

Chapter 1: Introduction

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1. Macroeconomics is a contested discipline with two broad schools of thought, which differ in terms of their perspectives on the effectiveness of markets and the role of Government. These different approaches are examined in this textbook.
2. Macroeconomics analyses the behaviour of aggregates, such as employment, unemployment, GDP, and inflation, whereas microeconomics studies the behaviour of individual economic agents, notably households and firms.
3. Each of the social science disciplines (e.g economics and politics) and physical science disciplines (e.g. physics and chemistry) and has its own language in the form of concepts and theories, which provide the basis for understanding, not merely describing, relevant phenomena.

1.1 What Is Economics? Two Views

US President Harry Truman is said to have sought a one-armed economist because he was so frustrated by the propensity of economists to provide policy advice framed as ‘Well, on the one hand, X, but on the other hand, Y’, where ‘Y’ typically would be the precise opposite policy path to ‘X’.

The story is, of course, funny but it does bring up a problem that is ubiquitous to all social sciences. Even if we know the result we would like to achieve (say, smarter and happier kids), we do not know with certainty which policy choices would produce the desired outcome. Since the main topic of the social sciences—human behaviour—is complex, we often do not understand its causes, or even its nature, and much less do we know how to influence it in a desired manner. Economics is as difficult as the other social sciences, such as psychology and political science as it concerns human behaviour in a social sphere that we designate as ‘the economy’, which itself is hard to define and to delineate from other spheres of social interaction.

Unfortunately, economics is sometimes equated to something like the ‘study of business decision-making’, or even relegated to a narrow sub-discipline as a ‘decision science’ in a highly artificial hypothesised world of hyper-rational automatons that maximise pleasure and avoid pain. Some even see economics as just a branch of mathematics, a view fuelled in part by the heavy use of mathematics and models in much of the discipline.

This textbook will take a broader perspective of the economics discipline, including it within the social sciences. While we do think it is useful to carve off ‘the economy’ from the rest of social life, and to apply ‘economics’ to the study of that area of life, we recognise that the division is necessarily arbitrary. In truth, there is no completely separate sphere of ‘economic life’—so economics is linked to, and incorporates findings from, the other social science disciplines.

Further, we want to stress that there is no single ‘right’ way to do economics. In this textbook we will use a variety of methods and approaches to build our understanding of ‘the economy’. We will occasionally bring in research and methods from other disciplines. We will use some mathematics and modelling. As we believe that economic history as well as history of economic thought helps us to understand our economy today, we will look back in time, both in terms of economic events, but also to examine the insights of the great thinkers of the past.

In the rest of this section we will briefly outline the two main approaches to economics taken by those thinkers, as well as by today’s economists. It is always risky to pigeon-hole individuals and their theories into categories. Just as a politician in a particular political party (say, Labor in Australia, or the Republican Party in America) will hold many views shared by most members of that party, they will likely also hold some views more consistent with those of a rival party. This is true of economists, too. Still, it is useful to identify two approaches to economics that have dominated much of the debate over the past two centuries.

Recalling the story about President Truman’s frustration, we can think of the ‘two hands’ of economics as the orthodox, or neoclassical approach and the Heterodox or Keynesian/Institutionalist/Marxist approach. Let us examine each in turn, while recognising that we must generalise.

Orthodox, neoclassical approach

In the neoclassical approach, there is a presumed, natural human nature: individuals maximise pleasure and avoid pain. Pleasure is defined as ‘utility’, so individuals pursue utility maximising behaviour, avoiding the ‘disutility’ of pain. Further, rational individuals are self-interested - seeking to maximise their own utility, and they do not receive either utility or disutility from the experiences of others. neoclassical economics presumes individuals are ‘rational’, meaning they maximise utility given constraints. If there were no constraints, individuals would maximise with infinite utility—but they are constrained by their resources that they have at their disposal, which are referred to as ‘individual resource endowments’. Mutually beneficial exchange redistributes resources according to preferences, increasing the utility of both parties to the trade.

In the hypothesised free market, exchanges take place at competitively determined relative prices. (Relative prices are ratios; for example: 1 deer = 3 beavers = 6 rabbits = 2 bushels of wheat = 10 hours of labour services.) Participants in markets take relative prices as signals. Relative scarcity will cause the price to rise, inducing suppliers to produce more of a particular traded commodity, and buyers to demand less. For example, if the supply of students trained in economics is insufficient to meet the demand for economists, the relative wage of economists to (say) that of historians, rises. This signals to students that they ought to switch from the study of history to the study of economics. At the same time, employers try to find close but cheaper substitutes—say, political science students. As the supply of economists increases, the relative wage advantage for students trained in economics falls. Of course, other factors enter into decisions, but the important point is that relative prices function as signals to both suppliers (economics students) and demanders (employers of economists).

Equilibrium is defined as the set of relative prices that ‘clear’ markets; a ‘general equilibrium’ is a complete set of prices to clear all markets. One interpretation of Adam Smith’s famous ‘invisible hand’-analogy is that by producing market-clearing prices, the market provides the signals that guide individuals to maximise their utility while also providing the social or public good of ensuring that demand and supply are equilibrated. The hand is ‘invisible’, guiding individuals and the economy as a whole toward equilibrium, with no need of an authority. For that reason, there is little need for government management of the economy.

Certainly government has some role to play in setting and enforcing rules, in providing national security, and (perhaps) for providing a social safety net. But according to this interpretation of Smith, there is no need for the government to direct individuals to serve the public interest because by reacting to price signals and pursuing their own interests, individuals actually act in the public interest.

There is one more important conclusion reached by neoclassical economics: ‘you deserve what you get’. If we all come to the free market to make mutually beneficial exchanges, all seeking to maximise our own individual utility subject to our resource constraints, then the equilibrium allocation is in an important sense ‘fair’. That does not mean that the allocation is equal—some will have more (and achieve greater utility) and others will have less. However, that is because some start with greater endowments (of resources, ability, and drive).

