

CHAPTER

2

HOW TO THINK AND DO
MACROECONOMICS

Chapter Outline

- 2.1 Introduction
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- 2.3 What Should a Macroeconomic Theory be Able to Explain?
- 2.4 Why is it so Difficult to Come to an Agreement on Policy? The Minimum Wage Debate
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Chapter 2 Appendix: The Buckaroos model

Learning Objectives

- Recognise the importance of the fallacy of composition in understanding macroeconomics.
- Gain an awareness that macroeconomics is a highly contested discipline in terms of theory and policy prescription.
- Note the importance of referring to the stylised facts in analysing theory and policy prescription.
- 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. In Chapter 1, 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, 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 the same type of 'budget' constraint. More generally some propositions, which make sense at an intuitive, personal level, fail to hold true at 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. We will look at the case of minimum wage laws as an example of the difficulty of determining the macroeconomic effects of policy. Finally, we address the nature of scientific progress in the social sciences.

In the Appendix, we provide a brief outline of 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 feature 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 decades or so, and the advent of social media has given a voice to anyone who wants to be a macroeconomic commentator.

The so called 'blogosphere' is replete with self-appointed macroeconomic experts who wax lyrical about all and sundry, often relying on intuitively logical arguments to make their cases. The problems are 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 that experience constitutes universal truths, 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 same microeconomic constraints that are imposed on individuals or households apply equally, without qualification, to the government. We are told that governments, like households, have to live within their means. This analogy resonates strongly with voters because it equates the amorphous, obscure workings of government finance to a more easily relatable subject and scale – that of 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.

Neoliberals draw an analogy between households and governments 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 such as Britain, the United States, Japan and Australia always have the capacity to spend in their own currencies, and can never run out of money.

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.

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. 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.

A household that has 'too much debt' can save and reduce that debt. But putting aside the question of whether public debt is actually inherently problematic (see Chapter 22), if the government tries to 'save' (in itself another inapplicable conceptual transfer from the individual level) then public debt will probably rise.

Prior to the 1930s, there was no separate field of study called macroeconomics. The dominant neoclassical school of thought in economics saw macroeconomics as a simple aggregation of the reasoning used at the individual unit or atomistic level. In the 1930s, macroeconomics emerged as a separate discipline precisely because that way of thinking, blithely transposing microeconomic truisms to the macro scale, was realised to be 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 – at the level of 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- or household-level decisions. That is clearly inappropriate if we look at the macro-economy, where we must consider these wider impacts.

We have learned that macroeconomics studies the aggregate outcomes of the behaviour of all firms and households. The question is how 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.

To make statements about industry, markets or the economy as a whole, neoclassical economists 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 the two sides 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 a household changed their demand once they found out what the spending intentions of the next door neighbour were (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 not considered, and the representative firm and household used were just bigger versions of the atomistic units while the underlying principles applied to explain the behaviour of these representations were simply those that were used to explain behaviour at the isolated, individual level. 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.

During the Great Depression, this erroneous logic guided policy in the early 1930s and the crisis deepened. At that time, British economist John Maynard Keynes and others sought to expose the logical error that the dominant orthodoxy had made in their approach to aggregation by highlighting several discrepancies with that model, including the paradox of thrift and the wage-cutting solution to unemployment. In that debate this orthodoxy on aggregation was shown to incorporate a compositional fallacy, which led to the development of macroeconomics as a separate discipline from microeconomics. Karl Marx had appreciated this fallacy in the mid-19th century but his contributions were largely ignored in the popular economic literature 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 here when actions that are

logical, correct and/or rational at the individual or micro level are found to have no logic (and may be wrong and/ or irrational) at the aggregate or macro level.

Prior to considering the paradox of thrift and fiscal austerity, let us 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. An individual 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 if they all stood up? Clearly the answer to this question is no – they would then obscure each other's views.

Now let us 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 all local employers to present a CV and inquire about 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 Tale of 100 Dogs and 95 Bones* (Centre of Full Employment and Equity [CoffEE], c.2001) (see Box 14.1).

A contemporary example of the flawed reasoning that follows a fallacy of composition is the **paradox of thrift**, which is that while an individual can increase their saving if they are disciplined enough (a micro-level fact), the same reasoning does not apply at the macro level. By reducing their individual consumption spending a person can of course increase the proportion they save, and enjoy higher future consumption possibilities as a consequence. The loss of spending to the overall economy caused by this individual's adjustment would be small and so there would be no detrimental impacts on overall economic activity, which is driven by aggregate spending. But imagine if all individuals (all consumers) adopted the same goal at the same time and started to reduce their spending *en masse*? Surely this *would* impact sales and hence employment and income at the aggregate level. It is not so clear that after all adjustments are made, we would find that aggregate saving had risen. This is what Keynes called the paradox of thrift.

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

The explanation lies in a basic rule of macroeconomics, which you will learn once you start thinking in a macroeconomic way: that **spending creates income and output**. This planned economic activity powers the generation of employment to produce the goods and services. Thus, 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.

As a consequence of increased saving, total spending falls significantly, and as you will learn from Chapter 15, 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 could plunge into a recession. Certainly, total saving will be less than individuals planned due to the fall in equilibrium national income. As we will see later, if poor sales due to an increased desire to save negatively impact on investment, aggregate saving would certainly fall.

By assuming that we could simply add up the microeconomic relations to get the representative firm or household, the mainstream economist consensus at the time assumed that the aggregate unit faced the same constraints as the individual sub-units.

During the Global Financial Crisis (GFC), the conservative reaction to increasing government deficits was 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.

If one nation does this in isolation while all other nations are maintaining strong economic growth, this strategy might have a chance of working. In a similar way, one individual saver might reasonably assume that changing their consumption choices would not cause a wider effect that could impact their income. 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 countries via trade, as well as a fall in net government spending, that undermines the policy prescription in this case. It is also clear 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. The above examples show that we must be very careful when drawing general conclusions on the basis of our own experience.

2.3 What Should a Macroeconomic Theory be Able to Explain?

Any macroeconomic theory should help us understand the real world and provide both explanations of historical events and reasonable forecasts as to what might happen as a consequence of set 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 GFC) are indications 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 subsequently observe, then we can conclude that it doesn't advance our understanding of the real world and should be discarded.

