of these job seekers will remain unemployed, irrespective of how thoroughly they search for jobs. This topic is further discussed in The Parable *One hundred dogs and 94 bones* (CofFEE).

The paradox of thrift tells us that what applies at a micro level that is the ability to increase saving if one is disciplined enough, does not apply at the macro level. Thus if everyone attempts to increase saving, overall incomes would fall and total saving in the economy would not increase.

There is an old saying – look after the pennies and the pounds will look after themselves.

So by reducing their individual consumption spending a person can increase the proportion they save and enjoy higher future consumption possibilities as a consequence. The loss of spending to the overall economy of this individual's adjustment would be small and so there would be no detrimental impacts on overall economic activity, which is crucially driven by aggregate spending.

But imagine if all individuals (consumers) sought the same goal and started to withdraw their spending *en masse*? Then total spending would fall significantly and, as you will learn from Chapter 7 national income falls (as production levels react to the lower spending) and unemployment rises. The impact of lost consumption on aggregate demand (spending) would be such that the economy would plunge into a recession and everyone would suffer.

Moreover, as a result of the lower national income, it is possible that total saving would actually fall along with consumption spending so the economy as a whole would be saving less. As we will see later, if poor sales due to an increased desire to save, negatively impact investment, aggregate saving would certainly fall.

The paradox of thrift tells us that what applies at a micro level (that is, the ability to increase saving if one is disciplined enough) does not apply at the macro level (if everyone attempts to increase saving, overall incomes fall and individuals would be thwarted in their attempts to increase their savings in total).

Why does the paradox of thrift arise? In other words, what is the source of this compositional fallacy?

The explanation lies in the fact that a basic rule of macroeconomics, which you will learn once you start thinking in a macroeconomic way, is that spending creates income and output. This economic activity, in turn, explains how employment is generated. Adjustments in spending drive adjustments in total production (output) in the economy as firms react to higher (lower) sales by increasing (reducing) employment and output.

So if all individuals reduce their spending (by attempting to save) the level of income falls rather than stays constant. By contrast if just one person reduced their spending it is safe to assume that their income would not be affected and that the impacts on all others would be so small they could be ignored.

But we know that if all consumers act *en masse* then not only does their spending fall, but national income also falls and the logic that applied at the individual level will be spurious or fallacious at the aggregate level.

As total saving (the sum of all household saving) is a residual after all households have made their consumption spending choices from the available disposable income then national income changes, in turn, feedback on total saving. When national income falls, consumption falls and total saving may decline in absolute terms.

Certainly total saving will be less than individuals planned due to the fall in equilibrium national income.

By assuming that we could simply add up the microeconomic relations to get the representative firm or household, the mainstream at the time were assuming that the aggregate unit faced the same constraints as the individual sub-units. So the individual saver might reasonably assume that changing their consumption choices would not impact their income.

During the Global Financial Crisis (GFC), the conservative reaction to the increasing government deficits has been to enact fiscal austerity measures, by cutting government expenditure and/or increasing taxes, and to encourage nations to cut domestic costs in order to stimulate their export sectors via increased competitiveness.

In isolation, that is, where one nation does this while all other nations are maintaining strong economic growth, this strategy might have a chance of working. But if all nations engage in austerity and cut their growth rates, then overall spending declines, and imports will fall across the board, as will exports. This is another example of a Fallacy of Composition.

It is the interdependence between all countries via trade, as well as a fall in net government spending that undermines the policy prescription in this case. Further, it is obvious that not all countries can rely on export-led growth (to more than offset a decline in net Government spending) since for every exporter there must be an importer.

MMT contains a coherent logic that will teach you to resist falling into intuitive traps and compositional fallacies. MMT teaches you to think in a macroeconomic way.

Keynes and others considered that fallacies of composition, such as the paradox of thrift, provided a *prima facie* case for considering the study of macroeconomics as a separate discipline. These examples show that we must be very careful when drawing general conclusions on the basis of our own experience (that is, specific-to-general reasoning).

## 2.3 What Should a Macroeconomic Theory be Able to Explain?

Any macroeconomic theory should help us understand the real world and provide explanations of historical events and reasonable forward-looking forecasts as to what might happen as a consequence of known events – for example, changes in policy settings. A theory doesn't stand or fall on its absolute predictive accuracy because it is recognised that forecasting errors are a typical outcome of trying to make predictions about the unknown future.

However, systematic forecast errors (that is, continually failing to predict the direction of the economy) and catastrophic oversights (for example, the failure to predict the 2008 Global Financial Crisis) are an indication that a macroeconomic theory is seriously deficient.

In this section we present some stylised facts about the way in which modern industrialised economies have performed over the last several decades. These facts will be referred to throughout the textbook as a reality check when we compare different approaches to the important macroeconomic issues such as unemployment, inflation, interest rates and government deficits.

The facts provide a benchmark against which any macroeconomic theory can be assessed. If a macroeconomic theory generates predictions which are consistently at odds with what we observe then we conclude that it doesn't advance our understanding of the real world and should be discarded.