Technically, the idea is that one receives an allocation of resources based on one’s own contribution to the market. If your final allocation is low, it is because you did not bring enough to market: maybe you were born with few resources, you made a constrained choice to obtain

little education, and you prefer leisure over work. In other words, you have no one to blame for your meagre allocation but yourself.

To be sure, neoclassical economics also allows for bad luck, congenital disabilities, and so on. Hence, there is a role for social policy to get involved in altering the allocation in order to protect the poorest and least advantaged. However, generally speaking, allocations ought to be left to the market because it will reward each participant according to productive contributions to the market—a dimension of fairness.

In recent years, the neoclassical approach to economics has been invoked in support of the conservative backlash against post-war economic and social reforms in Western nations (this is generally called neoliberal outside the USA or neoconservative within the USA). This ‘anti-government’ movement is closely associated with the terms in office of President Ronald Reagan in the USA and Prime Minister Margaret Thatcher in the UK. When running for President in 1980, President Reagan promised to “get the government off the backs of the people”; Prime Minister Thatcher was famous for arguing that there is no such thing as society, reflecting the individualistic framework shared by neoclassical economics.

Downsizing government and especially reducing the social safety net, is consistent with the view that government only needs to ‘get the incentives right’, and then the ‘free market’ would maximise individual welfare while the invisible hand will ensure that signals coming from markets guide individuals to do what is best for the economy as a whole.

While the neoliberal/neoconservative policies are most closely associated with conservative political parties, even the moderate parties continued the policies throughout the 1990s and 2000s. For example, President Clinton (a Democrat) echoed President Reagan’s distaste for social welfare programs when he promised to “end welfare as we know it”—in his 1992 election campaign, eliminating the biggest USA anti-poverty program (Aid to Families with Dependent Children) and replacing it with a term-limited program that tries to force aid recipients to work for their benefits (‘workfare’ rather than ‘welfare’).

Outside the USA the more left wing parties such as the Labour Party in the UK pursued similar strategies (such as ‘work for the dole’). neoclassical economic theory provided a strong justification for these economic and social ‘reforms’ as policy would rely more heavily on ‘market outcomes’ while reducing ‘government interference’ into the workings of the ‘invisible hand’.

Finally, let us turn to the neoclassical definition of economics, as it provides a very nice summary of the approach taken.

Neoclassical Definition of Economics: the study of the allocation of scarce resources among unlimited wants.

This is often framed as ‘the economic problem’: while resources are scarce, our wants are unlimited. The ‘problem’ is that we cannot ever satisfy our wants. Many call economics ‘the dismal science’, which comes from this statement of ‘the problem’. While we all try to ‘maximise utility’, resource constraints prevent us from ever achieving maximal bliss.

Another common statement attributed to economists is that ‘there’s no such thing as a free lunch’, which also derives from the definition. Since resources are scarce, there is always a trade-off: if we move resources from one use to another, we necessarily reduce enjoyment in the first use in favour of enjoyment in the second. For example, if we want to have more ‘guns’, we must have less ‘butter’. Or if we want to improve the standard of living enjoyed by ‘Bob’, we must reduce the living standard of ‘Jill’.

Strictly speaking, this would be true only at full employment of all resources. However, with the invisible hand guiding the allocation of resources, flexible relative prices ensure that all scarce resources are fully employed. The idea is that prices will always fall until supply equals demand so that no resource is left idle.

Note also that the trade-off might only be temporary. For example, if we move resources out of the production of consumption goods and into the production of investment goods that raise productive capacity, then in the future we can have more consumer goods. Through economic growth we can increase the quantity of resources so that both ‘Bob’ and ‘Jill’ can have more. This does not violate the admonition that there is no free lunch, however. If we are to have more production in the future, we need to sacrifice some consumption today—we suffer today with lower consumption, but we are willing to endure the ‘pain’ on the promise that in the future we can enjoy more consumption.

We will have much more to say about the neoclassical approach later in the text. However, it is time to move on to the second approach to economics.

Heterodox; Keynesian-institutionalist-Marxist approach

There is a second, long, tradition in economics that adopts a quite different framework. Unfortunately, there is no strong consensus about what to call it. Sometimes it is called ‘nonorthodox’, which appears to define it in opposition to ‘orthodox’ or neoclassical economics. In recent years, many of those working in this tradition have settled on the term ‘heterodox’, but that, too, is usually defined as ‘not in agreement with accepted beliefs’. Yet at one time, those views now associated with ‘heterodox’ economics were dominant, while the ‘orthodox’ views were considered by most economists as ‘unorthodox’ in the sense that they were not in agreement with the beliefs held by most economists!

Further, unlike neoclassical theory, which is substantially accepted by all orthodox theorists, ‘heterodoxy’ is made up of a number of well-established and coherent economic schools of thought¹. While these share a common approach, they also deviate from one another in important ways. The three most important of these schools of thought are the Marxist (following the work of Karl Marx), the Institutionalist (following the work of Thorstein Veblen), and the Keynesian (followers of John Maynard Keynes)².

¹ Note that the approach taken in this text, Modern Money Theory, falls within the heterodox camp. Indeed, it rests upon the foundations of many of the heterodox traditions.

² A caveat is necessary here. Many of those who call themselves “Keynesian”, as well as the approach that is often presented in economics textbooks as “Keynesian theory”, are not Heterodox. They are much closer to the neoclassical approach. Indeed, one of the founders of orthodox macroeconomic theory, Paul Samuelson, called it the “Neoclassical Synthesis” to indicate that its foundations are neoclassical but some of Keynes’s ideas are

What are we to do? In spite of the objections we raised, we will conform to the convention and call this second approach the Heterodox or Keynesian/Institutionalist/Marxist approach. Let us examine the shared framework adopted.

First, according to this approach there is no ‘natural’ human behaviour; rather, it is shaped by institutions, culture, and society. There is nothing ‘natural’ about self-interested (or, better, ‘selfish’) behaviour, nor would such behaviour be ‘rational’ in the neoclassical sense. Humans are social animals and in many cultures, selfish behaviour is punished and selfish individuals are ostracised. Since human survival requires cooperation, selfishness would actually be irrational as it would reduce ones’ chances of survival. In any event, in all known societies, elaborate rituals and traditions are designed to promote cooperation and even sacrifice for the common good.