Real GDP growth

Real gross domestic product (GDP) 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 includes three large industrialised European nations representative of the 'north' (Germany) and 'south' (Italy and Spain), all of which are members of the Eurozone; a European nation outside the Eurozone since its inception in 1999 (UK); 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).

Several things are clear. First, real economic growth has been lower on average since 2010 than in the 1960s for each country. Second, the southern European nations (Italy and Spain) have clearly performed poorly in the most 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 Table 2.1.

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

	Germany	Italy	Spain	UK	Australia	Japan	USA
1960–69	4.5	5.7	8.6	3.1	5.0	10.2	4.7
1970–79	3.3	4.0	5.3	2.6	3.3	5.2	3.2
1980–89	2.0	2.6	3.0	2.7	3.4	4.4	3.1
1990–99	2.2	1.5	2.8	2.1	3.2	1.5	3.2
2000–09	0.8	0.5	2.7	1.9	3.2	0.6	1.8
2010–15	2.0	–0.5	–0.3	2.0	2.6	1.4	2.1

Source: Authors' own. Data from the various national statistical agencies.

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? Why is Australia's growth rate since 2000 superior to that of the other nations? Why have Italy and Spain endured negative growth in the period 2010–2015?

Unemployment

One of the stark facts about modern economies has been the way in which unemployment has evolved since the 1980s. While different nations have recorded different outcomes, the common thread is that unemployment rates have risen overall, and in most cases, have been sustained at higher levels for many years.

In Figure 2.1, the unemployment rates, or 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.

Table 2.2 provides further information upon which to assess the historical behaviour of unemployment.

Figure 2.1 and Table 2.2 show that unemployment rose in all seven nations 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 those of the other nations shown (although they have also trended upward).

The data also show quite clear cyclical patterns; Australia being a clear, pronounced example of this. Unemployment was below two per cent for most of the early post-Second World War period and then rose sharply in the mid-1970s, continuing to rise as the economy went into a deep recession in the early 1980s.

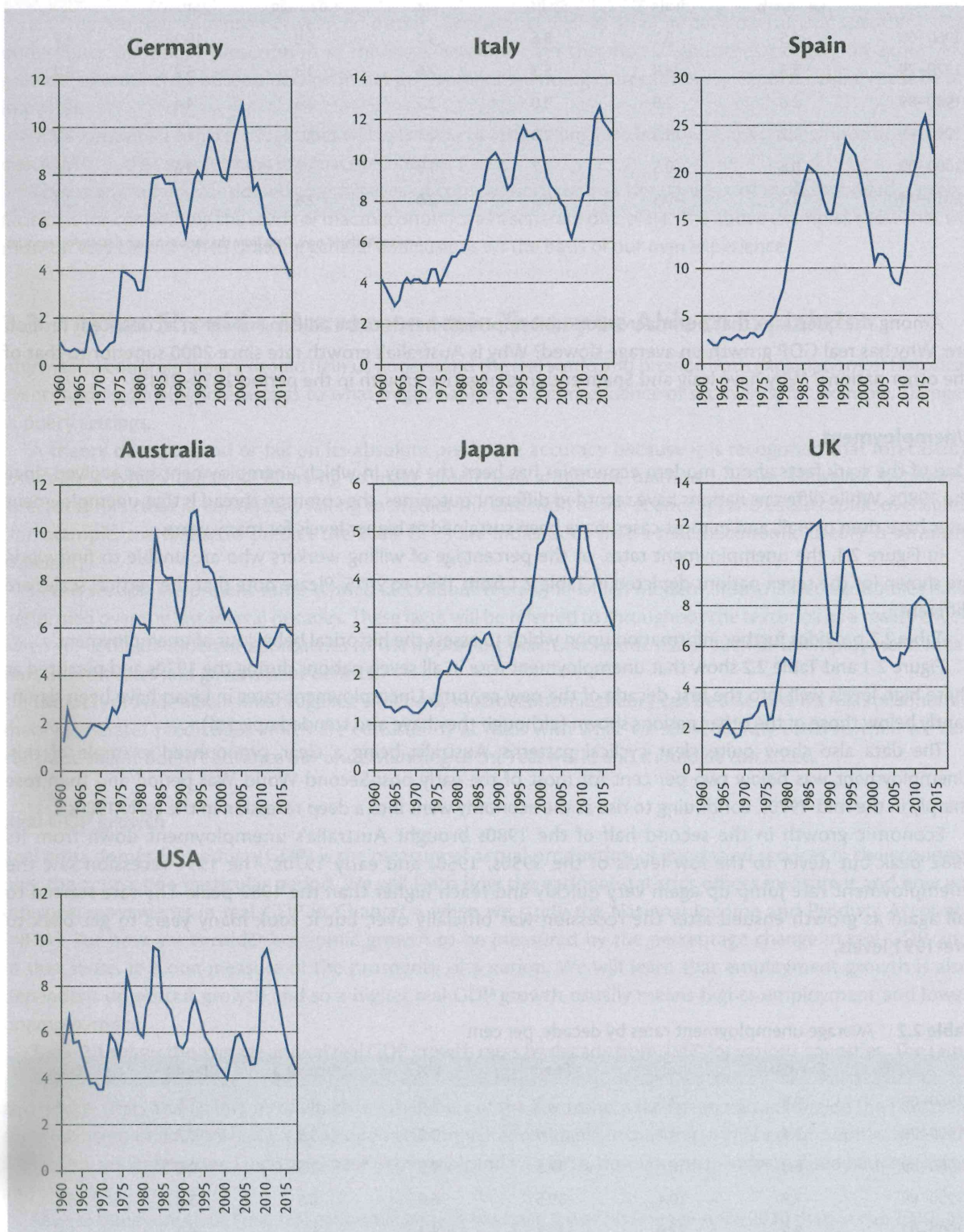
Economic growth in the second half of the 1980s brought Australia's unemployment down from its 1982 peak but never to the low levels of the 1950s, 1960s and early 1970s. The 1991 recession saw the unemployment rate jump up again very quickly and reach higher than the 1982 peak. The rate started to fall again as growth ensued after the recession was officially over, but it took many years to get back to pre-1991 levels.