### Real GDP growth

Real Gross Domestic Product is the measure of actual production of goods and services in the economy over the course of a particular period. We will learn how the national statistics offices measure it and how we interpret movements in real GDP in Chapter 4 when we study the National Income and Product Accounts (NIPA). For now, we consider economic growth to be measured by the percentage change in real GDP, and in that sense, it is one measure of the prosperity of a nation. We will learn that employment growth is also dependent on output growth and so a higher real GDP growth usually means higher employment and lower unemployment.

Table 2.1 shows the average annual real GDP growth rates by decade from 1960 for various countries. The sample of nations chosen include the three large industrialised European nations representative of the 'north' and 'south' (Germany, Italy and Spain) all of which are members of the Eurozone; Britain, a European nation outside the Eurozone; a small open economy predominantly exporting primary commodities and with a relatively underdeveloped industrial base (Australia), and two large, non-European industrialised nations (Japan and the USA).

**Table 2.1 Average annual real GDP growth by decades, per cent**

	Australia	Germany	Italy	Japan	Spain	UK	US
1960-70	5.0	4.5	5.7	10.2	8.6	3.1	4.7
1970-80	3.3	3.3	4.0	5.2	5.3	2.6	3.2
1980-90	3.4	2.0	2.6	4.4	3.0	2.7	3.1
1990-00	3.2	2.2	1.5	1.5	2.8	2.1	3.2
2000-10	3.2	0.8	0.5	0.6	2.7	1.9	1.8
2010-15	2.6	2.0	-0.5	1.4	-0.3	2.0	2.1

Source: National statistical agencies.

Several things are clear. First, real economic growth has been lower on average in the current period than in the 1960s for each country. Second, the European nations (Italy and Spain) have clearly performed poorly in the recent period. Third, the European nations within the Eurozone, including Germany, have performed relatively poorly since 2000. Fourth, Australia has generally performed better than the other nations in the table.

Among the questions that our macroeconomic approach needs to be able to answer in a consistent fashion are: Why has real GDP growth on average slowed? What explains Australia's superior growth rate between 2010 and 2015? Why have Italy and Spain endured negative growth in the period 2010 to 2015?

### Unemployment

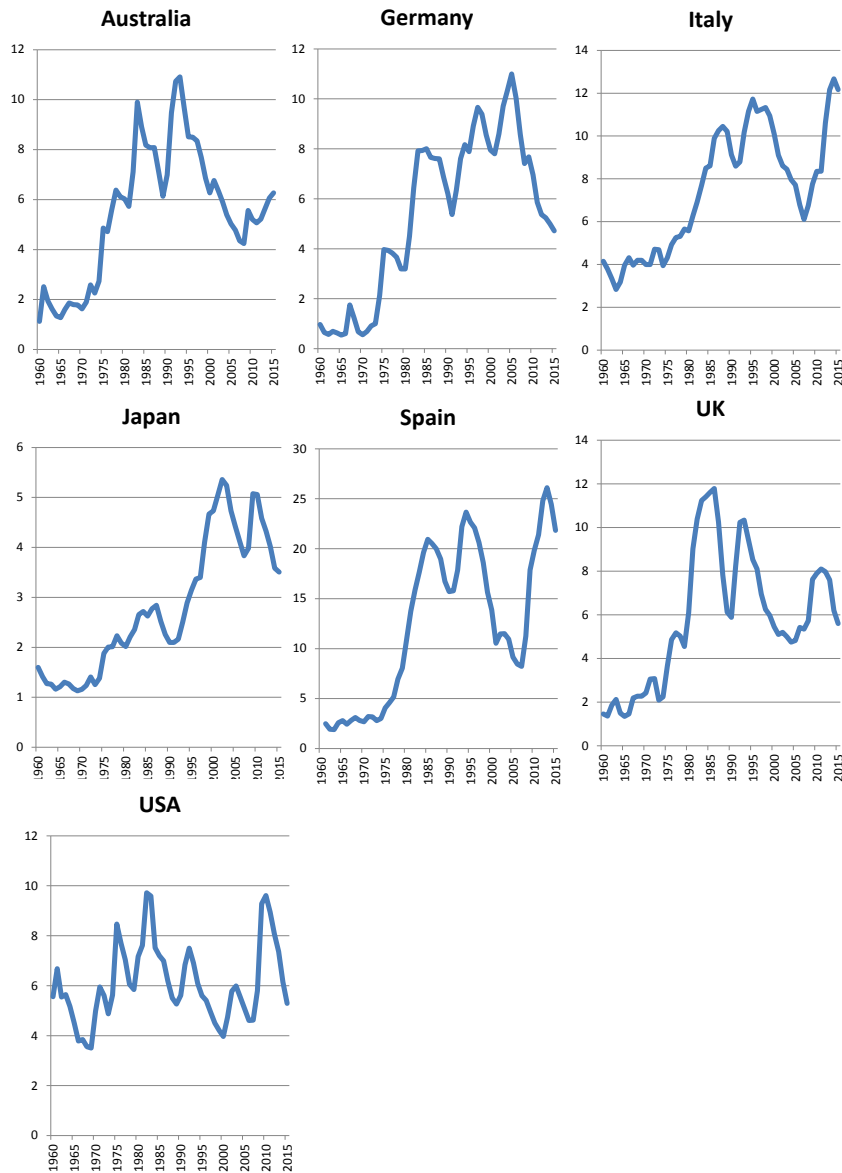
One of the stark facts about modern economies has been the way in which unemployment has evolved over the last three or more decades. While different nations have recorded varying experiences, the common thread is that unemployment rates have risen overall and, in most cases, endured at higher levels for many years.