Human behaviour varies significantly across societies, and the economic system is one factor that helps to determine appropriate behaviour within any particular society. Self-interested behaviour is more acceptable in some societies than in others. It is not a coincidence that neoclassical economic theory was developed largely in Western capitalist societies—and particularly in England. The ‘rational’ behaviour attributed by neoclassical economists to all humans actually comes reasonably close as a description of the behaviour of early British capitalists. In the social environment in which they operated, pursuit of their own self-interest without regard to the welfare of others (especially that of their employees), may have increased their probability of success as capitalists. Further, they operated in a hostile political climate in which the Crown and their feudal lord cronies wanted to increase their own share of the nation’s rather feeble output. Government ‘intervention’ was almost always a bad thing, from the perspective of the first capitalists because government operated substantially in the interest of the Crown and the feudal lords.

We will not go into economic history now. What we wish to emphasise is that human behaviour is surprisingly malleable and complexly influenced by custom and tradition.

Further, most decisions are not ‘rational’ for another reason: the future is uncertain, and even the present and past are uncertain in the sense that we do not fully understand what happened and what is now happening. Clearly, we do not know the future, and we know that we do not. Hence, we cannot know for certain that any action we take is truly ‘utility maximising’. Should I buy the Renault or the Mazda? Once the decision is made and with the passage of time, I might have a better idea of the best choice, but it is probable that even a decade down the road I will not know which would have been best. Obviously, that choice is relatively unimportant and even simple compared to most economic choices one must make. In truth, we almost never know whether we are ‘maximising’ utility—indeed even with hindsight we often cannot tell if we made the right decision.

According to the Heterodox approach, most decisions are not ‘rational’ in the neoclassical sense of the term. Decisions and behaviour depend on a range of other factors, including uncertainty, power, discrimination, prejudice, and segregation. Options available depend on status, social class, race, religion, and gender, for example. These ‘noneconomic’ factors heavily influence and even constrain our choices.

“synthesised” or grafted onto that base. Heterodox followers of Keynes argue that such integration is not possible. We will revisit these issues later in the text.

Heterodoxy rejects the notion that economic outcomes are arbitrated by an impersonal market that only seeks to equilibrate ‘demand and supply’. Actually, market prices are largely administered by firms with market power that allows them to discriminate. Wages are set not to ‘clear’ the labour market, but rather reflect the outcome of conflicted bargaining processes. Capitalism is a system defined by class conflict. In general, workers want to earn as much as they can for the effort they expend, while bosses want workers to produce as much as they can but pay them as little as possible. And, as will be discussed later, unemployment cannot be eliminated through wage reductions that eliminate relative excess labour supply; indeed wage reductions can actually reduce the demand for labour and thus increase unemployment. More generally, wages and other prices are not simply signals of the invisible hand, but rather determine incomes and thus influence business sales and decisions going forward. For that reason, price and wage determination are not usually left to the invisible hand of the market.

Heterodoxy holds a different view of the so-called ‘economic problem’ of scarce resources and unlimited wants. Wants are largely socially created, and there is nothing natural about humans having ‘unlimited’ wants. While it is true that modern advertising operates to continually expand our desires, this can be countered through education. Further, resources are also largely socially created. While it is true that some natural resources have a limited supply, innovations continually produce substitutes. For example, Western societies faced their first major energy crisis in the 19th century when whalers had significantly reduced the number of whales, the source of whale oil used for lighting and other purposes. However, the production of petroleum and then electricity quickly replaced whale oil.

Moreover, the most important resource in any economy is labour. Ironically, in capitalist economies labour is virtually always in excess supply—that is, many workers are left unemployed. It is ironic that neoclassical economics starts from the presumption that resources are scarce, when the obvious empirical fact is that labour is unemployed. Any theory that begins with the presumption that labour is always fully employed, and hence scarce, is ignoring a glaring inconsistency.

Let us look at the heterodox definition of economics.

Heterodox Definition of Economics: the study of social creation and social distribution of society’s resources.

Note that unlike the orthodox definition, this one focuses on the creation of resources. Further, most of that creation is social, rather than individual: people work together to produce society’s resources. Distribution, too, is socially determined, rather than determined by a technical relation (one’s contribution to the production process). For example, labour unions engage in collective bargaining with their employers, who also band together to keep wages low.

The political process is also important in determining distribution; not only does government directly provide income to large segments of society, but it also puts in place minimum wages, benefits, and working conditions that must be met by employers. Government is also a creator of resources; it is not just a user of them. It organises and funds innovative research and development (often in its own labs) that is then used to create resources (frequently by private firms). It also purchases directly from firms, encouraging them to increase hiring and output. Not

only do these government activities increase production, but they also affect distribution. This is well-understood by voters and their representatives in government as policy creates winners and losers—and not usually in a zero-sum manner: some policies can create winners while others might create more losers.

Power, discrimination, collusion, and cooperation all play a role in determining ‘who gets what’. The point is that society does not have to let ‘the market’ decide that women should be paid less than men, for example, or that those with less education should remain jobless and thus poor.

Economics, like all social sciences, is concerned with a society that is complex and continually undergoing change. Since economists study human behaviour in the economic sphere, their task is very difficult. Whatever humans do, they could have done something different. Humans have some degree of free will, and their behaviour is largely based on what they think they ought to do. That in turn depends on their expectations of an unknowable future—they do not know precisely what the outcome of their actions will be, and they do not know what others will do.

Indeed, humans do not know exactly what happened in the past, nor do they fully understand what is happening today. They must interpret the environment in which they live, and realise that they cannot fully understand it. They can never know if they have truly ‘maximised’ their pleasure. They make plans in conditions of existential uncertainty, and do the best they can do given their circumstances. Their actions are almost always taken with consideration given to the impacts on others—humans are above all social animals and that is why economics must be a branch of the social sciences.