Table 2.2 Average unemployment rates by decade, per cent

	Germany	Italy	Spain	UK	Australia	Japan	USA
1960–69	0.8	3.8	2.5	1.8	1.7	1.3	4.8
1970–79	2.4	4.7	4.4	3.6	3.9	1.7	6.2
1980–89	6.8	8.4	17.5	9.6	7.5	2.5	7.3
1990–99	7.8	10.4	19.5	8.0	8.8	3.0	5.8
2000–09	8.9	7.9	11.3	5.4	5.5	4.7	5.5
2010–17	5.1	10.9	21.9	6.6	5.6	3.9	6.8

Source: Authors' own. Data from the various national statistical agencies.

Figure 2.1 Comparative unemployment rates, per cent, 1960 to 2017



Source: Authors' own, using data from: 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, USA.

The US follows a similar pattern, although compared to Australia, unemployment rates were higher in the early post-war period but lower 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 and asymmetric pattern of the unemployment rates? 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. MMT would conclude that the problem probably lies in insufficient spending, attributable to insufficient aggregate demand, a topic we will pursue in later chapters.

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" (p. 591), which he later considered to constitute 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" (Kaldor 1957: 592–3). 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 at the same rate as 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 input.

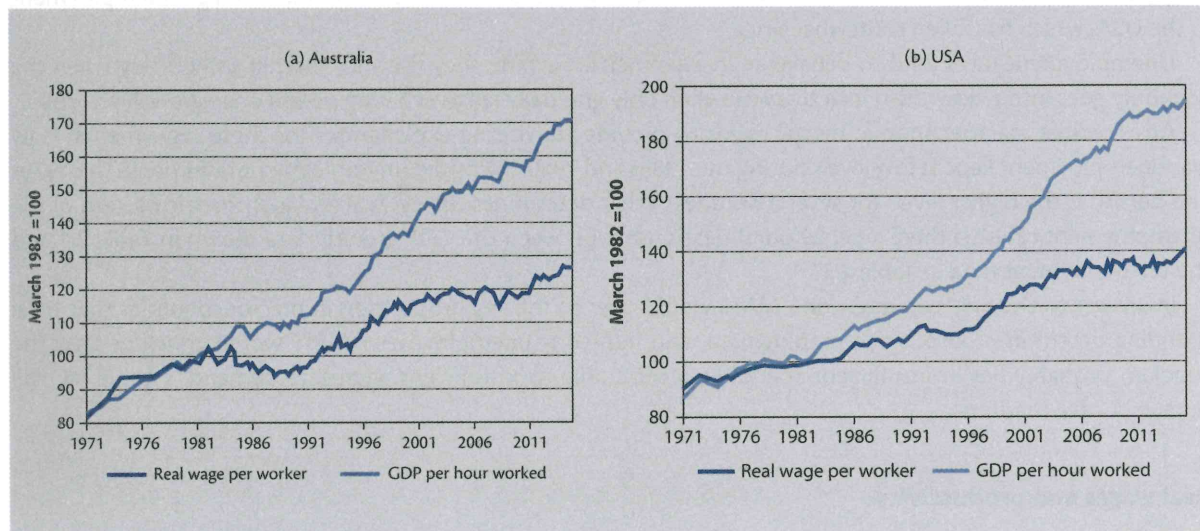
Figure 2.2 picks up the story in early 1971 for the Australian and US economies. These examples are representative of trends observed over this time period in a number of advanced economies of the world. Up until the early 1980s, real wages continued to grow at the same rate as labour productivity (represented as 'GDP per hour worked' on our graph), which is consistent with Kaldor's observation.

In the early 1980s, a gap opened up between these two data series and has widened ever since. (Don't worry if you are having trouble interpreting the graph and its underlying data at this stage. As we work through the material in this textbook, we will develop the techniques necessary to assist you to interpret changes in data.)

In terms of shares of national income, the growing gap between real wages and labour productivity has meant that there has been an ongoing redistribution of real income away from workers (wages) towards capital (profits).

How do we explain this increasing discrepancy in national income shares? Why did the period of 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? This is a topic that macroeconomics must be able to explain, and this textbook will help you to address these questions.

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



Source: Authors' own. Data from Australian Bureau of Statistics, National Accounts, US Bureau of Labor Statistics.

Private sector indebtedness

Figure 2.3 shows the rise in household debt as a share of disposable income between 2000 and 2015 for a range of OECD nations. Over the period shown, the ratio has risen markedly in most nations as financial market deregulation accelerated.

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 GFC linked to this movement? Again, this textbook will provide you with the understanding you need to comprehend these issues.

Central bank balance sheets

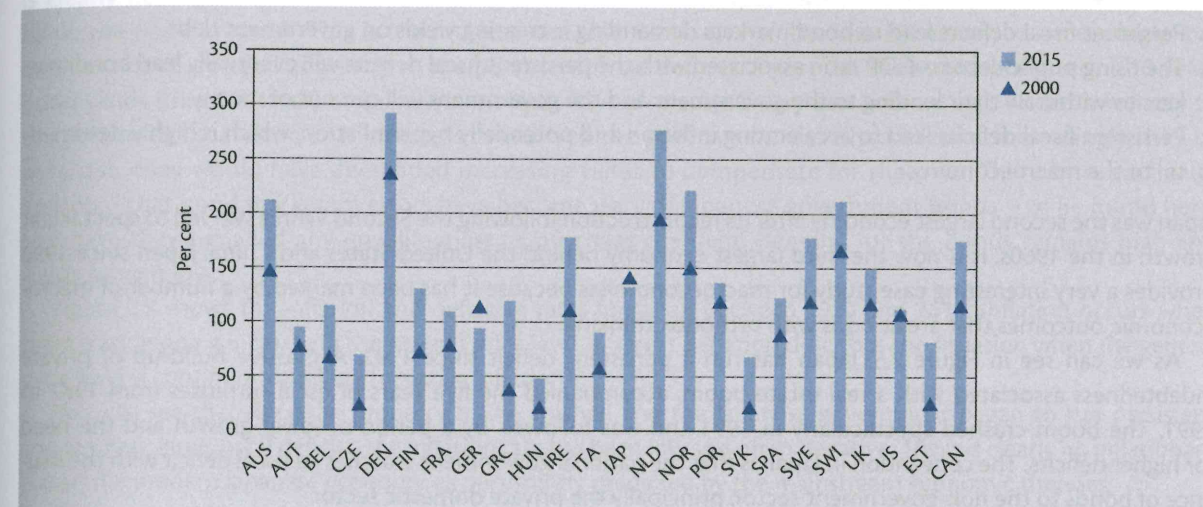
Figure 2.4 shows the so-called monetary base of the US economy administered by the Federal Reserve Bank. We will learn about the monetary base in later chapters but for now we can simply consider it to be the total reserves of the US banking system held at the central bank (the Federal Reserve Bank) 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 predominantly comprised currency on issue. The proportion in bank reserves increased from 2008 so that in December 2015 bank reserves were around 65 per cent of the total monetary base.