In Figure 2.1, the unemployment rates – the percentage of willing workers who are unable to find work – are shown for the seven nations depicted in Table 2.1 from 1960 to 2015. Please note that the vertical scales are different.

The accompanying data in Table 2.2 provides further information upon which to assess the historical behaviour of unemployment.



**Figure 2.1 Comparative unemployment rates, per cent, 1960 to 2015**



Source: Australian Bureau of Statistics; Federal Statistical Office, Germany; National Institute of Statistics, Italy; Ministry of Finance, Japan; National Statistics Institute, Spain; Office of National Statistics, Britain, Bureau of Economic Analysis, US.

The data show that unemployment rose in all nations shown during the 1970s and persisted at these high levels well into the first decade of the new century. Unemployment rates in Japan have been significantly below that of the other nations shown.

The data also show quite clear cyclical patterns. Australia is an example where cyclical patterns have been pronounced. Unemployment was below 2 per cent for most of the early post-World War II period and then rose sharply in the mid-1970s and continued rising as the economy went into a deep recession in the early 1980s.

**Table 2.2 Average unemployment rates by decade, per cent**

	Australia	Germany	Italy	Japan	Spain	UK	US
1960-70	1.7	0.8	3.8	1.3	2.6	1.8	4.8
1970-80	4.1	2.5	4.8	1.7	5.0	3.8	6.3
1980-90	7.5	6.7	8.5	2.5	17.3	9.2	7.1
1990-00	8.5	7.8	10.4	3.2	19.0	7.8	5.6
2000-10	5.4	8.7	8.0	4.7	12.1	5.7	5.9
2010-15	5.6	5.5	10.7	4.2	23.1	7.2	7.6

Source: See Figure 2.1.

Economic growth in the second-half of the 1980s brought the rate down from its 1982 peak but never to the level that had been enjoyed in the 1950s, 1960s and early 1970s.

The 1991 recession then saw the unemployment rate jump up again very quickly and reach a peak higher than the 1982 peak. The unemployment rate started to fall again as growth ensued after the recession was officially over but it took many years to get back to levels prior to the 1991 downturn. The US follows a similar pattern, although unemployment rates were higher in the early post war period but lower than Australia's in the 1990s. The GFC largely bypassed Australia but led to high unemployment in the USA, which has fallen somewhat since.

Unemployment rates tend to behave in an asymmetric pattern – they rise very sharply and quickly when the economy goes into a downturn in activity but then only gradually fall over a long period once growth returns.

Any credible macroeconomic model needs to provide convincing explanations for these movements. How was unemployment kept at low levels during the 1950s and 1960s? Why did unemployment rates rise in the 1970s and persist at the higher levels for several decades? What determines the cyclical pattern of the unemployment rates – that is, the asymmetry? Is there a behavioural relationship between the GDP growth data shown in Table 2.1 and the unemployment data in Table 2.2?

In answer to the first two questions, MMT would refer to the key proposition in macroeconomics that total spending determines output and employment, and indirectly unemployment. Then variations in unemployment must be attributable to variations in total spending.

On the other hand, some orthodox or mainstream economists claim that variations in output and employment occur due to decisions made on the supply side of the economy. Workers decide whether they wish to work under prevailing wages and conditions. Then high unemployment is caused by high quit rates, which is a supply side phenomenon.

If this were true, the onus would then be on these economists to explain why in 2008 the unemployment rate rose quite dramatically in four of the six countries depicted in Figure 2.1, but not in Australia and Japan, and to a certain extent, Germany. However, quit rates are procyclical, so workers tend to quit their current jobs, when plenty of alternative job opportunities are available. Thus high unemployment is not associated with high quit rates, which suggests that a demand side (spending) explanation of variations in unemployment is more plausible.

## Real wages and productivity

In 1957, the renowned British economist Nicholas Kaldor wrote an article in *The Economic Journal*, about the nature of long-term economic growth. He noted that there were six “remarkable historical constancies revealed by recent empirical investigations” (page 591), which he later considered to be the stylised facts regarding economic growth. He noted that these constancies were not necessarily immune to cyclical variation (as the economic cycle moves up and down), but were relatively constant over longer periods.