What do economists do?

Like sociologists and political scientists, economists are trying to understand particular aspects of human behaviour – for example decisions about levels and patterns of spending, choices about enrolment in post-school education and types of employment to pursue– which we argue above, are influenced by institutions; culture; and society; in addition to economic variables, such as income; the prices of goods; and prospective wage rates for different occupations. In microeconomics our focus is the behaviour of individual consumers and firms, whereas in macroeconomics the focus is the aggregate impacts of these decisions on outcomes, including total output and employment and the rate of inflation. We elaborate on these definitions of microeconomics and macroeconomics, below.

In trying to understand particular forms of economic behaviour, we need to develop theories that require us to decide on those factors that we think influence the particular economic decisions of interest. In other words, we need to make simplifying assumptions (engage in abstraction), which means we necessarily ignore those factors that we consider to be irrelevant. Otherwise we are trying to replicate the complex reality, as we see it, and we are engaging in description rather than theorising. In the development of theory, concepts are formulated, which can be viewed as the building blocks of theory. A model can be viewed as the formalisation of a theory (see below). To understand any theory (model), it is important that students comprehend the underlying concepts.

Social scientists seek to confront their abstract theoretical models, expressed in the form of conjectures about real world behaviour, with the empirical data that the real world provides. For example, we might form the conjecture that if disposable income rises, household consumption will rise. We would then collect the relevant data for disposable income and household

consumption and any other information we thought might bear on the relationship and use various statistical tools (for example, regression analysis) to enumerate the relationship between disposable income and household consumption to see whether our conjecture was data consistent. In engaging in this sort of exercise, the responsible social scientist is not seeking to establish whether the theoretical model is true, for that is an impossible task, given there is no way of knowing what the truth is anyway. Instead, we seek to develop theories or conjectures that provide the best correspondence with the empirical world we live in. This means our current, accepted body of knowledge comprises theories and conjectures that explain the real world data in the most comprehensive way when compared to the competing theories.

Further, we can rarely refute a theory. As President Truman complained, there are two or more sides to the most important economic questions, so there are competing theoretical approaches yielding different conclusions. Even when a researcher resorts to the analysis of relevant data, (which often entails the use of econometrics), they can never refute a theory with 100 per cent confidence. Often the acceptance of a theory is driven by ideology and politics, rather than a balanced assessment of the competing theories and associated evidence.

Implications for research and policy

Many students, like President Truman, find the inability of economists to come up with definitive answers to economic questions to be rather frustrating. Here it is important to emphasise that, like physical sciences and other social sciences, economics is a contested discipline, as is illustrated by our brief discussion of the two schools of thought in Section 1.1. Students will be exposed to some major contemporary debates in macroeconomics later in this textbook, but below we outline a long-standing debate in developed economies, such as the UK, USA and Australia, about the impact of an increase in the minimum wage on unemployment (Advanced Topic 1 in the Appendix to this Chapter).

If there are longstanding debates in economics (and other disciplines), which appear to be unresolved, how can there be progress in our understanding of economic phenomena? This is an important question because decisions made by macroeconomic policymakers have profound effects on the welfare of the population in terms of for example, employment opportunities and wages. Thomas Kuhn developed a way of understanding how progress is made in the social and physical science; see Advanced Material 2 in the Appendix to this Chapter.

1.2 What is Macroeconomics?

In macroeconomics we study the aggregate outcomes of economic behaviour. The word ‘macro’ is derived from the Greek word ‘makro’, which means large and so we take an economy-wide perspective.

Macroeconomics is not concerned with analysing how each individual person, household or business firm behaves or what they produce or earn – that is the terrain of the other major branch of economic analysis, microeconomics. Macroeconomics focuses on a selected few outcomes at the aggregate level and is rightly considered to be the study of employment, output and inflation in an international context. A coherent macroeconomic theory will provide consistent insights into how each of these aggregates is determined and change.

In this regard, there are some key macroeconomic questions that we seek to explore:

1. What factors determine the flow of total output produced in the economy over a given period and its growth over time?
2. What factors determine total employment and why does mass unemployment occur?
3. What factors determine the evolution of prices in the economy (inflation)?
4. How does the domestic economy interact with the rest of the world and what are the implications of that interaction?

A central idea in economics whether it is microeconomics or macroeconomics, is efficiency – getting the best out of what you have available. The concept is extremely loaded and is the focus of many disputes, some more arcane than others. But there is a general consensus among economists that at the macroeconomic level, the ‘efficiency frontier’ (which defines the best outcome achievable from an array of possible outcomes) is normally summarised in terms of full employment. The hot debate that has occupied economists for years is the exact meaning of the term – full employment. We will consider that issue in full in Chapters 11 and 12. But definitional disputes aside, it is a fact that the concept of full employment is a central focus of macroeconomic theory. Using the available macroeconomic resources including labour to the limit is a key goal of macroeconomics. The debate is over what the actual limit is. The related macroeconomic challenge is how to maintain full employment but at the same time achieve price stability, which means that prices are not accelerating upwards or downwards.

The clear point is that if you achieve that then you will be contributing to the prosperity and welfare of the population by ensuring real output levels are high within an environment of stable prices.

This book develops a framework for understanding the key determinants of these aggregate outcomes – the level and growth in output; the rate of unemployment; and the rate of inflation – within the context of what we call a monetary system. All economies use currencies as a way to facilitate transactions. The arrangements by which the currency enters the economy and the role that the currency issuer, the national government, has in influencing the outcomes at the aggregate level, is a crucial part of macroeconomics. Modern Monetary Theory (MMT), which is briefly outlined below, develops a macroeconomic framework that incorporates the unique features of the monetary system.

The MMT approach to macroeconomics

Modern Monetary Theory (MMT) is distinguished from other approaches to macroeconomics because it places the monetary arrangements at the centre of the analysis. Learning macroeconomics from an MMT perspective requires you to understand how money ‘works’ in the modern economy and to develop a conceptual structure for analysing the economy as it actually exists.