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 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 over the same period inflation has been low.

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?

Figure 2.3 Household debt to disposable income ratio, OECD nations, 2000 to 2015



Source: Authors' own. Data points from OECD iLibrary, *National Accounts at a Glance 2015*, Table 20.1. https://www.oecd-ilibrary.org/economics/national-accounts-at-a-glance-2015/household-debt_na_glance-2015-table31-en.

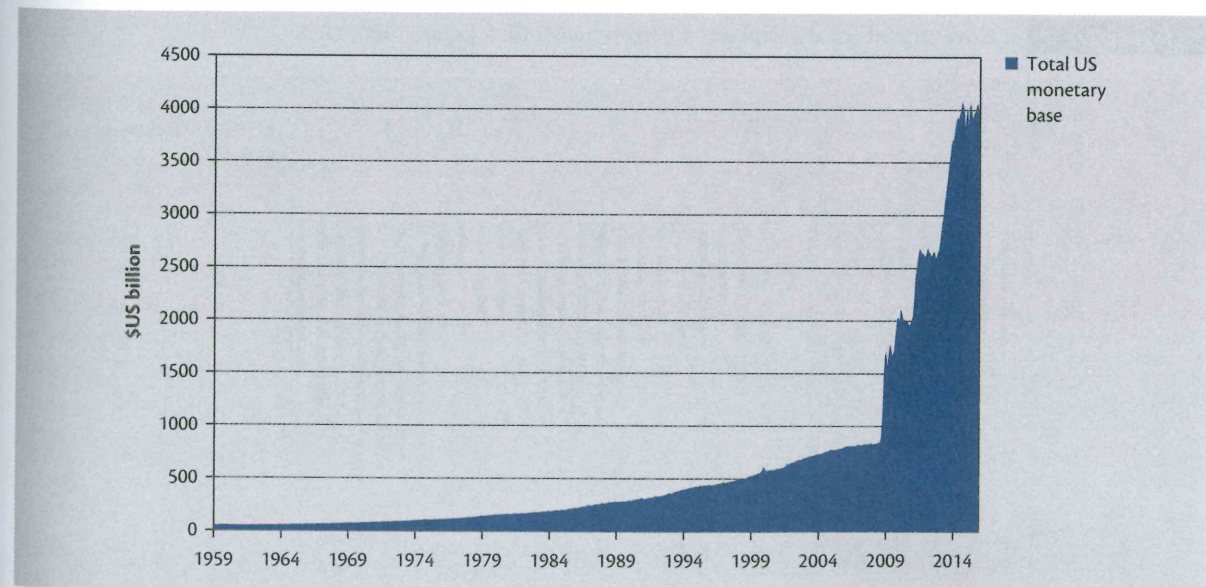
Notes: The abbreviations in the figure denote the following countries: AUS Australia; AUT Austria; BEL Belgium; CZE Czech Republic; DEN Denmark; FIN Finland; FRA France; GER Germany; GRC Greece; HUN Hungary; IRE Ireland; ITA Italy; JAP Japan; NLD Netherlands; NOR Norway; POR Portugal; SVK Slovakia; SPA Spain; SWE Sweden; SWI Switzerland; UK United Kingdom; US United States; EST Estonia; CAN Canada.

Japan's persistent fiscal deficits: the glaring counterfactual case

Consult almost any other macroeconomics textbook and you will find the following propositions stated, in some form or another, as inalienable fact:

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.

Figure 2.4 US Federal Reserve Bank monetary base, 1959 to 2015, \$US billions



Source: Authors' own. Data from Federal Reserve Bank, US.

2. These higher interest rates 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 macroeconomy.

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. Japan since 1990 provides a very interesting case study for macroeconomists because it has been marked by a number of macroeconomic outcomes that are at odds with orthodox thinking.

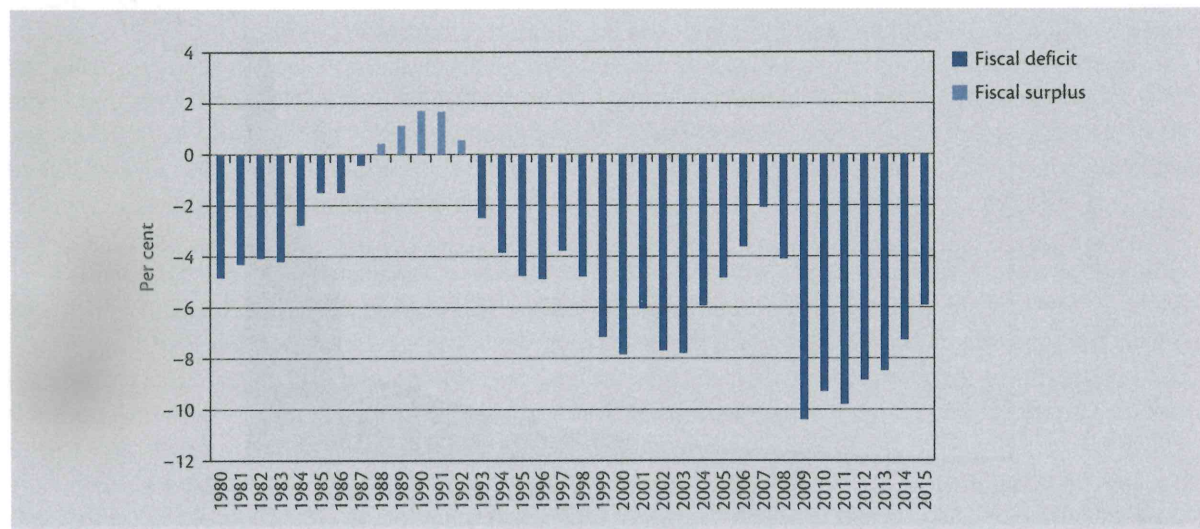
As we can see in Figure 2.5, Japan has run a persistent deficit since 1992. A massive build-up of private indebtedness associated with a real estate boom, accompanied the five years of fiscal surpluses from 1987 to 1991. The boom crashed spectacularly in 1991 and was followed by a period of lower growth 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.