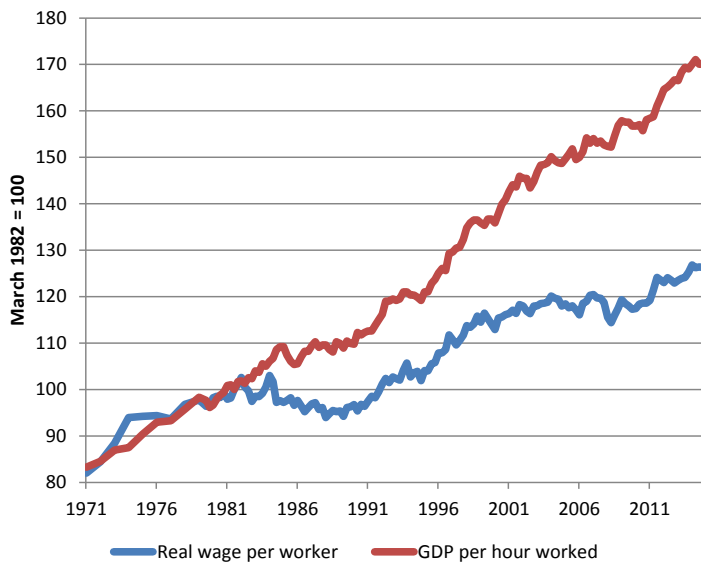
Among his stylised facts of economic growth was the observation that:

... the share of wages and the share of profits in the national income has shown a remarkable constancy in ‘developed’ capitalist economies of the United States and the United Kingdom since the second half of the nineteenth century (pages 592-93).

This observation was repeated by many economists for other nations in terms of the distribution of national income between labour (wages) and capital (profits).

We will learn in later chapters that for the share of wages and the share of profits in national income to remain constant over time, real wages must grow in proportion with labour productivity. Real wages are the purchasing power equivalent of the wage a worker receives in money terms. Labour productivity is the output that is produced per unit of labour hour. Kaldor’s stylised fact in relation to national income shares thus meant that real wages grew in proportion with labour productivity over a long time period.

**Figure 2.2 Real wage and productivity indexes, Australia, 1971 to 2015, March 1982=100**



Source: Australian Bureau of Statistics, National Accounts.

Figure 2.2 picks up the story in early 1971 for the Australian economy, which is representative of the trends that have been observed over this time period in a number of advanced economies of

the world. Up until the early 1980s, real wages continued to grow in proportion with labour productivity (GDP per hour worked).

After 1981, a gap opened up between these two time series and has widened ever since. Since March 1982, labour productivity has grown by around 70 per cent and real wages have only increased by around 28 per cent in Australia. Don't worry if you are having trouble interpreting the graph and its underlying data at this stage. During the course of this textbook, we will develop the techniques necessary to allow you to achieve competence when viewing empirical material.

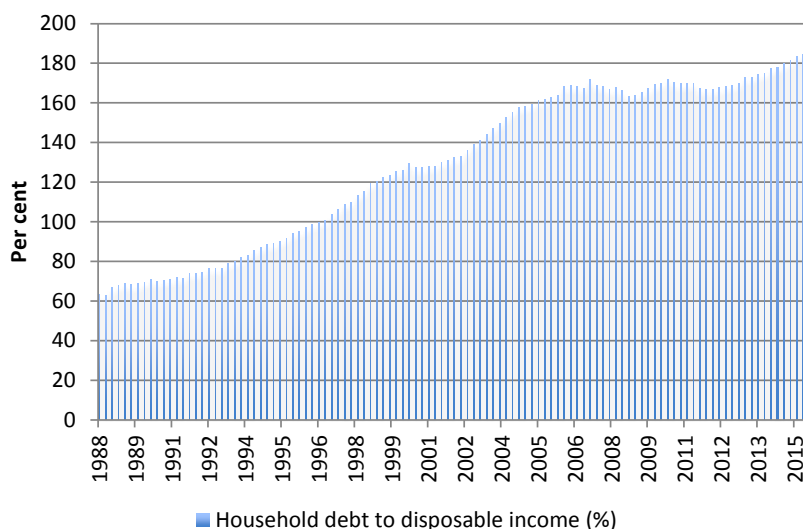
In terms of shares of national income, the growing gap between real wages and labour productivity has meant that there has been an on-going redistribution of real income away from workers (wages) towards capital (profits). In Australia, the wage share has dropped from around 60 per cent in the early 1980s to around 52 per cent in 2015.

How do we explain this shift in national income shares? Why did Kaldor's stylised constancy of national income shares end? What are the implications of such a substantial redistribution of national income away from real wages, which have until the last few decades been the primary driver of household consumption expenditure? What other factors now influence the growth in household consumption expenditure?