Most people are unaware that a major historical event occurred in 1971, when US President Nixon abandoned gold convertibility and ended the system of fixed exchange rates. Under that system, which had endured for about 80 years (with breaks for war), currencies were convertible into gold, exchange rates were fixed, and governments could expand their spending only by increasing taxes or borrowing from the private sector. After 1971, most governments issued their own currencies by legislative fiat; the currencies were not convertible into anything of value, and were floated and traded freely in foreign currency markets.

It is thus essential to understand the notion of a currency regime, which can range through a continuum from fixed exchange rate systems to floating exchange rate systems with varying degrees of exchange rate management in between. Understanding the way the exchange rate is set is important because it allows us to appreciate the various policy options that the currency issuer – the government – has in relation to influencing the main objects of our study; employment, output and inflation.

A flexible exchange rate releases monetary policy from defending a fixed parity against a foreign currency. Fiscal and monetary policy can then concentrate on ensuring domestic spending is sufficient to maintain high levels of employment. A consequence of this is that governments that issue their own currencies no longer have to ‘fund’ their spending. They never need to ‘finance’ their spending through taxes or selling debt to the private sector. The reality is that currency-issuing governments such as those of Australia, Britain, Japan and the US can never run out of money. These governments always have the capacity to spend in their own currencies.

Most of the analysis appearing in macroeconomics textbooks, which filters into the public debate and underpins the cult of austerity, is derived from ‘gold standard’ logic and does not apply to modern fiat monetary systems. Economic policy ideas that dominate the current debate are artefacts from the old system, which was abandoned in 1971.

At the heart of macroeconomics is the notion that at the aggregate level, total spending equals total income and total output. In turn, total employment is related to the total output in the economy. So to understand employment and output determination we need to understand what drives total spending and how that generates income, output and the demand for labour.

In this context, we will consider the behaviour and interactions of the two economic sectors – that is, government and non-government. Then we will unpack the non-government into its component sectors – the private domestic sector (consumption and investment) and the external sector (trade and capital flows). In [Chapter 4](#) we analyse in detail the so-called National Accounts, drawing on these broad macroeconomic sectors. This approach is called the sectoral balance approach, which builds on the accounting rule that a deficit in one sector must be offset by surpluses in the other in the case of the government – non-government dichotomy. More generally, the sum of the sectoral balances nets to zero when we consider the government, private domestic and external sectors.

If one sector spends more than its income, at least one of the others must spend less than its income because for the economy as a whole, total spending must equal total receipts or income. While there is no reason why any one sector has to run a balanced budget, the National Accounts framework shows that the system as a whole must. Often though, but not always, the private domestic sector runs a surplus – spending less than its income. This is how it accumulates net financial wealth. Overall private domestic sector saving (or surplus) is a leakage from the overall expenditure cycle that must be matched by an injection of spending from another sector. The current account deficit (the so-called external sector account) is another leakage that drains domestic demand. That is, the domestic economy is spending more overseas than foreigners are spending in the domestic economy. These concepts are developed in full in [Chapter 5](#).

Here it is useful to differentiate between a stock and a flow. The latter is a magnitude per period of time. For example, spending is always a flow of currency per period (for example, households might spend \$100 billion dollars in the first three months of 2016). On the other hand, a stock is measured at a point in time. For example, a student’s financial wealth could consist of a deposit

account at a local bank, with a balance of \$1000 on January 1, 2016. We explain stocks and flows in more detail in Chapters 4 and 5.

The sectoral balances framework, outlined later, shows that a sectoral deficit (a flow, say per year) accumulates, as a matter of accounting to a financial debt (a stock). On the other hand, a sequence of sectoral surpluses accumulate to a financial asset which is also a stock. MMT is thus based on what is known as a stock-flow consistent approach to macroeconomics where all flows and resulting stocks are accounted for in an exhaustive fashion. The failure to adhere to a stock-flow consistent approach can lead to erroneous analytical conclusions and poor policy design.

From the perspective of fiscal policy choices, an important aspect of the stock-flow consistent approach that will be explained in greater detail in Chapter 5, is that one sector's spending flow equals its income flow plus changes to its financial balance (stock of assets).

The textbook will show that a country can only run a current account deficit if the rest of the world wishes to accumulate financial claims on the nation (financial debt). Often these claims are in the form of government debt. The MMT framework shows that for most governments, there is no default risk on government debt, and therefore such a situation is 'sustainable' and should not be interpreted to be necessarily undesirable. Any assessment of the fiscal position of a nation must be taken in the light of the usefulness of the government's spending program in achieving its national socio-economic goals. This is what Abba Lerner (1943) called the 'functional finance' approach. Rather than adopting some desired budgetary outcome, government ought to spend and tax with a view to achieving 'functionally' defined outcomes, such as full employment.

On matters of terminology, we avoid using the term 'budget' to describe the spending and taxation outcomes for the currency-issuing government. Instead, we use the term **fiscal balance**. A government fiscal deficit occurs when its spending exceeds its taxation revenue, whereas a fiscal surplus occurs when government spending is less than its taxation revenue.

The use of the term 'budget' to describe the fiscal balance invokes the idea that the currency-issuing government faces the same 'budget' constraints as a household. A careful understanding of the monetary system will make it obvious that the government is not a 'big household'. The government can consistently spend more than its revenue because it creates the currency. Households use the currency issued by the government and must finance their spending. Our access is constrained by the sources of available funds, including income from all sources, asset sales, and borrowings from external parties. Whereas households have to save (spend less than they earn) to spend more in the future, governments can purchase whatever they like, as long as there are goods and services for sale in the currency they issue.

A sovereign government must spend first before it can subsequently tax or borrow. A household cannot spend more than its revenue indefinitely because continuously increasing private debt is unsustainable. The budget choices facing a household are thus limited and prevent permanent deficits. A currency-issuing government can never be revenue constrained in a technical sense and can sustain deficits indefinitely without solvency risk. In other words, our own personal budget experience generates no knowledge relevant to consideration of government matters. The alternative narrative, which we present in this book, highlights the special characteristics of the government's currency monopoly.