Figure 2.6 shows the evolution of public debt levels as a percentage 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 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 ongoing deficits that the Japanese government has been running to support growth in the economy and maintain relatively low unemployment rates (see Figure 2.6).

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 2.5 Government fiscal balance as a percentage of GDP, Japan, 1980–2015



Source: Authors' own. Data from IMF World Economic Outlook dataset (<http://www.imf.org/weo>).

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 stayed 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 have also stayed very low and not responded adversely to the persistent fiscal deficits. If investors considered the government debt had become increasingly risky to purchase, they would have demanded increasing yields to compensate for that risk. There is no such suggestion – that bond market investors have become wary of Japanese government bonds – to be found here. Nor have they signalled any unwillingness to purchase the debt; demand for the bonds remains high and yields remain low.

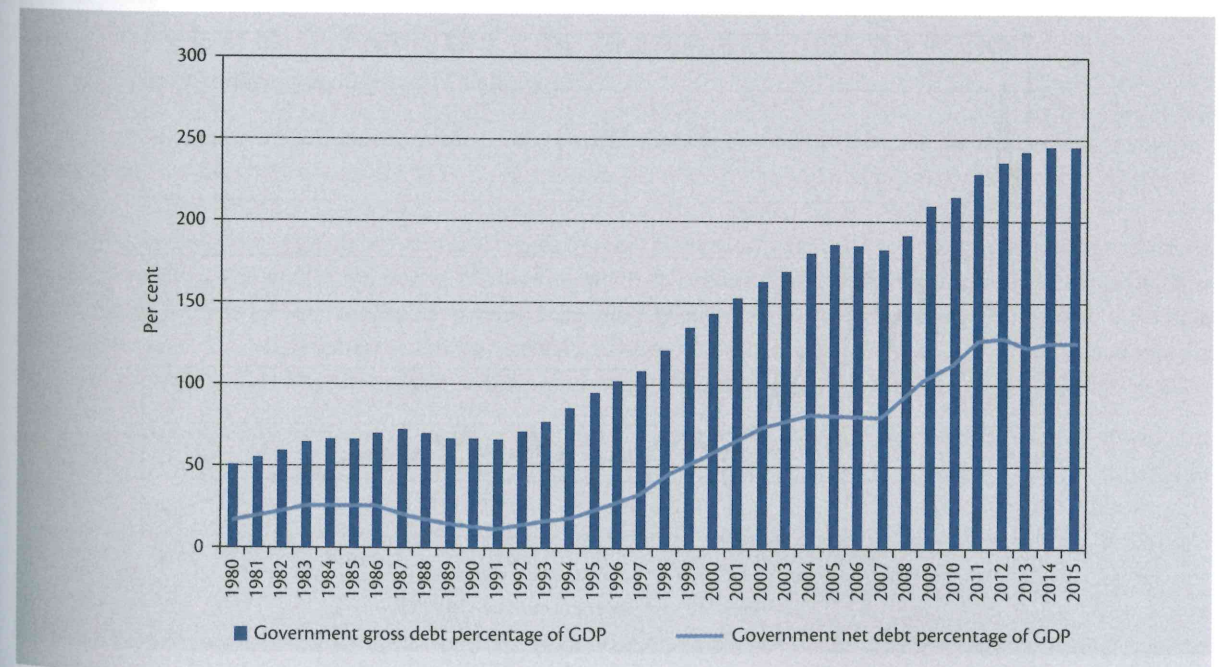
Figure 2.9 shows the inflation and deflation rates for Japan between 1980 and 2015. Inflation occurs when there is an ongoing increase in the general price level, whereas deflation describes the situation when the general price level is continuously falling (negative inflation).

You can see that since 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 no inflationary bias in the modern Japanese economy, as persistently predicted by the mainstream economic theories.

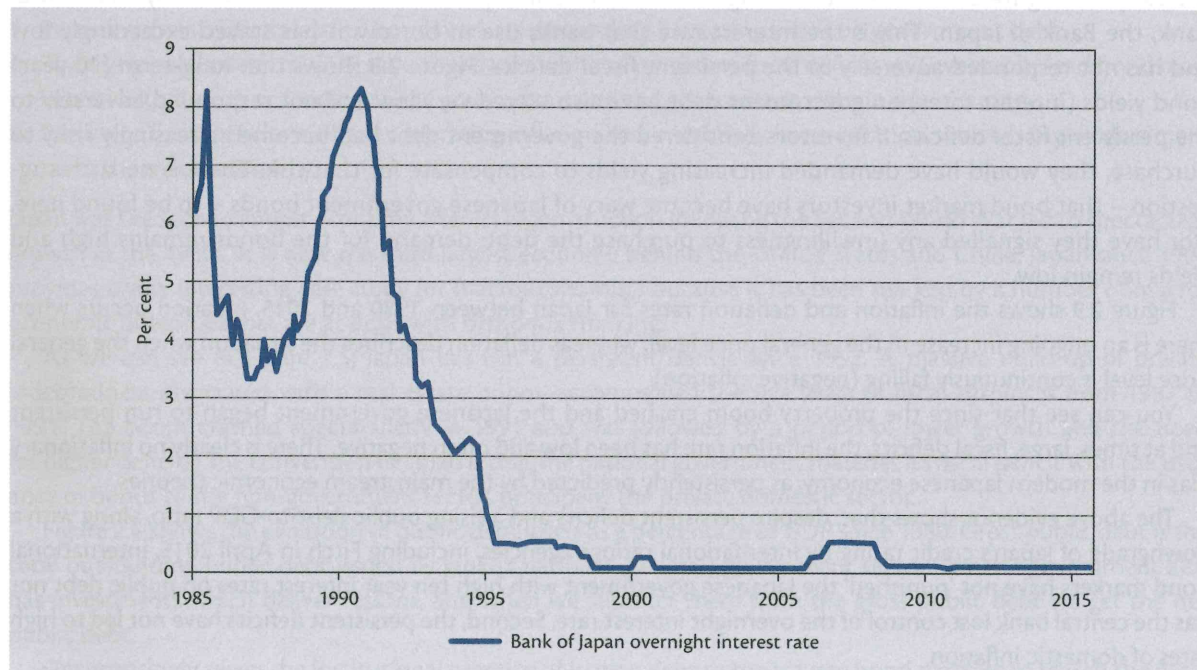
The above evidence shows that, despite persistent deficits and a rising public debt-to-GDP ratio, along with a downgrade of Japan's credit rating by international ratings agencies, including Fitch in April 2015, international bond markets have not 'punished' the Japanese government with high ten year interest rates on public debt nor has the central bank lost control of the overnight interest rate. Second, the persistent deficits have not led 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 an explanation suggests that the mainstream theory is seriously deficient. A MMT