### Private sector indebtedness

Taking the example of Australia again (as representative of what has happened elsewhere in the advanced world), Figure 2.3 shows the rise in household debt as a share of disposable income since the early 1970s. Prior to 1988 (the beginning of our sample), the ratio was relatively steady at around 60 per cent. In the 1990s, the ratio began to rise and by the early 2000s had reached more than 150 per cent. The ratio fell marginally during the Global Financial Crisis but has since begun to increase again and by the end of 2015 was above 180 per cent and rising.

**Figure 2.3 Household debt to disposable income ratio, Australia, per cent, 1998 to 2015**



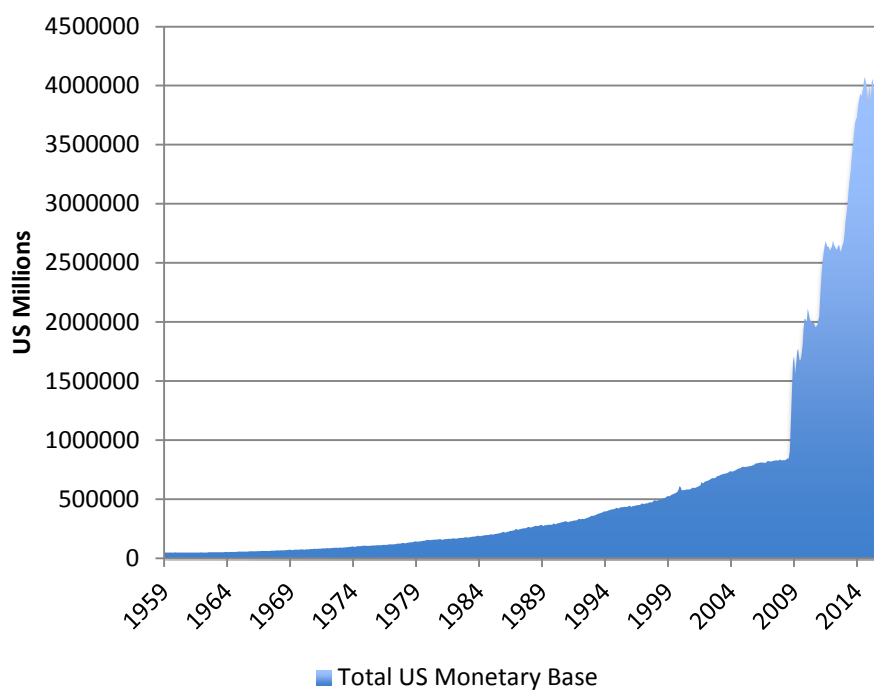
Source: Reserve Bank of Australia.

Is this large increase in the household debt ratio linked to the distributional shifts in national income implied by Figure 2.2? What other factors might explain this shift? What are the implications of the elevation in the household debt to disposable income ratio? Was the Global Financial Crisis linked to this movement?

### Central bank balance sheets

Figure 2.4 shows the so-called monetary base of the US economy administered by the Federal Reserve Bank. We will learn about the monetary base in later chapters but for now we can simply consider it to be the total reserves of the US banking system held at the central bank (the Federal Reserve Bank) plus currency (notes and coins) in circulation. The monetary base represents liabilities on the balance sheet of the US central bank. Up until 2008, the monetary base was predominantly comprised of currency on issue. In December 2015, bank reserves were around 65 per cent of the total monetary base and that proportion had increased in the period from 2008.

**Figure 2.4 US Federal Reserve Bank monetary base, 1959 to 2015, US dollar millions**



Source: Federal Reserve Bank, US.

In January 2008, the US monetary base equalled \$US830,632 million. It then accelerated upwards very quickly and by December 2015, stood at \$US3,835,800 million, a huge increase by any standard.

The rise in bank reserves at the US central bank is not an isolated event and similar balance sheet shifts have occurred in recent years in other nations (for example, Japan and the UK). Many

mainstream economists predicted that the substantial rise in central bank reserves would flood each economy with money and cause inflation. History tells us that inflation is low and in retreat.

How do we explain this massive shift in the balance sheet of the US Federal Reserve Bank? What are the implications of this shift? How does the monetary base relate to the money supply? Can the central bank carry liabilities of this size indefinitely?

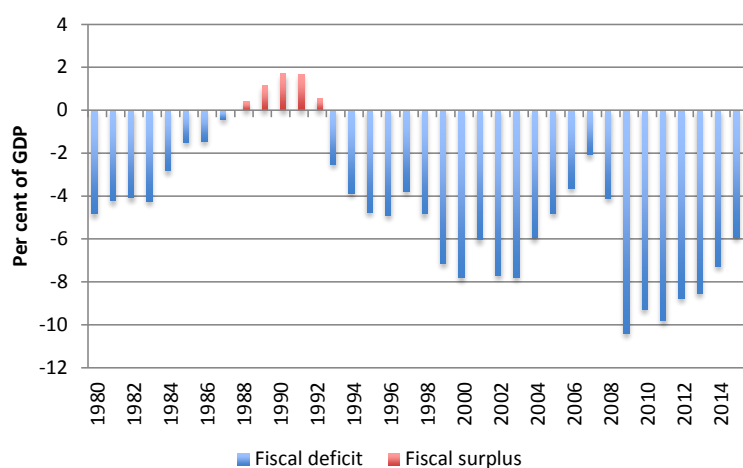
### Japan case study

Consult almost any macroeconomics textbook and you will find the following propositions stated in some form or another:

1. Persistent fiscal deficits push up short-term interest rates because the alleged need to finance higher deficits increases the demand for scarce savings relative to its supply.
2. The higher interest rates that result, undermine private investment spending (the so-called 'crowding out' hypothesis).
3. Persistent fiscal deficits lead to bond markets demanding increasing yields on government debt.
4. The rising public debt to GDP ratio associated with the persistent fiscal deficits will eventually lead bond markets to withdraw their lending to the government and the government will run out of money.
5. Persistent fiscal deficits lead to accelerating inflation and potentially hyperinflation, which is highly detrimental to the macro-economy.

Japan was the second largest economy after its reconstruction following the Second World War led to spectacular growth in the 1960s. It is now the third largest economy behind the United States and China. The period since 1990 provides a very interesting case study for macroeconomists because it has been marked by a number of macroeconomic outcomes, which are at odds with orthodox thinking.

**Figure 2.5 Government fiscal balance as % of GDP, Japan, 1980 to 2015**



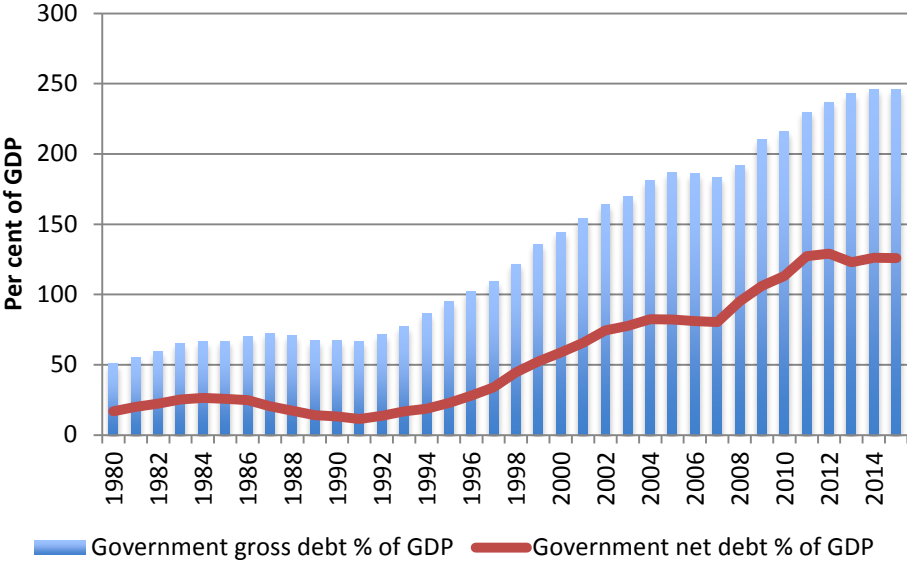
Source: IMF World Economic Outlook dataset (<http://www.imf.org/weo>).

As we can see in Figure 2.5, Japan has run a persistent deficit since 1992. A massive build-up of private indebtedness associated with a real estate boom, accompanied the five years of fiscal surpluses from 1987 to 1991. The boom crashed spectacularly in 1991 and began a period of lower growth and the need for higher deficits. The convention in Japan is that the national government matches its fiscal deficit with the issuance of bonds to the non-government sector, principally, the private domestic sector in Japan.

Figure 2.6 shows the evolution of the public debt levels as a per cent of GDP since 1980. Gross public debt is the total outstanding public debt issued by Japan’s national (general) government sector. But the Government also has investments itself, which deliver returns and when we subtract them from the Gross public debt we get the Net public debt.

Unsurprisingly, given the institutional practice of issuing debt to the private bond markets to match the fiscal deficits, the debt ratio has risen over time as a reflection of the on-going deficits that the Japanese government has been running to support growth in the economy and maintain relatively low unemployment rates (see Figure 2.1).

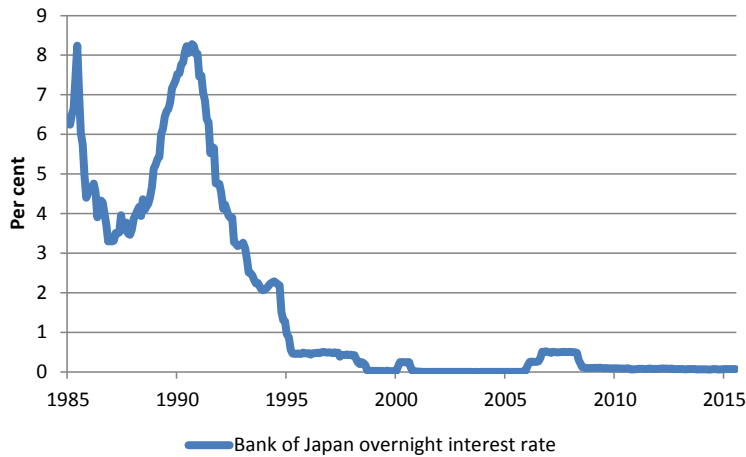
**Figure 2.6 Gross and net public debt as % of GDP, Japan, 1980 to 2015**



Source: IMF World Economic Outlook dataset (<http://www.imf.org/weo>).