Fiscal surpluses provide no greater capacity to governments to meet future needs, nor do fiscal deficits erode that capacity. Governments always have the capacity to spend in their own currencies. The consequences of a fiscal surplus – the government spending less than it is taking out of the economy by way of taxation – when a nation runs an external deficit will also be outlined. In summary, budget surpluses force the non-government sector into deficit and the domestic private sector is forced to accumulate ever-increasing levels of indebtedness to maintain its expenditure. The textbook will explain why this is an unsustainable growth strategy and how eventually the private domestic sector is forced to reduce its risky debt levels by saving more and the resulting drop in non-government spending will reinforce the negative impact of the government fiscal surplus on total spending.

The macro model

To organise the way of thinking in this regard we use a conceptual structure sometimes referred in the economics literature as a model – in this case a macroeconomic model. A model is just an organising framework and is a simplification of the system that is being investigated. In this textbook, we will develop a macroeconomic model, which combines narrative and some algebra to advance your understanding of how the real world economy operates. We will necessarily stylise where complexity hinders clarity, but we will always focus on the real world rather than an assumed world that has no relevance to the actual economy.

All disciplines develop their own language as a way of communicating. One might think that this just makes it harder to understand the ideas and we have sympathy for that view. But we also understand that students of a specific discipline – in this case macroeconomics – should be somewhat conversant with the language of the discipline they are studying.

In the Appendix to this book – *Methods, Tools and Techniques* - we present the essential analytical techniques and terminology that you will find used to specify and solve macroeconomic models throughout this book. These tools and techniques are also deployed in the practical exercises that accompany this text and are to be found on the internet home page for the book. The Appendix should be regularly consulted.

A macroeconomic model draws on concepts and algebraic techniques to advance our understanding of the main economic aggregates (such as output, employment and price level). This textbook design is unique because it specifically develops the MMT macroeconomic model, which will be applicable to the real-world issues including economic policy debates. The application to policy is important because macroeconomics is what might be termed a policy science.

By placing government as the currency issuer at the centre of the monetary system we immediately focus on how it spends and how that spending influences the major macroeconomic aggregates that we seek to explain. The framework will at first, provide a general analysis of government spending that applies to all currency-exchange rate systems before explaining the constraints (policy options) that apply to governments as we move from a flexible exchange rate to a fixed exchange rate system. We will consider how the design of the monetary system impacts on the domestic policy choices open to government and the outcomes of specific policy choices in terms of output, employment and inflation.

Fiscal and monetary policy

The two main policy tools that influence what is termed the demand or spending side of the economy are monetary and fiscal policy.

Fiscal policy is represented by the spending and taxation choices made by the government (the ‘treasury’). The net financial accounting outcomes of these decisions are summarised periodically by the government fiscal position. Fiscal policy is one of the major means by which the government seeks to influence overall spending in the economy and achieve its aims.

The textbook will show that a nation will have maximum fiscal space:

- If it operates with a sovereign currency; that is, a currency that is issued by the sovereign government and its value is not pegged to foreign currencies; and
- If it avoids incurring debt in foreign currencies, and avoids guaranteeing the foreign currency debt of domestic entities (firms, households, and state, province, or city debts).

Under these conditions, the national government can always afford to purchase anything that is available for sale in its own currency. This means that if there are unemployed resources, the government can always mobilise them – putting them to productive use – through the use of fiscal policy. Such a government is not revenue-constrained, which means it does not face the financing constraints that a private household or firm faces in framing its expenditure decision.

To put it as simply as possible – this means that if there are unemployed workers who are willing to work, a sovereign government can afford to hire them to perform useful work in the public interest. From a macroeconomic efficiency argument, a primary aim of public policy is to fully utilise available resources.

The central bank in the economy is responsible for the conduct of monetary policy, which typically involves the setting of a short-term policy target interest rate (Fed Funds in the USA, also called bank rate in many countries). In the recent global economic crisis the ambit of monetary policy has broadened considerably and these developments will be considered in Chapter 15.

The typical roles of a central bank include not only the conduct of monetary policy via the overnight interbank lending rate, but also operating the interbank clearing mechanism (so that bank cheques clear among banks), acting as lender of last resort (to stop bank runs), and regulating and supervising the banks.

MMT considers the treasury and central bank functions to be part of what is termed the consolidated government sector. In many textbooks, students are told that the central bank is independent from government. The MMT macroeconomic model will demonstrate how it is impossible for the two parts of government to work independently if the monetary system is to operate smoothly.

Policy implications for sovereign nations

MMT provides a broad theoretical macroeconomic framework based on the recognition that sovereign currency systems are in fact public monopolies *per se*, and that the imposition of taxes coupled with insufficient government spending generates unemployment.

An understanding of this point will be developed to allow the student to appreciate the role that government can play in maintaining its near universal dual mandates of price stability and full employment. The student will learn that there are two broad approaches to control inflation available to government in designing its fiscal policy choices.

Both approaches draw on the concept of a **buffer stock** to control prices. We will examine the differences between the use of:

- a) *Unemployment buffer stocks*: The neoclassical approach, which describes the current policy orthodoxy, seeks to control inflation through the use of high interest rates (tight monetary policy) and restrictive fiscal policy (austerity), which leads to a buffer stock of unemployment. In Chapters 11 and 12, students will learn that this approach is very costly and provides an unreliable target for policy makers to pursue as a means for inflation proofing; and
- b) *Employment buffer stocks*: Under this approach the government exploits its fiscal capacity, inherent in its currency issuing status, to create an employment buffer stock approach. In MMT, this is called the **Job Guarantee (JG)** approach to full employment and price stability. This model, which is considered by MMT to be the superior buffer stock option, is explained in detail in Chapter 12.

The MMT macroeconomic framework shows that a superior use of the labour slack necessary to achieve price stability is to implement an employment program for those who are otherwise unemployed as an activity floor in the real output sector, which both anchors the general price level to the price of employed labour of this (currently unemployed) buffer and can produce useful output with positive supply side effects.