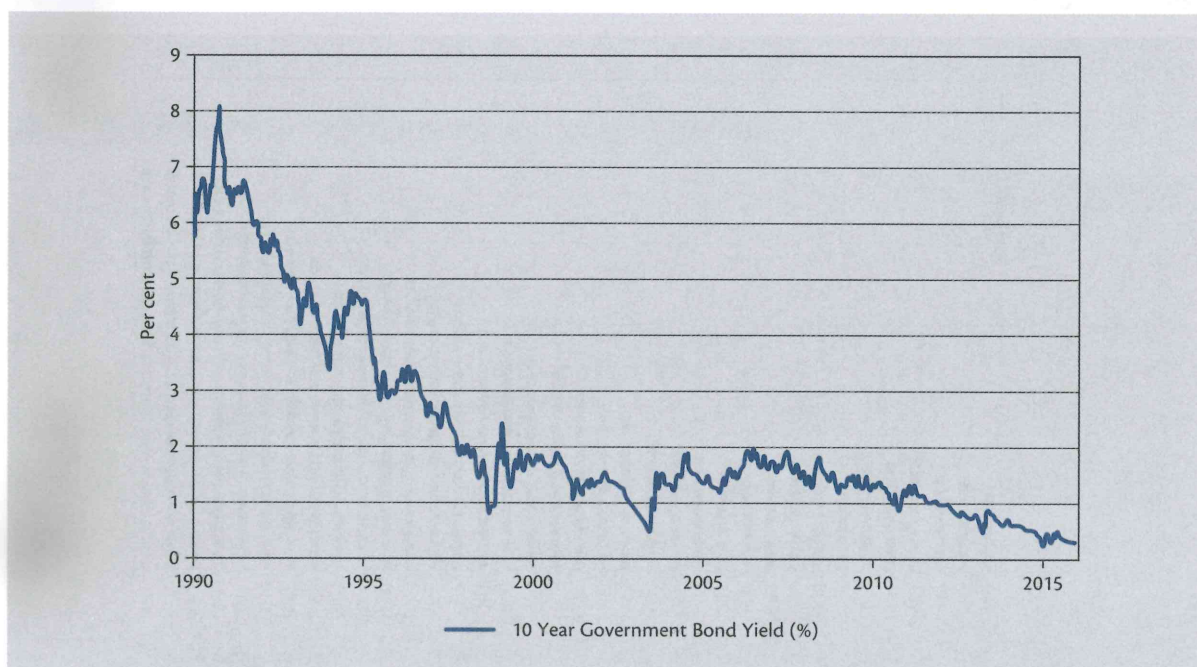
Figure 2.6 Gross and net public debt as a percentage of GDP, Japan, 1980 to 2015



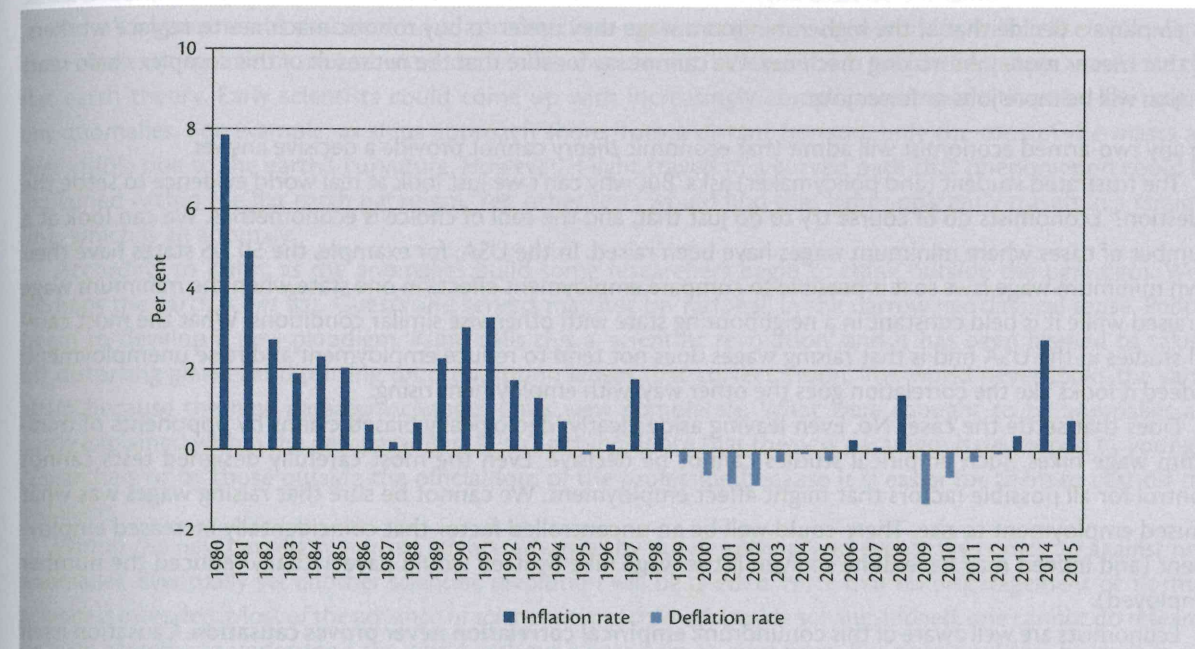
Source: Authors' own. Data from IMF World Economic Outlook dataset (<http://www.imf.org/weo>).