If the neoclassical propositions summarised above correctly captured the way the real world operates, then we should have expected to see rising interest rates, increasing bond yields, and accelerating inflation in Japan, given the persistent fiscal deficits.

**Figure 2.7 Japan overnight interest rate, per cent, July 1985 to December 2015**



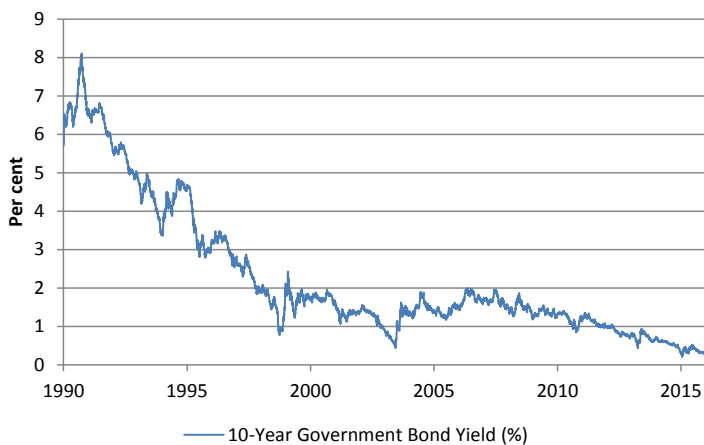
Source: Bank of Japan ([http://www.stat-search.boj.or.jp/index\\_en.html](http://www.stat-search.boj.or.jp/index_en.html)).

Did the persistent fiscal deficits in Japan drive up interest rates and government bond yields? The answer is clearly no! Figure 2.7 shows the overnight interest rate in Japan, which is administered by the central bank, the Bank of Japan. This is the interest rate that banks use to borrow. It has been exceedingly low and has not responded adversely to the persistent fiscal deficits.

Figure 2.8 shows that long-term (10-year) bond yields (interest rates) on government debt are also very low and have not responded adversely to the persistent fiscal deficits. There is no suggestion that bond market investors have become increasingly scared of buying the Japanese government bonds. If investors considered the government debt had become increasingly risky to purchase they would have demanded increasing yields to compensate for that risk.

The corollary is that the investors have also not signalled an unwillingness to purchase the debt and demand for the bonds remains high and yields remain low.

**Figure 2.8 Japan government 10-year government bond yield, per cent, 1990 to 2015**

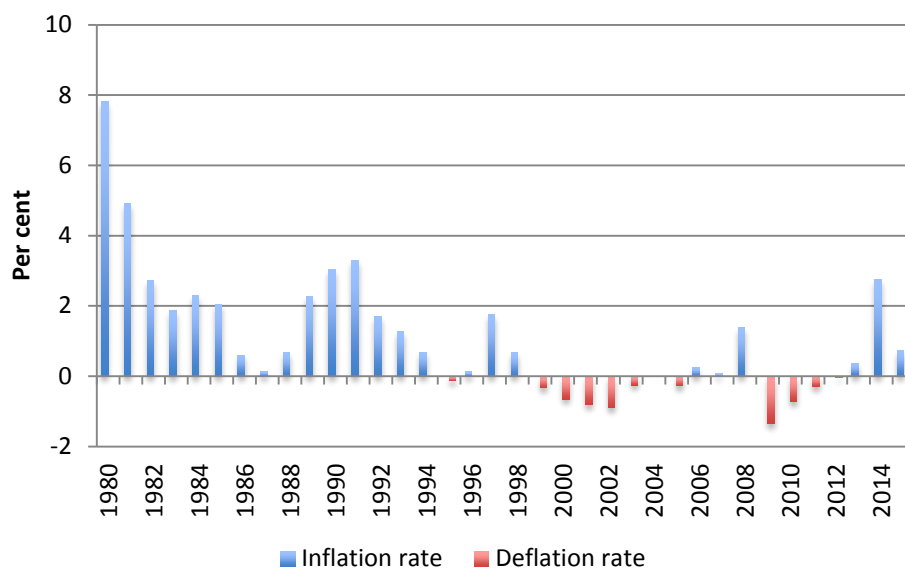


Source: Ministry of Finance, Japan ([http://www.mof.go.jp/english/jgbs/reference/interest\\_rate/historical/jgbcme\\_all.csv](http://www.mof.go.jp/english/jgbs/reference/interest_rate/historical/jgbcme_all.csv)).