1.3 Macro and the Public Purpose

The households and business firms in a modern capitalist economy make many of the important economic decisions that contribute to determination of the level of employment and output, the composition of that output, the distribution of income, and the prices at which output is sold. Claims are sometimes made that a ‘free market’ economy comprised of individuals seeking only their own self interest can operate ‘harmoniously’ as if guided by an ‘invisible hand’ (see Section 1.1). In fact, economists had rigorously demonstrated by the 1950s that the conditions under which such a stylised economy could reach such a result couldn’t exist in the real world. In other words, there is no scientific basis for the claim that ‘free markets’ are best.

In any case, these claims, even if true for some hypothesised economy, are irrelevant for the modern capitalist economies that actually exist. This is because all modern capitalist economies are ‘mixed’, with huge corporations (including multinational firms), labour organisations, and big government. Individuals and firms operate within socio-political-cultural-economic structures that are constraining but also enabling.

Sometimes the goals of individuals and firms coincide with what might be called the public purpose, while often they do not. In this section we will discuss the public purpose and the role played by government in trying to align private interests with socially progressive goals.

What is the public purpose? It is not easy to define or to identify the public purpose. One of the basic functions of any social organisation is to provide the necessary food, clothing, shelter, education, health care, legal framework, and socialisation for survival of the society.

While the subject of this course is economics, there is no sharp distinction between the sphere of economics and the spheres of other social sciences that study social processes. We usually think of the economy as the part of the social organisation that is responsible for provision of the material means of survival—the food, clothing, shelter, and so on. However, the economy is always embedded in the social organisation as a whole, affecting and affected by culture, politics, and social institutions.

Even if we can agree that any successful economic organisation should be able to produce adequate food for its population, that still leaves open many questions: What kind of food?; How should it be produced?; How should it be distributed?; and even What does adequate mean?

Further, no society is comprised of harmonious individuals and groups. There are always conflicting claims and goals that must be moderated. There is no single, obvious public purpose to which all members of a society wish to strive. Even if we can identify a set of goals that the majority of society would like to work toward, that set will surely change over time as hopes and dreams evolve. The public purpose is an evolving concept.

The position taken in this book is that there is no ‘invisible hand’ that ensures that private interests are consistent with the public purpose. Indeed, the economy is just one component of the social organisation that is necessary to establish the always-evolving public purpose and that is necessary to work towards achievement of the public purpose.

The ‘market’ is just one institution among a wide variety of social institutions working to delineate social goals that comprise the social and private purposes. Other institutions include political organisations, labour unions, manufacturers, and NGOs (non-governmental organisations).

As we noted at the beginning of this Chapter, the national government must play an important role in society as it can help to identify the social purpose and to establish a social structure in which individuals and groups will work toward achieving the social purpose.

While it is admittedly difficult to outline what defines the social purpose, it is possible to identify widely accepted goals. For example, the United Nations Universal Declaration of Human Rights (1948) commits signatory nations to a common set of relatively well-defined goals.

The declaration is outlined on the United Nations Home Page:³

Now, Therefore THE GENERAL ASSEMBLY proclaims THIS UNIVERSAL DECLARATION OF HUMAN RIGHTS as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their

³ <http://www.un.org/en/universal-declaration-human-rights/> accessed January 15, 2016.

universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.

The Articles that define the Declaration include:

- Everyone has the right to life, liberty and security of person.
- No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms.
- Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted them by the constitution or by law.
- Everyone has the right to freedom of movement and residence within the borders of each state.
- Everyone has the right to a nationality.
- Men and women of full age, without any limitation due to race, nationality or religion, have the right to marry and to found a family. They are entitled to equal rights as to marriage, during marriage and at its dissolution.
- Everyone has the right to own property alone as well as in association with others.
- Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change their religion or belief, and freedom, either alone or in community with others and in public or private, to manifest their religion or belief in teaching, practice, worship and observance.
- Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.
- Everyone has the right to freedom of peaceful assembly and association.
- Everyone has the right to take part in the government of their country, directly or through freely chosen representatives.
- Everyone has the right of equal access to public service in their country.
- Everyone, as a member of society, has the right to social security and is entitled to realisation, through national effort and international co-operation and in accordance with the organisation and resources of each State, of the economic, social and cultural rights indispensable for their dignity and the free development of their personality.
- Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment.
- Everyone, without any discrimination, has the right to equal pay for equal work.
- Everyone who works has the right to just and favourable remuneration ensuring for themselves and their family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.
- Everyone has the right to form and to join trade unions for the protection of their interests.

- Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay.
- Everyone has the right to a standard of living adequate for the health and well-being of themselves and of their family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond their control.
- Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.
- Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.

It is obvious that many of these identified human rights, especially near to the end of this list, are connected to the operation of the economy. For example, we argued above that any successful economy should provide adequate food, clothing, and shelter, and many of the human rights listed in the UN Charter address the material well-being of a nation's population.

Further, other human rights that superficially appear to be unrelated to economic performance actually presuppose fulfilment of other human rights that are directly related to material well-being.

For example, in a modern capitalist economy access to employment (one of the recognised rights) is necessary for full participation in society. Not only does a job provide income that allows one to purchase food, clothing, and shelter, but it also provides access to social networks, generates feelings of self-worth as one contributes to social production, enhances social prestige, and helps to provide for retirement in old age.

Indeed, employment has been shown to have a wide range of other benefits to individuals and to society including better physical and psychological health, reduced crime and drug abuse, lower child and spouse abuse, and greater participation in other social and political activities.

To be sure, this list (which is itself only a partial listing of the agreed universal rights) includes many rights that have not been fully achieved even in the wealthiest and most democratic nations. In that sense, these rights are 'aspirational', with the signatory nations committing to striving toward achieving them. Again, if we look at the example of the right to work and to an adequate standard of living, those are rights that are routinely violated even in the best of times in the wealthiest of nations. Still, these universally recognised rights provide a measure against which nations can measure their progress.

Concluding thoughts on the public purpose

We conclude with three important points.