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

Source: Authors' own. Data from Bank of Japan (http://www.stat-search.boj.or.jp/index_en.html).

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

Source: Authors' own. Data from Ministry of Finance, Japan (http://www.mof.go.jp/english/jgbs/reference/interest_rate/historical/jgbcme_all.csv).

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

Source: Authors' own. Data from IMF World Economic Outlook dataset (<http://www.imf.org/weo>).

explanation of these empirical outcomes will be provided in Chapters 20 and 21, 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 policy.

2.4 Why is it so Difficult to Come to an Agreement on Policy? The Minimum Wage Debate

In the previous section, we explored some of the stylised facts and noted that these are things that economic theory ought to be able to explain. In this section, we turn to an example of a policy debate: the minimum wage.

Many countries have legislated minimum wages that are periodically raised. Each time policymakers examine the case for raising the minimum, economists are paraded to predict disastrous consequences for employment should wages be raised. Most of these economists dishonestly proclaim that economic theory reaches a decisive conclusion: minimum wages cause unemployment. In truth, economic theory gives (at least) two answers to the question of the effect of raising minimum wages on unemployment.

1. Raising wages increases business costs that beyond some point will increase the price of output. If we hold the income and purchasing power of consumers constant, it would seem that the higher prices must lead to fewer sales, and hence to lower employment. (There are other effects that could strengthen this impact, such as higher imports from abroad where labour is cheaper, and also substitution of machines for labour whose price has gone up.) Thus, neoliberals argue that raising the minimum wage must lead to higher unemployment.
2. Not so fast, says our two-armed economist. If wages rise, then it is not necessarily true that consumer income and hence purchasing power is constant. After all, most consumption is financed by wages, and the incomes

of those employed at the lowest wages have increased. Those workers buy more goods and services. Firms which sell these goods and services might decide to hire more workers. Those workers buy more, too. If some employers decide that at the higher minimum wage they prefer to buy robotic machines to replace workers, that means more jobs making machines. We cannot say for sure that the net result of this complex chain reaction will be more jobs or fewer jobs.

So any two-armed economist will admit that economic *theory* cannot provide a decisive answer.

The frustrated student (and policymaker) asks 'But why can't we just look at real world evidence to settle the question?' Economists do of course try to do just that, and the tool of choice is econometrics. We can look at a number of cases where minimum wages have been raised. In the USA, for example, the 50 US states have their own minimum wage laws so it is possible to compare employment effects in one state when the minimum wage is raised while it is held constant in a neighbouring state with otherwise similar conditions. What the most careful studies in the USA find is that raising wages does not tend to reduce employment and raise unemployment; indeed it looks like the correlation goes the other way, with employment rising.

Does that settle the case? No. Even leaving aside clearly ideologically biased claims by opponents of minimum wage hikes, such empirical studies cannot be decisive. Even the most carefully designed tests cannot control for all possible factors that might affect employment. We cannot be sure that raising wages was what caused employment to rise. There could well be an uncontrolled factor that coincidentally increased employment (and indeed may have done so even if the wage hike by itself would have actually reduced the number employed).

Economists are well aware of this conundrum: **empirical correlation never proves causation**. Causation itself is a deeply complex topic. While we can put together theory and models and data to make a case, we probably will not be able to prove that 'X causes Y' when it comes to the most significant questions in economics.

John Maynard Keynes argued that the best one can do is to convince by the weight of one's argument. Certainly, one needs theory and probably evidence, maybe even a mathematical model, but even that will not convince an opponent unless the case is made through persuasive argument. Keynes was a master of argument, but even he did not always win. More recently Deirdre McCloskey made a similar claim in her book *The Rhetoric of Economics* (1985). Her point is that evidence alone is not decisive; 'rhetoric', the art of discourse, is also important.

If proof is difficult and theory provides ambiguous answers, can economics make progress? In the final section we address this question.

2.5 The Structure of Scientific Revolutions

In his influential book, *The Structure of Scientific Revolutions*, Thomas Kuhn (1970) advanced a thesis in which he distinguished between 'normal science' that works within a 'paradigm' and a 'scientific revolution' that breaks free of the paradigm – or even smashes it apart. For our purposes, we can think of the neoclassical approach as a 'paradigm' that works within the framework of utility maximisation and rationality, with the Keynesian (/Institutionalist/Marxist) approach as the paradigm-breaking scientific revolution.

Returning to the debate about the minimum wage, the neoliberal conclusion that raising wages causes unemployment is the correct answer if one views the question from within the neoclassical paradigm. In that paradigm, prices ration resources, and at higher prices there will be less demand. As wages rise, employers want fewer workers. It makes sense to argue that unemployment rises.

However, within the heterodox paradigm, what matters is aggregate effective demand (a topic to which we will turn later). Higher wages mean more income and more sales, hence firms want more workers. The net effect of a wage hike could be more employment.

Kuhn's breakthrough was the realisation that most of the time scientists (including economists) work within a paradigm, asking and attempting to answer questions in a manner that is consistent with the paradigm. He calls

this 'normal science' and the research process mainly entails 'puzzle solving'. The 'normal scientist' comes across 'anomalies' that are hard to resolve within the paradigm in which they work, as we see in Box 2.1.

Kuhn's argument was that over time, as researchers pursue normal science working within their paradigm, they come up against more and more anomalies that cannot be explained. Another example would be the flat earth theory. Early scientists could come up with increasingly complicated explanations for the apparent anomalies. For example, as ships approach shore from a distant horizon, only the tops of the masts are first visible due to the earth's curvature. However, if light travels in a curved path that phenomenon could be explained within the flat earth paradigm. Yet, other tests would find that light apparently travels in a straight line, which is an anomaly.