Figure 2.9 shows the inflation and deflation rates for Japan between 1980 and 2015. Inflation occurs when there is an ongoing increase in the general price level whereas deflation describes a situation when the general price level is continuously falling (negative inflation). You can see that in the period after the property boom crashed and the Japanese government began to run persistent and, at times, large fiscal deficits, the inflation rate has been low and often negative. There is clearly not an inflationary bias in the modern Japanese economy, as predicted by the mainstream economic theories.

**Figure 2.9 Inflation and deflation in Japan, per cent, 1980 to 2015**



Source: IMF World Economic Outlook dataset (<http://www.imf.org/weo>).

The above evidence shows that, despite persistent deficits and a rising public debt to GDP ratio, along with a downgrade of Japan’s credit rating by international ratings agencies, including Fitch in April 2015, international bond markets have not ‘punished’ the Japanese government with high 10-year interest rates on public debt nor has the central bank lost control of the overnight interest rate. Second, the persistent deficits have not lead to high rates of domestic inflation.

It is clear that the mainstream macroeconomic explanation of the relationships between fiscal deficits, interest rates, bond yields and inflation rates is unable to adequately capture the real world dynamics in Japan. Such a categorical failure to provide such an explanation suggests that the mainstream theory is seriously deficient. An MMT explanation of these empirical outcomes will be provided in Chapter 14, when students will have developed a thorough understanding of the workings of a modern monetary economy with a sovereign currency and the operation of fiscal and monetary policy.

### Summary

These examples demonstrate that macroeconomics is a highly contested discipline in terms of theory and policy prescription. When assessing the statements made by financial commentators and economists in the public debate, one has to continually refer back to the stylised facts.

It is important that students gain familiarity with the language of macroeconomics and understand the key concepts and theories, which will be developed in the following chapters.

## Appendix

### The Buckaroos model

A modern monetary economy is characterised by a currency regime, whereby transactions between economic agents (e.g. households, firms, financial institutions and government) can take place. This may involve, for example, the purchase of goods and services by households from firms; the purchase of assets (by households and firms); the payment of taxes to the Government or the receipt of transfers (e.g. unemployment benefit) from government.

The real world Buckaroos model demonstrates the roles of the currency, spending and taxes in a simplified economy.

At the University of Missouri at Kansas City (UMKC) in the USA, students are required to undertake a specified number of hours of Community Service (CS) during each year of their degree program. Failure to complete the required hours of Community Service over the duration of the student's degree program has negative implications for the final grade the student receives. The Economics Department ran the initial pilot program and designed a monetary system to administer the scheme. We briefly outline the scheme below.

Each student is assumed to be subject to a community service tax of 25 hours work per semester, payable to the University Treasury. Assume there are University- approved community service (CS) providers (for example, child care, aged care, environmental services, etc.) who submit bids for student hours to Treasury. Treasury awards paper notes (let's call these Bs as in 'Buckaroos') to the CS providers (assuming health, safety and environmental standards are met). In this economy assume one hour of 'average community work' is equal to B1. Paper notes are printed, with the inscription 'this note represents one hour of community service by a UMKC student'.



For example, Treasury may agree that students can do a total of 100 hours of work this semester at, say, the XYZ not-for-profit agency, which provides support for elderly people who are living alone. Treasury provides XYZ with B100, enabling 100 hours of student labour to be purchased.

CS providers then draw on their Bs to pay students for their hours of service. This can be considered 'spending' by the University Treasury, through the CS provider. If the student has

undertaken 25 hours of CS in the semester, then they can then pay their B25 tax, when they return these Bs to the University Treasury. This transfer of Bs by each student to the Treasury extinguishes their tax liability for the semester.

The University Treasury burns the Bs received from students, or stockpiles them to be used for future Treasury spending - whichever is more cost efficient. The number of Bs supplied to any CS provider is limited by its need for student labour but also its ability to attract student workers.

### **Implications of the Buckaroos model**

Treasury is the only source of Bs, which cannot be counterfeited. Treasury cannot collect B taxes until it has spent some Bs. Treasury can only be deemed to have spent when Bs are handed over to students for work done. Treasury cannot collect more Bs in payment of taxes than it has previously spent.

A possible Treasury outcome is a 'balanced budget', with tax 'revenues' equalling B spending. Thus Bs acquired by CS providers from Treasury are used to buy student labour which are then returned to Treasury as tax payments by the students. On the other hand, a surplus (deficit) arises in say Semester 1, if total Treasury spending is less (more) than the total taxes collected over that period.

### **References**

Centre of Full Employment and Equity (CofFEE) (n.d.) One hundred dogs and 94 bones, available at: [http://e1.newcastle.edu.au/coffee/pubs/briefs/dogs/dogs\\_and\\_bones.cfm](http://e1.newcastle.edu.au/coffee/pubs/briefs/dogs/dogs_and_bones.cfm).

Kaldor, N. (1957) 'A Model of Economic Growth', *The Economic Journal*, 67(268), 591–624.