First, the public purpose is broad and evolving over time, and for these reasons it varies across time and place. It should include rising living standards, particularly for those at the bottom of society. Environmental sustainability must be included. Reduction of racial, ethnic, and gender inequalities across the full socio-political-economic spectrum is an important component of the

public purpose. This must go beyond simple economic measures such as family income to include full participation in the life of the community. The public purpose also should include reductions of crime, corruption, cronyism, invidious distinction, conspicuous consumption, and other social pathologies.

Second the UN Charter lays out what it sees as ‘universal’ human rights. This is a useful, but not wholly satisfactory list to be included in a statement of the public purpose. What is considered to be a human right today might have appeared to be radically utopian a century ago; and today’s list will appear far too cautiously conservative at some date in the future.

The public purpose is inherently a progressive agenda that strives to continually improve the material, social, physical, cultural, and psychological well-being of all members of society. It is inherently ‘aspirational’ in the sense that there is no end point as the frontiers of the public purpose will continually expand.

Third, the national government as well as international organisations (such as the United Nations) must play important roles in shaping our vision regarding the types of societies to which we aspire. And beyond setting these goals, governments at all levels must take the lead in developing sets of institutions, rules of behaviour, and sanctions for undesirable behaviour in order to move toward reaching the goals set as the public purpose.

As an example that demonstrates these points, a half century ago national governments and international organisations set about to eliminate the devastating disease known as smallpox. While markets and for-profit production played a role in helping to develop vaccines, in distributing the vaccines, and in formulating information campaigns, private initiative alone would never have eliminated the disease.

The task was too big, it was not completely consistent with the self-interest of profit seeking behaviour, and it required international cooperation beyond the reach of even the largest firms.

Hence, governmental organisations had to play a role.

With respect to the aspirational nature of the public purpose, successful elimination of smallpox would not be the end, but rather would serve as the beginning of a new campaign, to eliminate another disease, and then another and yet another.

Perhaps in a long-distant future, a human right to a disease-free life would be recognised, adding to an ever-increasing list of established rights that all nations would be expected to protect.

While we cannot, of course, imagine such a future, it was not so long ago that the Congress of the US did not recognise the voting rights of women and African Americans. Today, any nation that denies the vote to members of society on the basis of gender, religion, race or ethnicity, or national origin is considered to be in violation of human rights, and thus, to be an international pariah—even though such restrictions were considered acceptable just a few generations ago. For example, white US women over the age of 21 did not secure the vote until the 1920 Presidential election, whereas in the UK suffrage was extended to all women over the age of 21 in 1928. In Australia aborigines were granted the right to enrol and vote in Federal elections in 1962. Many developed countries did not give women or minorities the vote until the 20th Century.

The public purpose is inherently progressive; it can never be finished.

Appendix: Advanced Material

1. The minimum wage debate

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 as employers downsize. (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 selling them might decide to hire more workers. Those workers buy more, too. Even 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.

The frustrated student 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 controlled tests cannot control for all possible factors that might affect employment. We cannot be sure raising wages caused employment to rise. There could well be an uncontrolled factor that coincidentally increased employment even though the wage hike by itself would have 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 and maybe even a math model, but even that will not convince an opponent unless the case is made through a persuasive argument. Keynes was a master of argument—but even he did not always win. More recently Deidre McCloskey has made much the same argument in her book *The Rhetoric of Economics* (1985).

Again, her point is that evidence alone is not decisive; ‘rhetoric’, or the art of discourse, is also important.

2. The structure of scientific revolutions

In his influential book, *The Structure of Scientific Revolutions*, Thomas Kuhn (1970) advanced a thesis in which he distinguishes between ‘normal science’ that works within a ‘paradigm’ and a ‘scientific revolution’ that breaks free of the paradigm. For our purposes, we can think of the neoclassical approach as a ‘paradigm’ that works within the framework of utility maximisation and rationality, with Keynesian (/Institutionalist/Marxist) 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 we will turn to 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 as largely one of ‘puzzle solving’.

The ‘normal scientist’ comes across ‘anomalies’ that are hard to resolve within the constraints of the paradigm within which they works. An example commonly used 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 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 diner disappoints, they can expect not only bad service but perhaps even worse on the next visit (servers have been known to spit into food, after all).

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 spit in the food. And the diner never expects to return. Such behaviour is an anomaly for the neoclassical paradigm.

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 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. An anomaly.

According to Kuhn as the anomalies build, some researchers begin to think outside the box of the paradigm. Well, maybe the earth is not flat. Maybe guests and servers are not ‘rational’ in the narrow neoclassical sense. They 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 as 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 officialdom of the profession as 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. 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.

John Maynard Keynes wrote a friend, George Bernard Shaw, when he had finished drafts of the *General Theory* 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 confident and brilliant. The immediate reaction to his book seemed to validate his expectation. While not everyone was about to jump aboard Keynesian theory, it is not an exaggeration to say that many recognised 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 and can hurt the interests of others. All of the policies that came out of the Keynesian revolution were opposed by some groups—whether it is social welfare for the poor, social security for the aged, or jobs for the unemployed. Opponents inevitably regroup and attempt a counterrevolution.

In all these respects, the other 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’s *General Theory* as a scientific revolution in Kuhn’s sense, as was Karl Marx’s theories presented in his 1867 book *Capital*. In both cases, orthodoxy mounted counter revolutions to restore neoclassical thought. Already 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 great contributions between 1871 to 1873 in response to Marx (Henry, 2012).

In the case of the General Theory, the Keynesian revolution was gradually aborted as a few of Keynes's ideas were wedded to the neoclassical approach, forming the 'Neoclassical Synthesis' of textbooks (with Paul Samuelson (1947) at 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's book was celebrated. Most macroeconomists became 'Keynesian' even though few understood the book and few of Keynes's ideas were actually adopted in the 'Synthesis'.

Heterodox economists insist that this was a mistake. Instead, 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.

Let us turn to a heterodox framework for macroeconomics. While we will throughout this book present the neoclassical approach, our main purpose is to develop the coherent Heterodox alternative.

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