According to Kuhn, as the anomalies build some researchers begin to think outside the paradigm. Well, perhaps the earth is *not* flat. Guests and servers may not be 'rational' in the narrow neoclassical sense. People begin to develop a new paradigm. Kuhn calls this a 'scientific revolution' and it has been likened to taking off distorting glasses and putting on prescription lenses that correct vision. The world never looks the same again because the new paradigm changes one's view completely. What were thought to be anomalies are easily explained within the new paradigm. It isn't a coincidence that the new paradigm is developed by younger researchers or by those outside the officialdom of the profession because it is easier for them to cast off the old ideas.

Within the new paradigm, normal science advances by puzzle solving, and eventually comes up against new anomalies. Eventually yet another scientific revolution will be needed. Note that no disparagement of 'normal' science is intended. Most of the advance of science comes through puzzle solving. Indeed, one cannot do research or even attempt to understand the world without a paradigm to start from. But puzzle solving, by itself, is not enough. Scientific revolutions are needed because paradigms are also constraining; they limit the conception of what is possible.

When he had finished the draft of his classic work, *The General Theory of Employment, Interest and Money* (1936), John Maynard Keynes wrote to a friend, George Bernard Shaw, proclaiming that his new book would revolutionise economic theory, if not at once, then at least eventually. That is quite a claim to make, of course, but Keynes was brilliant, and confident. The immediate reaction to his book seemed to validate his expectation. While not everyone was about to jump aboard it is not an exaggeration to say that many recognised

BOX 2.1

CHALLENGING NEOCLASSICAL CONVENTIONS

A commonly used example is the convention of tipping in a restaurant. If we assume that the diner and the server are both completely rational in the neoclassical sense (that is, selfish), then the tip typically should be negotiated before the meal to induce good service, except in the case where the diner is a local who often frequents the restaurant. The local diner can wait until after the meal to tip for good service. The server will provide good service in advance of the tip, expecting the diner will reward good service. If the local diner pays a low tip then poor service can be expected on the next visit.

The tourist or business visitor, however, might never expect to return to the restaurant. A tip before service could be negotiated depending on the level of service the diner wants. A contract is made and then if the server provides the service contracted the payment is made at dinner's end. The contract might include an external opinion and enforcement mechanism. In practice, we do not observe such contracts. Rather, the diner pays a tip at the end of dinner, based on assessment of services rendered. However, a rational one-time visitor would never pay a tip after service. Why bother? It is too late for the server to deliver poor service. And the diner never expects to return. Such behaviour is an anomaly for the neoclassical paradigm.

the revolutionary nature of his theory. By the 1960s, most macroeconomists considered themselves to be Keynesian.

And yet Keynesian theory soon fell out of favour. Mainstream macroeconomics began to shed Keynesian ideas from the early 1970s, and they were almost completely gone by the 1990s. It would be as if we returned to flat earth theory after once embracing round earth theory.

Note that part of the difference is that economics is a social science that studies human behaviour and proposes policy that directly affects human lives. It concerns topics that are contentious, and where policy benefits some but can hurt the interests of others. All the policies that came out of the Keynesian revolution were opposed by some groups, whether it was social welfare for the poor, social security for the aged, or jobs for the unemployed. Opponents inevitably regroup and attempt a counterrevolution.

Social sciences also experience reversals. Social theories from the past are thrust into the limelight again. Indeed, even in the 'hard' sciences, old ideas sometimes come back. In the USA, for example, the well-established theory of evolution is again under attack. Kuhn had warned that we should not see science as steadily progressing in a linear fashion from myth to truth. There is a tendency to write the textbooks in that manner, but reality is messy.

In any event, the authors of this textbook do view Keynes' *General Theory* as a scientific revolution, in Kuhn's sense, as were Karl Marx's theories presented in his 1867 book *Capital*. In both cases, orthodoxy mounted counterrevolutions to restore neoclassical thought.

By the 1870s three orthodox economists had published books to not only defend, but to strengthen, the arguments of neoclassical economics against Marx's economics. Jevons, Walras and Menger published their contributions between 1871 and 1873, in direct response to Marx (Henry, 2012). In other words, the neoclassical framework was developed as a rebuttal to the Marxian approach. Marx's revolutionary theory carried on, but in much of the West it was sidelined as the neoclassical theory became dominant.

In the case of the *General Theory*, the Keynesian revolution was gradually aborted as a few of Keynes' ideas were integrated into the neoclassical approach, forming the 'Neoclassical Synthesis' which was outlined in textbooks (with Paul Samuelson (1947) in the lead). All the revolutionary insights of Keynes (and Veblen and Marx) were dropped in order to make Keynes more or less consistent with neoclassical economics.

Unlike the case of Marx's *Capital*, which was openly disparaged, Keynes' book had been celebrated. A few of Keynes' ideas were incorporated into the 'Synthesis' and most macroeconomists became 'Keynesian' for some time, even though few fully understood the book.

Heterodox economists insist that this was a mistake, that neoclassical theory should have been dropped, and the revolutionary insights of heterodoxy (stretching all the way back to Marx) should have led to a new paradigm.

While our main purpose in this book is to develop the coherent heterodox alternative, we will present the neoclassical approach as we go along. Students must be familiar with both alternatives.

Conclusion

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 must 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.

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CHAPTER 2 APPENDIX: THE BUCKAROOS MODEL

A modern monetary economy is characterised by a currency regime, whereby transactions between economic agents (for example, 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), students are required to undertake a specified number of hours of Community Service (CS) during each year of their degree programme. Failure to complete the required hours of CS over the duration of the student's degree programme has negative implications for the final grade that the student receives. The Economics Department ran the pilot programme and designed a monetary system to administer the scheme, which we briefly outline below.

Each student is assumed to be subject to a community service tax of say 25 hours' work per semester, payable to the University Treasury. Assume there are University-approved CS providers (for example, child care, aged care, environmental services and so on) who submit bids for student hours to Treasury. Treasury awards paper notes (let's call these Bs as short for '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 '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 and are then returned to Treasury as tax payments by the students. On the other hand, a surplus (deficit) arises in, say, semester one, if total treasury spending is less (more) than the total taxes collected over that period.

Figure 2A.1 University Reserve Roo Note

